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Mash Journal

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Manipal Alumni Science and Health (MASH) Journal

Introduction

Dear Colleagues of MAAM,

As we close the year for 2015, we continue to be thankful for being given the chance to be part of the caring process in the health delivery system; at the same time, we are also mindful of the obstacles we have in our path to improved healthcare. As we reflect on the health issues that have plagued the globe this year, we need to be well-informed and employ evidence-based findings that are constantly evolving.

We at the Editorial Board of the MASH Journal have also been doing our own reflection on its significance and our target audience, and thence its contributors. With the increasing focus on impact factors in publications, we are aware that career promotions of those in the academia would depend on securing higher points in universally recognised research awarding systems. Thus, we re-iterate that the main focus of the Journal is to encourage a research-based mindset among our future doctors and since they will be the ones eventually taking over the medical and dental landscape (and our care in the twilight years), that is good enough reason for us all to be more involved in nurturing and guiding them. Of course, no one is duty-bound to contribute as we are well aware that everybody has become busier nowadays but we would like to instead emphasise that any help in aiding this Journal to pick up speed in its infancy would be most welcome. We requested write-ups from experts in various fields but have not received any as yet. Nonetheless, we understand that more time is required to build up the Alumni's confidence in the viability of this endeavour; therefore, we had to resort to consider putting up personal studies some of us had pending so as to gather sufficient material to produce an Issue and were also delighted by a contribution from a member currently in specialty training. We felt previously unpublished papers, if made more simple for the undergraduate level, were appropriate and hope that would in turn encourage submissions from the medical students of MMMC themselves – that would then satisfy the primary purpose of this Journal. Therefore, considering the rather dismal response, the Board has decided that we would have only one Volume/Issue this year.

We have managed to secure an ISSN number for the Journal and for the sake of professionalism, we can retain the abbreviated "MASH Journal" in parlance amongst ourselves but as far as the rest of the medical community is concerned, the Journal will be known by its full title "Manipal Alumni Science and Health Journal". However, getting the Journal indexed will be a long process and for that, we cannot rely purely on undergraduate contributions. Thus, we will need more proactive intervention next year to keep this Journal relevant and hopefully, vibrant. But for now, we are taking baby steps and this Issue will showcase two very simple Original studies that have been done before with no external funding and our point is that research can be done by anyone, provided the correct principles are applied and the eventual message thereof succinctly

delivered. A Review article not previously published was also extracted from a medical newsletter and formatted to an accepted scientific guideline level. And lastly, an interesting Case study is also hereby presented – due to the coincidental specialties of the present contributors, we have had no choice but to focus this Issue towards psychiatry, neuropsychiary and neurology. With more contributions from other fields in future, we are confident subsequent Volumes will be able to focus on various other specialties and we look forward to submissions from all of you as well as support to newer Editorial Board members, to keep up the good name of our ever active MAAM. Finally, a big appreciation goes out to our reviewers who selflessly offered their time in providing their valuable comments and opinions on the various articles accepted in this Issue of the MASH Journal.

We hope you enjoy this 2nd Volume and best wishes to everyone for 2016 from all of us in the Editorial team.

Prem Kumar Chandrasekaran
Editor, on behalf of the MASH Journal Editorial Board

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All submitted articles will first be screened by the Editorial Board to see if the articles confirm to the standard and style of the journal as per the manuscript submission criteria. The article is then sent to a member of the Peer Review Committee for scrutinising and feedback before being accepted for publication.

MASH Journal 2014; 1(1): 1

This House Believes That Medical Cases Should Be Decided By Doctors (Proposer)

Dato Dr Ravindran Jegasothy[1]

The medico-legal environment is challenging, to say the least. Malaysia is following international trends with an increasing number of medico-legal cases over the last 10 years especially in the field of Obstetrics & Gynaecology.

There are no statistics easily available of the total cost to the nation of medico-legal issues. Data from the medical indemnity societies do not clearly disclose the types and outcomes of their cases. There are no easily available statistics from the judiciary regarding medico-legal cases that includes the private sector.

Doctors play a role in court as a factual witness, expert or defendant. Courts have commented that expert witnesses are in a privileged position: indeed only experts are permitted to give an opinion in evidence. Outside the legal field, the court itself has no expertise and for that reason frequently has to rely on the evidence of experts. Such experts must express only opinions which they genuinely hold and which are not biased in favour of one particular party.

The court held principle for determining negligence has evolved from that of Bolam (which favoured doctors) to Rogers & Whitaker. The speaker will put forward arguments to advance the case for mediation by doctors as a method for settling medico-legal issues. Sun Tzu's Art of War dictates that one does not reveal our plans to the other side in a debate. So the following is for your reading pleasure!

Just a reminder that avoiding a medico-legal suit may not be easy as ABC. But there is an A to G of risk management.

A. Avoid shortcuts. There is a process that needs to be followed for all procedures in Medicine. There is a reason for this. You shorten it at your peril.

B. Benchmark. Learn from others who do things better than you.

C. Credentialling. You must be appropriately trained before you embark on performing any procedure.

[1] Retired Senior Consultant & Head, Department of Obstetrics & Gynecology,
Kuala Lumpur Hospital, Malaysia

D. Document. “If it ai’nt written, it ai’nt done.” Your best defence in court is your records. No retrospective entries unless it is clearly stated and for a reason.

E. Evidence based medicine. You have the experts on your side if you show evidence of this.

F. Frank explanation. Provide one when things go wrong. Many patients appreciate you for that and may not take you to court.

G. Guidelines. Always be systematic and get your team to follow guidelines. There will be less opportunities for things to go wrong.

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A Pilot Study On Career Inclination Amongst Year 10 Students

Seo Yiie Huern[2], Khairul Anwar Khairuddin[3], Amalina Ismail[4] and Somsubhra De[5]

During the year 10, students have to make the decision on their career pathway whether to take up arts or science subjects. It is believed that during these formative years, this decision is influenced by various factors.

Objective: To determine and compare the influence of various factors like age, gender, location, maternal and paternal occupation and their education levels on the career inclination of year 10 students.

Methods: It is a cross-sectional study by using the questionnaire method. Based on the interests marked by students, the career inclination was categorized into arts or science pathways. The career inclination was then compared with the various factors and correlation and regression analysis was done. The differences were analyzed by chi square test using Epi Info 7.0.

Results: This study involved 47 year 10 students. Age and maternal education level were found to be significant in influencing the inclination towards the Arts or Science career path. The younger students tend to prefer the Science stream. The children with mothers whose education level was up to primary level showed more inclination towards Arts stream. The other factors were not statistically significant.

Conclusion: It is possible that children at a younger age are influenced towards the science stream due to social approach to people with technical background. Mothers with primary level education might be discouraging their children towards more technical career choices. However the role of media and teachers or counselors cannot be undermined as they might also play a role in the career inclination of these year 10 students.

[2] Medical Students (Melaka Manipal Medical College)
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[4] House Officer, KKM
[5] Associate Professor (Melaka Manipal Medical College)

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Transycerebellar Diameter In The Third Trimester Of Gestation And The Prediction Of Gestational Age As Compared To BPD, HC, AC And FL In Fetal Biometry

Dr.Nina Mahale[6]

Estimation of Gestational age has always been an important aspect in the field of obstetrics. The traditional methods of assessing gestational age where based on the menstrual history. This was probably the simplest method to find out the period of gestational age the pregnant mother should have an accurate knowledge about their menstrual cycle including their date of last menstrual period.

Ultrasound measurements of parameters were used and cumbersome formulae were derived at for the calculations of Gestational age. These formulae required multiple parameters like bi-parietal diameter, head circumference, abdominal circumference and femur length. These formulas though were lacking in consistency with wide variations in their interpretation. Their calculation was complex with varied reproducibility. Also their accuracy decreased towards the later half of third trimester.

All these problems therefore are inspiring the scholars to find easier and more accurate method of estimation of gestational age. One such parameter is the trans cerebellar diameter (TCD). TCD can be measured from around 11-12 weeks of pregnancy. It has been shown to increase with period of gestation. It has also been used as a tool for the evaluation of gestational age.

TCD is also being used for the diagnosis of IUGR. It is known to be one of the last possible parameters to be affected by IUGR, as the blood supply to the cerebellum is preserved till alte. TCD is also being studied for the prediction of certain medical conditions like Down's Syndrome.

In our study we have measured the TCD in the third trimester of pregnancy and tried to find out if TCD corresponds to gestation and how accurate is the prediction of gestational age by TCD compared to the existing parameters, and can it be used to replace the existing parameters for predicting the gestational age.

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Do Modern Gadgets Lower Fertility Potential?

S.Prabhakar[7]

With modernization and widespread use of electronic gadgets like cell phones and laptops human exposure to electromagnetic radiation(EMR) has increased. Radiation emitted from cell phones, cell phone towers, FM towers, wifi, laptops, microwave ovens are called electromagnetic radiation (EMR). EMR causes significant health hazards to humans, animals, birds, plants and environment.

Most scientific and public attention regarding cell phone radiation focussed on evidence suggesting increased risk of brain tumors. A little known but growing research points to a new concern - Sperm Damage.

Our study reviewed literature on the effects of EMR on the human body in general and in particular the effects of cell phone radiation on the fertility potential of the male. We also compared our findings on 20 patients with those reported in peer reviewed studies.

Worldwide there are 4.6 billion cell phone subscribers, India with population of 1.25 billion and a mobile subscriber base of 65crores and growing at 1.5crore/month and nearly 4.5lakh mobile towers to meet the communication demand.

A cell phone transmits 1-2 watts of power. The specific absorption rate(SAR) - the rate at which radiation is absorbed by the human body measured in watts/kg of tissue.
The SAR limit in USA is 1.6W/kg for 6 mins. Restricting usage to 18-24 mins/day.

Studies have shown that men carrying cell phones in talk mode in pant pocket or belt holster were likely to have poorer sperm counts and motility. The exact mechanism of damage is not known but it may not be just simple heating. The pathological changes not only affect sperm count and motility but also found to increase oxidative stress, dna damage and alter morphology.

Men who carried phone in pant pocket had 11% fewer motile sperms than those who didn't (Kilgallon 2005). Men who used cell phone intensively in a 5 day test period showed a 19% drop in motile sperms from previous level (Dovoudi 2002). Men who talked for >1hr/day had 17% drop in motile sperms as compared to 15 mins/day (Fejes 2005)
Lab studies on rats,rabbits similar findings on rep.health. Our study sample of 20 patients attending infertility clinic showed similar results.
Conclusion:

[7] Consultant Urologist & Andrologist,
Manipal Hospital Salem,Tamilnadu, India

Cell phones are regarded as the cigarettes of the 21st century. With increasing infertility rates studies are a wakeup call for male cell phone users who desire to be fathers. Consumers practise safe cell phone use habits, men should avoid carrying in pant pockets/belt in talk mode. Strict radiation norms to be enforced. Increased public awareness, cooperation from cell phone companies are the need of the hour.

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Renal Papillary Necrosis- A Diagnosis Often Missed

S.Prabhakar[8]

The incidence of diabetes is on the rise globally.India is fast becoming the diabetes capital of the world. Among the common infections diabetics face is UTI. One of the often missed diagnosis in cases of fulminant UTI and sepsis is renal papillary necrosis.

RPN is a Coagulative necrosis of the renal medullary pyramids and papillae. Brought about by several associated conditions and toxins that exhibit synergism towards development of ischemia. Potentially disastrous condition esp. if bilateral, or in the setting of multiple medical problems. 60% of RPN occurs in diabetes, other potential predisposing conditions are urinary tract obstruction, analgesic nephropathy, sickle cell disease, liver cirrhosis, systemic vasculitis.

The tip of the renal papillae receives marginal blood supply. Tenuous blood supply is further compromised by pathological states like infection, inflammation causing interstitial odema, microangiopathy of diabetes, intraluminal stasis of sickle cell disease, oxidative damage of analgesic nephropathy.

Clinical presentation is variable but most cases present with acute renal colic mimicking calculus, pyelonephritis, hydronephrosis, renal failure and rapidly progressing to sepsis and death. Apart from laboratory tests USG has been the most commonly preferred imaging modality for diagnosis and in CT in select cases if USG inconclusive.

A retrospective study between 2011-2013 of all cases diagnosed as RPN was done at 3 centers where the author visits. 41 cases studied revealed diabetes in all except one who had drug induced RPN. 40 patients had life threatening UTI and sepsis requiring initial icu resuscitation, broad spectrum antibiotics. 36 patients underwent urological intervention in the form of ureteroscopy and double J stenting. All patients who underwent intervention recovered over a short span of time. 5 patients had another episode of RPN and obstruction on the contralateral renal unit after 8-12 week period.

Conclusion:

RPN in diabetics is a potentially a lethal condition, early recognition and prompt drainage improves prognosis, regular screening and good glycemic control is essential.

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Minimally Invasive Technique in the management of Large Benign Ovarian Cyst

Shasindran R. [9], Kunasegaran K.[10]

Background: Benign ovarian masses occur in 30% of menstruating women. The standard management is conservative treatment. In case of large benign ovarian masses, a surgical approach is indicated. Current standard treatment for large benign ovarian masses is midline laparotomy as it has a shorter operating time, lesser spillage during manipulation and can be operated by trainee gynecologist. However this surgical technique poses complication morbidities such as huge scars and post-operative pain. Today, the surgical approach has become more conservative and less invasive, hence laparoscopic approach in presence of benign cysts has become a gold standard.

Method: A prospective study with 7 cases applying laparoscopic approach with direct veress needle aspiration of ovarian cysts was conducted. The criteria included a diameter more or equal to 20 cm and radiologic and laboratory features suggestive of benign disease. Risk of malignancy score done for all cases were less than 55. All operations were performed by a senior experienced laparoscopic gynecologist. Patients' demographics, clinical features, radiological finding (ultrasound and CT scan), CA-125 values, surgical procedures, operative and post-operative complications, operating time, estimated amount of blood loss (EBL), duration of hospital stay and histopathological finding was recorded.

Results: Seven patients underwent laparoscopic surgery with veress needle aspiration. The mean (range) age and body mass index were 21.8 (17-30 years) and 30 (21-42), respectively. Laparoscopic surgery was successful in all patients. There were no operative or post-operative complications. The mean (range) operative time, EBL and hospital stay were 75min (45-90 min), 125ml (50-3000 mL) and 1day (0-2 days) respectively. Five patients (71%) were discharged home 24hours after the surgery. The surgical procedures applied were transcutaneous veress needle drainage, cystectomy and delivered via endobag. Pathologic findings included dermoid cyst (n=4), serous cystadenoma (n=2), mucinous cystadenoma (n=1).

Conclusion: Our pilot study suggests that this novel technique is suitable for patients with large benign ovarian cyst with similar clinical outcomes, better cosmesis and reduced

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[10] University Malaya

morbidity & mortality rates. However, larger series of randomized control trials are required to further strengthen its use.

Discussion: The use of laparoscopy management in benign ovarian cysts is prevailing. However, it poses difficult task when the cysts are large. In a randomized prospective study [1] of laparoscopy vs laparotomy in the management of benign ovarian masses revealed there were no differences in demographic characteristics between the two groups except its favored laparoscopy for smaller scar, reduced post-operative pain and shorter hospital stay. Ovarian cystectomy performed by laparoscopy is associated with a higher incidence of intra-abdominal spillage than laparotomy, but this not associated with any increase morbidity [2]. Our technique helps to reduce spillage operatively as the surgical approach is done under direct visualization. The author prefers the left upper quadrant insertion (Palmer's Point) for his patient using open (Hasson) technique. This helps prevent the rupture of the cysts with spillage of its contents. A literature search revealed that certain authors prefer cyst size reduction prior to laparoscopy and it may be obtained using different techniques such as ultrasound-guided aspiration [3] or with the use of the Bonanno catheter. Our technique reduces the need for experienced radiologist during the operative procedure and result show similar outcome. The most important aspect in performing this technique is patient selection. The authors believe in patient selection. Consideration should be placed on general health, morphology of the cyst, CA125 biochemical marker and imaging to confirm benign features. As this approach is relatively new, further trails and studies are needed to improve knowledge and provide improved advance operative care.

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MASH Journal 2014; 1(1): 10

Challenges Faced By Public Health Supervisor II: Experiences From Rural Myanmar

Soe Moe[11] , Soe Naung[12] , Daw Khin Saw Naing[13]

Introduction and Background
Myanmar has been implementing primary health care approach to ensure comprehensive health care for its people. Basic Health Staff is the key health care personnel in rural area. Among different category of basic health staff, Public Health Supervisor Grade II (PHSII) is taking care of disease control activities and environmental sanitation while midwives are taking care of maternal and child health care. Health Assistance (HA), as the in-charge of Rural Health Centre, is taking the supervisory role of both midwives and PHS II. Training courses for PHS II are conducted in collaboration with the University of Community Health and State Health Department.

Objective of this study is to explore the challenges met by PHSII at their work site in two randomly selected area.

Methods. It is a Qualitative research, done in Shan State and Magway Division which were randomly selected out of 14 States and Divisions in Myanmar. Focus Group Discussions (FGD) on PHS II were done to explore their work experiences. FGD on HA were done to explore their impression on the performance of PHSII.

Results. Although documented job description of midwives and PHSII is very clear, role conflict of them was seen in practice. Some HA did not realize the job description for PHSII working under their supervision. The PHS II had to perform tasks beyond their job description whenever the situation demanded. Reporting system made the roles of PHSII unobservable and PHSII felt that their works were not appreciated. PHSII gets less recognition as health personnel by the community compare to midwives.

Conclusions. This study gives insight into the challenges faced by PHSII and factors link to their difficulties at work. The findings were valuable for health sector reform and curriculum revision for PHSII training.

Key words: Public Health Supervisor, PHS II, Challenges, Rural, Myanmar

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Sociodemographic Characteristics of Generalised Anxiety Disorder among Malaysian

Assoc Prof Dr. Suthahar Ariaratnam[14]

Introduction
Generalised Anxiety Disorder (GAD) is an anxiety disorder characterized by chronic anxiety, excessive and unrealistic worry about everyday issues. The aim of this study was to investigate the sociodemographic characteristics of GAD in Malaysia.

Methods
This was a cross sectional study conducted as part of the National Health and Morbidity Survey (NHMS) of Malaysia for the year 2011. Those subjects aged 16 years and older were extracted from this data. GAD status was determined using Mini International Neuropsychiatric Interview Version 5.0.0 (MINI).

Results
The prevalence of GAD was 1.7%. GAD was higher in females (2.2%) and highest among the age group of 16-19 years (2.3%), Indian race (4.5%), single individuals (2.3%), those having a tertiary education (2.1%), private sector employees (1.8%) and Malaysian (1.8%) nationals respectively.

Using logistic regression, age groups of 16-19 and 20-29 years were more likely to have GAD compared to those more than 60 years of age. Chinese subjects were less likely to have GAD compared to Malay subjects and Indians subjects were more likely to have GAD compared to Malay subjects. Single subjects were more likely to have GAD compared to married subjects while widow/widower/divorcee individuals were more likely to have GAD compared to married subjects. Those who were in the private sector, being self employed, being home maker/unpaid worker and retirees were more likely to have GAD compared to government/semi government subjects.In the multivariate analysis gender, ethnicity and occupation were significantly associated with GAD.

Conclusion
Screening for GAD among high risk individual especially at the primary care level is greatly recommended.

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Universiti of Technologi MARA (UiTM)

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Art Psychotherapy In Improving Patient's Outcome

Ms Reena Clare[15]

Art psychotherapy is an effective, holistic method in improving patients' outcomes especially in clients with mild to severe mental illness and those facing emotional challenges in life.

This presentation, aimed at introducing art psychotherapy to the mental health fraternity, gives a brief description of what art psychotherapy is, how it works, its benefits and how it can achieve positive outcomes for the patients while addressing the ultimate goals of health service/s.

Art psychotherapy's unique triangular relationship between client, therapist and artwork will be examined. Considerations for the various client groups that may find art therapy a beneficial intervention and how this can be set up within an institution will be explored.

Finally a review of evidence of art therapy being successfully integrated into a client's care plan producing positive results will be showcased through a series of client artworks. This will give an overview of what art psychotherapy is, it's value and it's potential In improving patients outcome.

[15] Art Psychotherapist, Art Therapy Circle

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Systemic diseases, Oral Mucosal Lesions and the Dental Practitioner

Dr M.Thomas Abraham[16]

Many of the oral lesions are closely associated with systemic diseases. Recognizing these oral mucosal lesion can help in making an early and accurate diagnosis of some of the systemic diseases. Some of these systemic diseases which we see in our clinical practice may present itself as diseases involving oral & perioral tissues prior to the full blown clinical systemic presentation.

Through this presentation an attempt is made to highlight some of the important conditions, that we come across in our day to day practice, Important because of the frequency of their appearance . An attempt is also made by offering practical guidelines to diagnosis, and management of these conditions for the practitioner.

An early diagnosis of these lesion help in treating these conditions successfully or making an appropriate referral which would alleviate the patients suffering or anxiety.

[16] Consultant Oral & Maxillofacial Surgeon & Head of Department
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Leadership and Management in Clinical Education

Sabaratnam Arulkumaran[17]

Clinical leadership and management is the ability to motivate and direct those around us for them to achieve the best outcome for the patient by teaching, enabling them to learn; training them to be competent in the needed technical and communication skills and helping them to acquire the attitude and behavioral skills to provide safe and high quality clinical care. They should also develop an inquiring mind by research and audit. Research today is clinical practice tomorrow and audit helps to measure the quality of care we provide. In the current climate they should learn management and financial skills to deliver cost effective health care. Thus clinical education encompasses a multitude of skills. The General Medical Council defines the duties of a professional under 'general' and 'specific' characteristics. The described general characteristics are; care of one's patient must be the first concern; every patient should be treated politely and considerately; patients' dignity and privacy should be respected; patients views should be listened to and respected; information should be given to patients in a way they can understand and the rights of patients should be respected and they should be fully involved in decisions about their care (The 'Picker principle' – there is no decision about me without me'). The specific characteristics are; One should maintain their professional knowledge and skills up to date; one should recognise the limits of one's professional competence; he/she should be honest and trustworthy; must respect and protect confidential information; one should make sure that their personal beliefs do not prejudice the patient's care; one should avoid abusing their position as a professional; they should work with colleagues in ways that best serve patient's interests; professionals should act quickly to protect patients from risk if one believes that you or a colleague may not be fit to practise.

The curriculum is developed based on these principles and the standards of competence stated above. The format and design of the overall assessment system and its methods are made appropriate to what is being tested and are grouped into: Clinical skills; Knowledge and decision-making; Interpersonal (communication) skills; and Competence in particular technical areas. Generally this is achieved by theoretical examinations and work place based assessment tools. The commonly available tools fall into four main groups; Assessment of technical skills – OSATS; Evaluation of a clinical encounter – Mini CEX; Case based discussion – CBD; Peer rating tools/multi source feedback – Team Observation (TO) 1 & TO2 – also called 360*appraisal. It is a challenge for the leadership managers in clinical education to achieve all these. They face many hurdles; what is the baseline? Was training high quality pre European working time directive? What objective measures do we have?
New curricula have generally shortened training time and they focus more on specialty skills rather than acute care skills. Acquiring explicit competencies, require supervision and

[17] Professor & Head of Obstetrics and Gynaecology, St George's University of London

assessment. Risk of reduction in daytime shifts is increased number of night-time shifts. Poorly planned shifts risk for patients and staff; it reduces trainer/trainee contact time. We need increased time for consultant supervision, assessments, completion of logbooks etc.

To face these challenges the management style should distinguish the fine line between 'Decisive' but not 'Bossy'; 'Visible' but not 'Controlling'. Effective leader should be able to communicate tasks & responsibilities; balance legal responsibility/develop situational leadership; involve appropriate resources and communicate expected 'norms' and model appropriate behavior (NASA Tech report 1995). They should be able to effectively manage resources and organize effective leadership - team-working communication & decision-making skills to achieve the goals. Appropriate task management starts with determining the goals, deciding on what resources are required, providing the needed information, determining the personnel and equipment needed to carry out the task and instituting an evaluation mechanism. These are not constants and hence situational leadership will help one to be aware of the progress and the ability to balance the needs of: the particular task, the team's ability as a whole to deliver and the capability of the Individual members of the team to perform. Situational analysis consists of continuous monitoring of the environment and detecting any changes needed to bring about the results to achieve good training. Effective leaders must also have a high emotional quotient i.e. know their own emotions and manage them to motivate themselves but also recognize & understand others' emotions and manage relationships – i.e. manage others' emotions (Goleman 1998). Leadership and management in clinical education have been in existence for centuries in different formats. But the leadership skill is becoming more of a challenge with modern inventions in medicine and technology, reduced working hours, more informed patient population with internet and higher expectations in health care.

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Medical Humanitarian Action - A Médecins Sans Frontières perspective

Unni Krishnan Karunakara[18]

An estimated 80 to 100 million people are currently in need of humanitarian assistance in places such as Myanmar, the Central African Republic, and Haïti. What is humanitarian action and how is humanitarian medicine being practiced today? What are the principles of action and what are the challenges to the provision of good quality medical care to individuals and communities affected by conflict, disaster, and neglect? The experiences and perspectives of a leading medical humanitarian Doctors Without Borders/Médecins Sans Frontières will provide insights to key health challenges and will illustrate the need for innovation to address challenges.

[18] Assistant Clinical Professor, Columbia University

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Becoming world class: Thinking beyond conventional boundaries

Dr. K. Ramnarayan[19]

Universities which excel are instrumental in enhancing a student's learning experience, enabling him to use his head, hand and heart, thereby equipping him with information, skills and attitude of service. Such varsities think beyond conventional boundaries. Manipal University, for example, endeavours to create an environment that promotes learning, while nurturing professional and personal growth. With committed faculty and modern infrastructure, the university promotes cutting-edge research and meaningful teaching-learning strategies.

It responds to a continual need for professionalism and provides personalized tutoring and student counselling. Higher education is at a point of transition: the number of students entering the system is growing and the profile of students is changing. Students these days are technophiles. For them, websites, Facebook, Twitter and blogs represent the basic life sustaining tools. They use smartphone, read news online, follow blogs and are familiar with multi-tasking.

Students don't feel they should study in one place and they are not afraid of moving to new places or even countries. These are the paradigm shifts in student culture which Indian universities have to address. Technological changes and research have led to revolutionary breakthroughs in the development of knowledge, and necessitate adapting the education provided at the university to these changes at an increasingly faster pace.

Top class universities must also be able to actively work with the private industrial sector, fostering and encouraging partnerships with industry besides encouraging international collaboration. Manipal University has blazed a trail in getting international linkages to its medical and other technical and professional courses.

[19] Vice-Chancellor of Manipal University

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Renal SGLT2 inhibitors – How will it change the landscape of Type 2 Diabetes

Prof Dr Norlaila Mustafa[20]

Since the advent of insulin therapy, diabetes research and development have gone a long way, especially in the past 20 years. Current treatments and their sites of action include:

- GLP-1 analogs: Increase insulin secretion, suppress glucagon secretion, slow gastric emptying
- DPP-4 inhibitors: Increase prandial insulin secretion through increased and prolonged action of incretins
- Biguanide (metformin): Decreases hepatic glucose production and increases glucose uptake
- Thiazolidinediones: Increase insulin sensitivity and glucose uptake, and decrease lipolysis in adipose tissue
- Sulfonylureas: Increase insulin secretion from pancreatic β cells
- Glinides: Increase insulin secretion from pancreatic β cells
- Amylin analogs: Slow gastric emptying and suppress glucagon
- α-glucosidase inhibitors: Delay intestinal carbohydrate breakdown
- Insulin: Decreases hepatic glucose output; increases peripheral glucose uptake; decreases lipolysis
- Bile acid sequestrants: Increase GLP-1 in animal models

Most treatments for type 2 diabetes act through insulin-dependent mechanisms by reducing insulin resistance, increasing insulin secretion, and supplying exogenous insulin. These insulin dependent treatment often fail to maintain HbA1c over time due to progressive β-cell dysfunction and insulin resistance. Renal **Sodium Glucose Co-Transporter (SGLT) 2 i**nhibition uses a novel, insulin-independent mechanism of action that leads to glucose excretion.

SGLT-2s, found exclusively in the proximal tubule of the kidney, couple glucose with sodium and actively transport glucose across the apical cell membrane, hence facilitating the re-absorption of glucose into the body.

Selective inhibition of SGLT2, through an insulin-independent action, leads to the direct excretion of glucose and its associated calories, along with a mild diuretic effect, potentially resulting in reductions in HbA1c, weight, and blood pressure.

[20] Consultant Endocrinologist
Hospital University Kebangsaan Malaysia

With the increasing prevalence of diabetes and need for a better glycemic control, Renal SGLT2 inhibition has the potential to improve the management of type 2 diabetes.

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Crusade Against Multiple Drug Resistance Tuberculosis

Dato' Dr Abdul Razak Bin Abdul Muttalif[21]

Multi-drug resistant tuberculosis (MDRTB) is defined as, resistance to the two most powerful TB drugs, isoniazid and rifampicin. It is disastrous for the patient, community and the National TB Control Program. According to the WHO Global TB report 2013, there are about 600,000 MDRTB cases globally and a quarter is found in the Western Pacific Region, where Malaysia is part of it. MDRTB is seen more in the retreated cases then in new, about five times more common. Malaysia is fortunate to have only 124 cases in 2013 (0.7%). About half the cases are from refugees and foreign born.

Treating MDRTB is long (2 years), complicated, expensive and the drugs are lethal to the patients. It is 200 to 400 times more expensive then the drug susceptible TB. In patients with HIV, the outcome is catastrophic, with 80-90% case fatality and less than 50% overall treatment success rate.

The crusade starts from the difficulty in the early diagnosis to treatment. With the current system, in many countries, there can be a delay in diagnosis up to 2 months. This is with the use of solid culture methods. The use of liquid culture halved the time to about four weeks. With the development of molecular technology, the diagnosis can be as fast as two hours. The introduction of GeneXpert and Line Probe Assay, aided faster diagnosis and earlier initiation of treatment is possible.

MDRTB is purely a manmade problem. This can be prevented by proper treatment monitoring by DOT and education patients about compliance. It is not only a problem of the NTP but also all health providers in our country.

[21] Senior Consultant Respiratory Physician, Director of Institute Respiratory Medicine

MASH Journal 2014; 1(1): 21

Pitfalls in Trauma Care

Dr Anthony P Joseph[22]

Victims of trauma often present challenges to the team involved in the initial assessment and resuscitation, the tertiary survey and ongoing in-hospital management once intensive care and operative procedures are completed.

This presentation will utilize real scenarios where errors in both clinical assessment and resuscitation have occurred and suggest some strategies by which the risk of error can be reduced. Many situations where errors occur often demonstrate a failure in communication, synthesis of information or the ability to intervene with appropriate interventions or procedures.

Often there is a lack of adherence to basic Advanced Trauma Life Support principles and, when this occurs, there is a critical window of time to intervene with specific procedures or clinical decisions before the results of the error become irreversible. I will also review some of the literature on error in clinical practice and suggest some specific practices to avoid or minimize the risk of making mistakes in the clinical practice of trauma care

[22] Associate Professor, Discipline of Emergency Medicine, Sydney Medical School, University of Sydney

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The Internet As A Point Of Care Clinical Tool

Dr Sally McCarthy[23]

Emergency clinicians are required to assess, diagnose, treat and discharge undifferentiated patients within defined time based access target performance. Evidence Based Medicine dictates that clinicians implement the most current and up-to-date evidence into clinical care to ensure high quality, safe patient care is delivered at the right place and at the right time. Delivering this care requires credible and accessible resources to be readily available to clinicians on the shop floor.

The internet has allowed the formation of online communities of interest, with rapid dissemination of up to the minute clinical knowledge, research findings and practical tips and tools, when compared to modes of knowledge translation by traditional educational and professional bodies. Despite leadership and participation by subject matter experts in the on-line milieu, organically developed rapidly responsive on-line clinical material often lacks the robust credibility of traditional peer review and organisational imprimatur.

A middle ground, whereby the need for responsiveness and rapidity of development of on-line clinical resources is balanced against the need for peer review and "official" sanction of such resources is required, and this presentation will describe such a process and its outcomes.

[23] Medical Director NSW ACI Emergency Care Institute; Senior specialist, Emergency Medicine, The Prince of Wales Hospital Sydney Australia

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Obesity and Bariatric Surgery

Andrea Ooi Se En [24]

Obesity is a complex disease with serious social and psychological aspect that virtually affects all age and socioeconomic groups in both developed and developing countries. Data from a wide variety of international sources, the Global Burden of Disease Study 2013 finds that from 1980 through 2013, the worldwide prevalence of overweight and obesity rose by 27.5% for adults and by 47.1% for children. There was an absolute increase from 857 million overweight and obese people in 1980 to 2.1 billion in 2013.

There are many inter-connected causes in the raise of today's most blatantly visible, yet most neglected public health problems. However the basic issue is that the energy intake exceeds that of energy expenditure

Bariatric Surgery is currently the only treatment available for sustained weight loss in the morbid obese. And is now the most common gastrointestinal procedure performed for the treatment of morbid obesity and type 2 diabetes mellitus are among the most commonly performed gastrointestinal procedures nowsaday

There are 3 major types of bariatric procedure: 1) restrictive procedure; 2) malabsorptive procedure; 3)the combination of the restrictive and malabsorptive procedures.
Surgical machinism of weight loss; by decreasing the amount of food intake as well as frequency of meal, or by decreased the amount of the nutrient being absorbed. Thus reduce the calories input.

This procedure not only result in long term sustainable weight loss; it helps to reduce the risk of developing obesity-related disease, causes remission of certain chronic disease like T2DM, hypertension, dyslipidemia, sleep apnoea syndrome, fatty liver and it also improved one's quality of life.

In a review of 16,155 Medicare patients who underwent bariatric surgery (81% Rouxen-Y gastric bypass), Flum et al found that older age, male sex, and lower surgeon volume were associated with a higher risk of early death. Overall, the 30-day all-cause mortality rate was 2.0%, and the 90-day rate was 2.8%.

Conclusion
Bariatric surgery is a safe and feasible treatment for morbid obesity.

[24] Consultant Bariatric and Metabolic Surgeon
Nilai Medical Centre, Nilai, Negeri Sembilan

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Coronary Artery Bypass Surgery- State of the Art

Dr.A.G.Jayakrishnan[25]

Coronary artery bypass surgery (CABG) is one the most commonly performed surgical procedures in the world , second only to knee replacement. In the US alone 500000 CABG's are performed annually. CABG gives immediate and long lasting relief of angina, prevents myocardial infarction and prolongs life and has consistently been shown to be the best form of therapy for patients with severe coronary artery disease, more so in the in the Asian setting.

Though CABG has been increasingly performed all over the world since 1967 techniques and technologies have evolved over time and this has resulted in better patient outcomes and CABG has proved to be a cost effective treatment for coronary artery disease which is fast becoming an epidemic.

Among the newer techniques is the realisation that arterial grafts are better than the traditional venous grafts , maximising the use of arterial grafts by sequential,"Y" , "T" and multiple sequential grafts etc .and use of newer conduits like radial artery and gastro epiploic artery. Avoidence of the use of heart lung machine (Off pump CABG) has revolutionised CABG and reduced the need of blood transfusions and morbidities associated with a very invasive procedure. The recent syntax trial has proved that CABG is far better than other forms of therapy for selected subsets of patients. CABG in the awake patient as well as stem cell applications in coronary artery disease are all modern developments.

[25] Chief Cardiothoracic Surgeon , Omega Hospital , Mangalore

"CKD Screening : Who What Why When'

Associate Professor Dr Lim Soo Kun[26]

Chronic Kidney Disease (CKD) is defined by kidney damage for more than 3 months, characterized by irreversible progressive deterioration of kidney function. In clinical setting, GFR of 60ml/min/1.73m^2 and less is considered significant. Recent publication in Kidney International revealed that the prevalence of CKD in West Malaysia is around 9.07%. More importantly, most of the individuals were not aware of the diagnosis before the survey. In real life, many patients present with advanced CKD to nephrologists and are unprepared upon initiation of renal replacement therapy.

Therefore, CKD screening is becoming an important public health issue. To be cost effective, patients with high risk of CKD should be the first target. These include those with diabetes mellitus, hypertension, elderly more than 60 years old, obesity, metabolic syndrome, those taking nephrotoxic drugs and those with family history of kidney failure.
The 3 recommended screening tests for CKD are blood pressure, renal profile and urine for microalbuminuria. Serum creatinine is not ideal screening test as it tends to underestimate the incidence of CKD. The GFR would have dropped for more than 50% before the serum creatinine increases above normal range.

Primary care physicians play an important role in creating the public awareness on this common chronic condition and implementing an effective screening program for CKD.

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The Role of the Frontliners in The Screening of Hepatitis C

Dr Ganesananthan Shanmuganathan[27]

Hepatitis C infection is a silent morbid disease, which remains mostly asymptomatic. Chronic infection can lead to liver cirrhosis, which becomes apparent after many years. Patients with cirrhosis can develop ascites, liver failure, hepatoma, bacterial peritonitis, encephalopathy and life-threatening bleeding esophageal or fundal varices and shockingly this could be the first presentation. The aim of the talk is really to focus on primary care role in Hepatitis C detection mainly recognizing high risk patients for early detection and treatment.

The golden window of treatment is early detection which portends "cure". All patients with virological evidence of hepatitis C should and must be evaluated for treatment and offered treatment wherever possible. This talk will walk the evolution of therapy from my years in Kuala Lumpur Hospital and to date.

[27] Consultant Physician and Gastroenterologist, Pantai Hospital Kuala Lumpur, Bangsar, Kuala Lumpur

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Surgical Office Procedure

Dr Dominic Lopez[28]

Office procedures can be safely carried out at suitably equipped level 1 clinics. Thorough and full explanation is essential after establishing an exact diagnosis. Procedures carries should not have complications that will require hospital admission. Care must be particularly exercised when carrying out these procedures in children. Analgesics including opioids should be used with caution and its complications, adverse reactions and dosages fully understood.

The operator should be familiar with procedure and full explanation given to the patient and preferably to an accompanying adult. Local anesthetics are excellent for carrying procedures which may not need opioid analgesics. Painful acute conditions benefit most when treated by office procedures. Surgical treatment of conditions such as abscesses including perianal abscess, paraphimosis, pilonidal sinus, thrombosed external piles, fissure in ano will be described in this presentation.

[28] Consultant General Surgeon , Manipal Hospital Malaysia

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Outpatient ENT Procedures in General Practice

Dr Muthu Kumar a/l Murugesan[29]

Probably not a day goes by in general practice when general practitioners (GPs) do not have to look in an ear, up a nose or into a throat. From infection to foreign body, the ability to competently examine these areas and treat any known causes is essential to daily practice.

This seminar is designed to enable general practitioners to identify common ENT problems as well as to treat appropriately. Simple out patient procedures such as removal of Foreign Bodies, Management of Epistaxis and Identifying various Ear abnormalities will be discussed.

We intend to provide a "Hand On" approach to the procedure that include Otoendoscopy Evaluation and Images, Nasal packing for Epistaxis and Out Patient Neuro Otological evaluation for patients with Dizziness.

[29] Consultant ENT, Head & Neck Surgeon, Manipal Hospital Malaysia

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The Pap Smear

Dr Baskaran Arunasalam[30]

There are many procedures in Obstetrics and Gynaecology which can be performed by the General Practitioner. From Obstetric Ultrasonography to the insertion of an intrauterine contraceptive device, many of these procedures can be easily performed with well formulated and adequate training. Perhaps the commonest procedure which the General Practitioner needs to be familiar with is how to do a Pap Smear. In many countries the General Practitioner takes the lead role in the screening program for the prevention of cervical cancer and to learn do a Pap Sme

[30] Consultant Obstetrician & Gynaecologist, Manipal Hospitals Malaysia

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Challenges in Pediatric Oral Health

Dr Eswara Uma[31]

Good oral health plays an important role in well-being of an individual. The importance of oral health cannot be over-emphasized, especially in growing children. Children with poor oral health are deficient in their nutrition which has a direct effect on their growth and immunity. In some children, poor oral health starts in infancy and continues through their childhood into adulthood. It is advocated that dental care for children should begin in infancy. However, often this is not done owing to several reasons.

The challenge, while attending to oral health needs of the children, lies in not only prevention but also in providing treatment. This is because of the cooperative ability of the child as well as the interest and motivation of the primary care giver towards, oral health when the child has deciduous dentition.

As pedodontists we take to heart the impact we can make in childrens' general well-being. We need to treat the children and educate their families by providing medically necessary care and also in influencing positive oral health behaviour. We have to do everything we can to help in the overall health, well-being, and quality of life of the child and that is our greatest challenge.

[31] Associate Professor & Head of Department Pedodontics, Melaka Manipal Medical College,

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Interesting Radiographic Findings

Dr.Preethy Mary Donald[32]

Radiographs are an important part of dental diagnosis and successful treatment planning. It is useful for detecting carious lesions, assessment of periodontal disease, various congenital, developmental or acquired dental anomalies, cysts, benign and malignant tumors, manifestations of systemic diseases in jaw bones, soft tissue calcifications, diagnostic imaging of temporomandibular joint and certainly inflammatory lesions of jaw which are by far the most common pathologic condition of the jaws.

However, one should keep in mind, that radiographs alone cannot provide an accurate final diagnosis. It has to be supplemented with a good and thorough clinical examination to analyse and correlate both the findings. This presentation portrays few selected cases with incidental radiographic findings and also includes interpretation of various other radiopaque and radiolucent structures from intraoral and extraoral radiographs taken from our institutional database.

[32] Assistant Professor, Dept of Oral Medicine and Radiology

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Peri-Implant Esthetics

Dr. Vijendra P. Singh. [33]

With the growing use of implant-supported oral rehabilitation in the partially edentulous patient, emphasis has changed towards achieving predictable esthetic success. The common esthetic factor in the anterior maxilla, single tooth implant-supported restorations is the soft-tissue profile, which ideally should be identical to that of the contralateral natural healthy tooth. The establishment of a peri-implant soft tissue contour with intact papillae and gingival margins is a major esthetic concern, particularly for patients who display the soft tissue during function, such as smiling or speaking. Various factors such as crestal bone height, interproximal distance, tooth form and shape, gingival thickness and gingival biotype affects the interimplant papilla integrity. Peri-implant plastic surgery has been adapted to improve the soft tissue and hard tissue profiles, during and after implant placement.

Use of an implant design that aids in the preservation of crestal bone, in theory, will support soft tissue that may impact the esthetic outcome. Aesthetic implant placement is driven by both a restorative and biological philosophy. 3D placement of dental implant should be adopted to allow maintenance of both hard and soft tissue architecture. Greater bone volume can also increase blood supply for the health and maintenance of soft tissues.
Clinicians from different disciplines have described various treatment plans and techniques to restore the deficient papilla, but none of them seem to be sufficient to regain the lost interproximal tissue completely and predictably. Because no long-term studies have been conducted, no particular technique is recommended over another. Various surgical techiniques to improve peri-implant soft tissue profile and recreating the interproxomal papilla has been attempted such as papilla preservation flap design, flapless implant placement technique, titanium papillary insert, U shaped flap technique, and alveolar ridge preservation with varying rate of success along with the non-surgical techniques includes the orthodontic correction and restorative repositioning.

Conclusion:
The implantological rehabilitation of the esthetic zone is one of the most demanding and complex and unpredictable treatments due to the necessity to obtain an optimum esthetic result.

Any compromised esthetic results with implant-supported restorations are considered failures. Therefore, the esthetic and functional success of a single-tooth implant restoration

[33] Assistant Professor, Department of Periodontics, Faculty of Dentistry
Melaka Manipal Medical College, Melaka, Malaysia.

in the anterior zone requires meticulous clinical evaluation and planning. The long-term prognosis of the function and the esthetics of dental implants can be improved by adhering to proper techniques for alveolar ridge and soft tissue augmentation, and by ensuring the most appropriate mode of implant placement in individual patients. A multidisciplinary approach should be followed involving the restorative dentist and surgeon, including state-of-the-art quality technical work.

Implementing all these techniques into clinical practice may alleviate the challenge which lays upon the dental practitioners in dealing with inter-dental/implant papilla appearance. Though, osseointegration and restoration of function and soft tissue esthetics dictate implant success, the patient's satisfaction is a key element of the success of implant therapy.

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Orthodontics- When And Why

Prof. Dr. Prithiviraj Jeyaraman[34]

It is logical to intercept a malocclusion as early as possible and to reduce or, in rare instances, avoid multibanded mechanotherapy at the sensitive teenage period. Why allow an unfavorable dental, skeletal, or soft tissue relationship to exist for a number of years if it can be corrected, or practically corrected, early, with a minimum of appliance treatment time?

Before attempting the treatment of an orthodontic patient using guidance of occlusion, the practitioner must be prepared to meet the challenge of diagnosis. Without question, the secret of success in orthodontic treatment is a thorough understanding of diagnosis.

Early consideration of the corrective measures necessary to remedy any type of malocclusion should be the prime concern of moderate orthodontics. Whatever method is chosen, treatment time should be at a minimum.

This lecture emphasize mainly on merits of early intervention, discusses guidance of occlusion with a special emphasis on diagnosis.

[34] Head, Department of Orthodontics, Faculty of Dental
Melaka Manipal Medical College

What's New In Interventional Cardiology

Dato' Dr Devan Pillay[35]

Interventional Cardiology has evolved faster than any other type of treatment in the field of cardiovascular disease. In the early 1990, primary success rates for the treatment of coronary lesions stood at 80-85% with restenosis rates of 30-40% at 6 months follow-up. Current primary success rates have risen to over 95% with restenosis rates of under 10%, even for many types of lesions classically considered complex. Currently, the main limitations in interventional cardiology remain coronary segments that cannot be adequately accessed due to chronic total occlusions or severe proximal tortuosity or calcification. Rapid improvements have led to broader clinical indications for percutaneous revascularsation procedures.

Studies have begun in which new drugs are being investigated for use in drug coated stents. Bioabsorbable stents and drug coated balloons are already available for clinical use. The advances in myocardial regeneration using percuteneously injected stem cell is another great chapter recently opened in the field of interventional cardiology.

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Coronary Artery Disease in the South Asian Population-our Experience in New York

Kalpesh S. Amin[36]

[36] Chief of Cardiology North Shore Forest Hills Hospital

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Modern trends in the treatment of Infra-renal abdominal aortic aneurysms.

Riza Ibrahim[37]

Abdominal aortic aneurysms are increasingly being treated by endovascular aneurysm repair (EVAR). Since the first EVARs performed by Parodi and Voldos, we have been treading a steep and restless path of evolution. During the last 2 decades, we have come from cumbersome homemade devices to off-the-shelf, user friendly designs featuring countless technological advances.

Despite all the experience acquired so far long term results are still unclear. The seminal EVAR trials showed encouraging results but the endografts used in those trials are many generations old and there was a significant rate of re-interventions due to migration, kinking, limb occlusions and endoleaks. The results are always dependent on a combination of two strongly associated factors. a) Device improvements, b) accumulated experience and centralisation.

Device improvements have significantly decreased the rates of migration, type 1 endoleaks and post implant ruptures and thus secondary re-interventions. In spite of this all bifurcated modular grafts do not address the aneurysm sac as is done in open surgery. The Nellix endovascular sealing system (Endologix Inc) does just that. The Nellix system uses polymer filled endobags to fill the aneurysm sac after placement of dual balloon-epandable endoframes.

Filling the aneurysm sac allows for better fixation and abolishing sac space and thus making migration and type 2 endoleaks a thing of the past. There is limited experience with the device and if the long term results confirm the initial experience the prospect of reduced follow-up and day case procedures would become a reality. I am one of a handful of vascular specialists round the world with experience with this new technology and our initial experience has been very favourable.

As devices become better and indications are expanded, new learning curves are required, which can only be efficient in high volume centres. There is much evidence to support centralisation in vascular surgery. Annual surgeon volume has been associated with a nearly twofold difference in early mortality. In a time of expanding indications and of a wide range of new endovascular devices, it appears logical to promote high volume centres.

[37] Consultant Vascular & Endovascular Surgeon
Chair, Endovascular Services, United Kingdom

Conclusion

Although long term results are limited, EVAR is safe and effectively prevents aneurysm related deaths.

The newer generation of devices have lower profiles, hydrophilic delivery sheaths, user friendly mechanisms, and more compliant structures. In the case of Nellix the issue of what to do with the sac is also resolved.

As devices improve and indications are expanded, operators will face new learning curves, which are more efficiently overcome in high volume settings.

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Atrial Fibrillation: Past, Present and Future

Shailesh Patel MD[38]

Atrial fibrillation has been documented in the earliest writings by man. Until the last decade the mechanism of this rhythm has been a mystery. More publication have been submitted regarding Atrial Fibrillation in the last 10 years than ever before. Management of this rhythm has changed as a result of this new data. New research and procedures continue to dominate cardiac electrophysiology literature. History of Atrial Fibrillation, current and future options for management will be presented.

[38] Cardiology/Electrophysiology, Columbus Cardiovascular Associates, Inc
Columbus, Ohio, USA

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Whats "New" In Treatment Resistant Essential Hypertension: An Overview Of Renal Denervation By Catheter-Based Radiofrequency

Associate Professor Dr. Rajasingam Shanmugam, [39]

Definition of resistant hypertension:

(i) Failure to achieve goal blood pressure (<140/90 mm Hg) using three different drugs with pharmacologically complimentary mechanisms, one of which is an appropriately dosed diuretic(and not necessarily including a mineralocorticoid receptor antagonist)
(ii) Compliance to all three drugs given in maximum tolerated doses
(iii) Exclusion of secondary causes of hypertension
(iv) Appropriate life style measures

Renal sympathetic hyper*a*ctivity mediated by the renal afferent and efferent nerves , plays a crucial role in the maintenance and progression of essential hypertension.

Renal denervation by catheter-based radiofrequency is a novel strategy to treat resistant hypertension and two important clinical trials, Symplicity HTN- 1 and Symplicity HTN- 2 trials have demonstrated a substantial and sustained blood pressure reduction without serious adverse outcomes. Symplicity is with reference to the name of the catheter used in the procedure.

The Symplicity HTN-1 trial was the first- in – man proof of principle cohort non-randomised study,which was initiated by Prof. Dr. Krum at Monash University Australia.There was an initial cohort of 45 patients with a 12 months data and later an expanded cohort of 153 patients with a 24 month follow up. Mean baseline BP(systolic and diastolic) values (0ffice based measurements) were 176/98±17/14 mm Hg.

After renal denervation ,the mean reduction of BP values were −25/−11 (at 6 months; n = 86), and −32/−14 (at 24 months; n = 18). Results were published in the Lancet 2009 and Journal of hypertension, 2011

The Symplicity HTN-2 trial(published in Lancet, 2011) was a multi centre randomised trial in Australia and Europe involving 52 subjects randomised to immediate renal denervation and 54 others as control, and with a 6 month follow up.

Mean values for BP reduction measured by in office automated devices were:−32/−12

[39] Consutant Physician and Cardiologist, Associate Professor in Clinical Medicine
Royal Ccollege of Medicine Perak/UNIKL

(Renal denervation group at 6 months; n = 49).–32/–12 and 1/0 (control group at 6 months; n = 51).
Catheter based renal denervation is approved for use in Australia and Europe but not in the United States.A larger on going US based randomised trial with more stringent crtieria, Simplicity HTN-3 trial will attempt to confirm the safety, effectiveness of the procedure and some issues related to the previous trials.The results are expected to be announced in mid 2014.

As of to day, the 2 simplicity trials have demonstred effectiveness of the procedure with a very good safety profile.Patient selection is of paramount importance with the much anticipated results of the Simplicity 3 trials.

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Treatment For Substance Abuse In The 21st Century: A South African Perspective

Dr Anwar Jeewa [40]

It has become increasingly difficult to assist an individual to maintain long term recovery from substance abuse. Irrespective of which treatment centre the individual has been to, none guarantees a successful recovery. This is frustrating to individuals, their families and also service providers. The reason for this trend is not absolutely clear. Many treatment centres are rigid in use of their programs and depend on aftercare to improve recovery rates.

Service providers are increasingly acknowledging that there is no one "best treatment" option as there are too many variations and complexities in reaching the goal of freedom from dependence and social reintegration. Hence the focus of this presentation, which is based on research to identify strengths and weaknesses of the different models/programs used in different residential treatment centres in South Africa with a view to recommending changes to accommodate such complexities and sustain recovery.

[40] Director and Founder of MINDS ALIVE Treatment Centre
Durban, South Africa

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The Load of Renal Failure: Causes and The magical treatment –Dialysis & Magical Cure –Kidney Transplantation

Dr. Sankaran Sundar [41]

Chronic Kidney disease is common , dangerous but preventable.This is a silent killer. The incidence of Endstage Renal Disease ranges from 100 to 250 case per million population every year and less than 10 % get some treatment in the form of Dialysis or Transplantation in India.

In our center nearly 50% of the cases of ESRD are due to Diabetes Mellietus and India is the Capital of the Diabetic world. The other causes of ESRD are chronic Glomeurlonephritis, Chronic Interstitial Neprhitis, Adult Polycystic Kidney Disease, Calculus Renal disease and other congenital and inherited causes.

The treatment for ESRD is Renal Replacement therapy which is Dialysis (Haemo or Peritoneal) and Renal Transplantation.Haemodialysis and Peritoneal Dialysis DO NOT CURE KIDNEY FAILURE but keep patient ALIVE till Kidney Transplantation is done. The only cure for ESRD is RENAL TRANSPLANTATION.

The Cost of treating ESRD is enormous and the key is prevention by good Diabetic Control and Control of BP and Life style changes like avoiding smoking, Exercise, and Avoiding Pain killers(NSAIDS) which kill the kidneys.

Early detection can help in prevention of this silent killer.

[41] Director & Chief Nephrologist
KANTI ,Columbia Asia Hospitals

Growing Concerns in the Hi and Low of Blood Glucose Levels: What is the Role of DPP-4 inhibitor?

Dr Foo Siew Hui[42]

Emerging as a global epidemic of the 21st century, type 2 diabetes mellitus has become a major health problem. The burden is especially more so in the Asia Pacific region with the rapid urbanization in the developing countries. Based on the results of the major landmark outcome trials in diabetes, i.e. UKPDS, ADVANCE and ACCORD, the glycemic management in this day and age can no longer be a 'one-size fits all' approach but more about striking the balance between achieving good glycemic control and avoidance of hypoglycemia based on an individualised approach.

The conventional anti-diabetic therapies have been limited by various adverse effects including hypoglycemia, weight gain, gastro-intestinal intolerance, fluid retention etc. The discovery of incretin axis as one of the pathophysiological mechanism involved in type 2 diabetes has led to the development of incretin-based therapy. DPP-4 Inhibitor, by inhibiting the DPP-4 enzyme responsible for the degradation of incretin hormones, i.e. GLP-1 and GIP has since been established as an oral anti-diabetic agent with vast potential due to its ability to optimise glycemic control in a glucose-dependent manner associated with a favourable side effects profile. Its efficacy and safety has been proven across patients from all stages of type 2 diabetes including patients with chronic kidney disease and insulin-treated patients.

[42] Consultant Endocrinologist

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Hand Surgery: Minimal Invasive & Reconstructive Procedures

Dr Ravindran A/L Thuraisingham[43]

Minimal invasive surgical procedures which used to be a trend in the past is currently considered to be a gold standard of treatment in many disciplines. In hand surgery, wrist arthroscopy has made it possible to diagnose and treat wrist ligament injuries which is often missed even with MRI.

Carpal tunnel syndrome, a common hand problem, is traditionally treated with Open carpal tunnel release when conservative management has failed. This procedure usually relieves the patient's symptoms but can prevent the use of his hand for a few weeks. This procedure can now be done through a minimal invasive technique -Endoscopic Carpal Tunnel Release. In addition to a cosmetically smaller and better scar it allows earlier use of the hand post surgery.

Brachial plexus injury in adults is commonly due to motor vehicle accidents and this can also present at birth (Brachial Plexus Birth Palsy). In the past, treatment of Brachial Plexus injury was said to be a wasted effort as surgical exploration and repair of Brachial Plexus had poor functional outcome.

With advances in surgical technique and better understanding of nerve physiology, improved outcomes can now be achieved. Surgery is indicated in all patients with no recovery within 6 months. In adults, neurotization (nerve transfer) procedures have shown to produce the best results. In Birth palsy, reconstruction of the brachial plexus with nerve grafts is performed if nerve roots are available (not avulsed). Early microsurgical repair plays the most important role as it gives the patient the unique opportunity to recover at his best…. especially total paralysis. Secondary surgery is an important contribution for improving the functional result after primary surgery and also for patients who presented late where nerve transfer could not be done.

We now have the ability to obtain something in someone who started with nothing.

[43] Consultant Hand & Microsurgeon, Sunway Medical Centre

Sex is at its Best

Prof Christopher Ho Chee Kong[44]

With the prevalence of up to 1 in 3 men (31%) in Asia-Pacific having some form of premature ejaculation (PE), PE is the most common male sexual dysfunction resulting in reduced sexual satisfaction and quality of life for men and their partners. Despite the negative impact of PE to the couples, most men remain to suffer in silence. HCPs are ideally positioned to assist men with PE, first to reduce barriers to their treatment seeking behavior, and then to provide an effective treatment program, with the ultimate goal of improving their quality of life and that of their partners. PE can be diagnosed via The Premature Ejaculation Diagnostic Tool (PEDT), a short, psychometrically validated measure that can be easily administered to facilitate the diagnosis of premature ejaculation. Lack of control over ejaculation is the key element in perception of PE. Treatment strategies should be based on what HCP, the men and their partners feel comfortable with. Dapoxetine is the first and only drug specifically developed and approved for the treatment of PE. It is effective from the first dose and offers the convenience of on-demand dosing, as it is rapidly absorbed and does not accumulate with multiple doses.

Symposium: Best For Women
Topic: Ensuring Sex is at its Best- Resolving PE
Speaker: Dr Koh Eng Thye, Consultant Urologist.

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[44] Consultant Urologist
Universiti Kebangsaan Malaysia Medical Centre

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Diagnosing and Managing Drips and Drops

Dr Roy Ng Kwok Weng[45]

Female urinary incontinence comprises of overactive bladder, stress urinary, overflow and true incontinence. In this lecture I shall be concentrating on the first two commonest types.

Definitions

Urinary incontinence as defined by the International Continence Society (ICS) is the complaint of any involuntary leakage of urine. The ICS defined overactive bladder (OAB) as urgency, with or without urge incontinence, usually with frequency and nocturia, in the absence of pathologic or metabolic conditions that might explain these symptoms. This definition focuses on the symptoms of OAB rather than on urodynamic parameters.

Aetiology of OAB symptoms

The management of OAB depends on the aetiology which can be classified as:

1. Physiological (increased fluids [esp., caffeine, alcohol] diet [fruits , vegetables], climate/weather, environment [air conditioning], pregnancy)
2. Psychological (anxiety, stress, habit/social)
3. Psychiatric (obsessive compulsive neurosis)
4. Pharmacological (diuretics)
5. Endocrinological (diabetes mellitus / insipidus)
6. Pathological
    A. Reversible
        i. Urinary tract infection
        ii. Urogenital Syndrome (Menopause)
    B. Irreversible
        i. Bladder calculus/calculi / Foreign body
        ii. Bladder carcinoma
        iii. Pelvic irradiation / Radiation cystitis
        iv. Chronic / Interstitial cystitis
        v. Untreated cardiac failure [can cause nocturia]
        vi. Pelvic mass: Uterine fibroid/s / Ovarian tumour cyst/s / Ovarian hyperstimulation syndrome (OHSS)
        vii. Pelvic organ prolapse (POP)

[45] Senior Consultant & Head, Urogynaecology & Pelvic Reconstructive Surgery
Department of Obstetrics & Gynaecology National University Hospital Singapore

viii. Stress urinary incontinence (SUI) / Urodynamic stress incontinence (USI)
ix. Detrusor overactivity (DO) [Urodynamic diagnosis]

Investigations

1. Standardised history and physical examination including gynaecological & urogynaecologiocal
2. Intake-Frequency volume incontinence chart (Urinary diary)
3. Urinalysis, microscopy, culture & sensitivity
4. Bladder scan / catheterisation [to check residual urine]
5. Urodynamics [to diagnose DO, USI, mixed DO with USI, voiding dysfunction]
6. Other investigations depending on the aetiology of OAB symptoms (KUB, US kidneys, bladder, IVU)

Management

First line treatment
Lifestyle modification including sensible fluid and dietary intake and regular voiding.

Non-pharmacological measures Pelvic floor muscle contraction
should be carried out when they experience urgency or urge incontinence or rise from lying or sitting (triggers detrusor contractions) and when practicing bladder training.

Bladder training

They are taught to void each hour on the hour. If a patient experiences urgency less than an hour after she last voided, she is advised to contract her pelvic floor muscle, sit if she is standing or walking and taught to increase the voiding interval by 5 to 15 minutes each week until she is satisfied with decreased voiding frequency and increased voided volumes.

Medical treatment .
Antimuscarinic (Anticholinergic) drugs are the mainstay of medical treatment for OAB or DO. They inhibit/abolish detrusor muscle contractions which decreases the frequency of voiding & the number of incontinent episodes. However, they are not bladder specific, also acting on other target organs of the parasympathetic nervous system and causing adverse effects: visual disturbances, dry mouth, palpitations, gastrointestinal reflux, constipation, urinary retention. Some of them also possess either a musculotrophic (smooth muscle relaxant) or calcium channel blocker effect.

Surgical treatment of detrusor overactivity (DO)

If all the above measures fail, urodynamic investigations should be performed to optimize diagnosis and institute appropriate treatment. The surgical treatment for DO include cystodistension, Botulinum A (Botox) injections, neuromodulation - posterior nerve stimulation and implantaion of 3rd sacral nerve root stimulator, partial detrusor myomectomy, clam augmentation cystoplasty and urinary diversion.

Stress urinary incontinence

Definition
The International Continence Society (ICS) defines stress urinary incontinence (SUI) as the complaint of involuntary leakage on effort or exertion, or on coughing or sneezing.

Investigations
Similar to that for OAB with the addition of performing the ICS 1-hour perineal pad test to quantify the severity of SUI. The alternative would be the simpler erect stress test whereby the patient coughs 10 times onto a pre-weighed incontinence sheet with a reasonably full bladder; this can be confirmed by a bladder scan with at least 250 ml.

Treatment
Conservative or Surgical

Conservative
The mainstay of conservative treatment is pelvic floor muscle training, more commonly known as pelvic floor exercises which should be performed for at least 3-4 months with an improvement or cure rate of 50 %. Other modalities of conservartive treatment include vaginal cones, biofeedback and electrical stimulation.
Indications: Very young or old, pregnancy & postpartum, family not complete, mild or occasional SUI, unfitness or unwillingness to undergo surgery, long waiting lists for surgery, mixed stress urinary incontinence with overactive bladder and voiding difficulty.
Advantages: Fairly successful, relatively safe, inexpensive, does not compromise future surgery.

Surgery
The current gold standard surgery for SUI is the mid-urethral tape (MUT). Retropubic MUTs are advisable for the younger, wetter, previous failed patient and those with intrinsic sphincter deficiency (ISD). On the other hand, for patients with mixed incontinence or voiding difficulty/dysfunction, seem to benefit from transobturator MUTs.

Conclusion
OAB is a clinical diagnosis based on the patient's symptoms and exclusion of metabolic and pathologic conditions. Milsom I, et al, reported that 40% of OAB sufferers have never discussed their condition with a physician, hence family physicians should inquire about OAB. Conservative measures and medical treatment should be tried before surgery for both OAB, SUI and mixed incontinence. The gold standard surgical treatment for SUI is the mid-urethral tape.

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"What's New In Early Detection Of Disorders In Pregnancy"

Professor Dr Zaleha Abdullah Mahdy[46]

A screening test aims to detect a disease or condition in the early stages before it causes significant problems, and where treatment or preventive measures can be offered. The potential benefits of a screening test should outweigh any possible risks from the test.

A multitude of strategies and tests are applied in pregnancy in order to detect various disorders that could potentially harm pregnancy. Among the disorders that are routinely screened for are anaemia, blood group incompatibility, certain infectious diseases, and hypertensive disorders. Common conditions that require screening or where screening is possible in high risk patients include genetic disorders, diabetes mellitus, intrauterine growth restriction, and preterm labour.

Advances have been made in the field of genetic disorders, where fetal genetic anomalies can be screened for using less invasive and more reliable methods, e.g. cell-free fetal DNA in maternal blood. The genetic material obtained can also be subjected to more thorough scrutiny using the Fetal DNA Chip, which utilizes microarray based comparative genomic hybridization (array CGH) technology. Research is also under way to develop a method for simultaneous screening for multiple inborn errors of metabolism.

Preeclampsia and intrauterine growth restriction (IUGR) are placental disorders for which various screening methods have been studied and developed. Both primary and secondary preventive measures against preeclampsia have been looked at, and screening modalities range from clinical screening to sonography to serum biomarkers. The Preeclampsia Integrated Estimate of Risk (PIERS) and mini-PIERS utilize statistics and technology to screen preeclamptic women for risk of complications in order to institute secondary preventive measures.

Early detection of pregnancies at high risk of preterm labour, followed by commencement of prophylactic measures, help reduce perinatal mortality and morbidity associated with this condition. Screening includes history, measurement of cervical length, as well as cervicovaginal and serum biomarkers.

[46] Senior Consultant Obstetrician and Gynaecologist
Faculty of Medicine, UKM

The method of screening for diabetes mellitus in pregnancy has evolved over the years yet remains controversial. The HAPO study attempted to achieve outcome based screening but has come under heavy criticism.

From the clinical practice point of view, a simple algorithm for early detection of disorders in pregnancy can be worked out, commencing with an antenatal visit between 11 to 14 weeks gestation. A checklist ensures coverage of the various disorders for which assessment for early detection is available. Nationwide coverage should be aimed for but is currently unavailable in many countries for many of the disorders. Adequate resources must be set aside for the purpose of screening important disorders on a nationwide scale, whilst modifying the screening modalities according to local and current financial constraints.

In conclusion, early detection is possible for various disorders in pregnancy. However, cost is an important factor in the application of many of these screening strategies. Nevertheless, as prevention is always better than cure, efforts should be made to take this imperative step in the right direction.

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The Vulva : Aestheticians Viewpoint .

Dr Saifuddin Sidek[47]

In my lecture I will cover the latest trends in cosmetic gynecology especially involving the vulva . I will also cover briefly the use of lasers in doing a pelvic floor repair . In particular I will cover the growing number of requests of labiaplasty as many patients are unhappy about the appearance of the labia majora with the excess skin . The technique of labiaplasty will be further elaborated . Liposuction and fat transfer to the labia majora will be discussed as there have been requests to plump up that area and make it look more youthful . Whitening of the pubic area is also discussed to treat hyperpigmentation around the pubic area . The last part of my talk is to touch on the use of lasers for gynaecology in particular the erbium laser . This laser is now used for vaginal tightening , vaginal mucosa rejuvenation and also for whitening of the vulval area .

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Mood Disorders – A Malaysian Perspective

Assoc. Prof. Dr. Philip George[48]

Mental disorders, is fast becoming a leading cause of morbidity in the community of both developed and developing nations. In the recent 2011 National Health and Morbidity Survey, 12% of Malaysians aged between 18 and 60 are suffering from some form of mental illness. The World Health Organisation, Harvard University and the World Bank studied the disability that diseases bring and found that Depression is the fourth most disabling disease in the world. It is predicted that in 2020 it will rise to being the second most disabling disease. In a similar study done by Institute of Public Health, Malaysia, the second largest cause for disease burden was from Mental Disorders.

Azhar et. al. in Kelantan showed that the prevalence of Depressive disorders in the community is generally the same as for developed countries and range between 10 to 12% of the general population. These large numbers cause immense suffering not only for patients themselves, but also to their families and communities. Without appropriate treatment they are unable to contribute to the socioeconomic development of our nation. Alarmingly, as well, the World Health Organization estimates that more people die from suicide than from Tuberculosis deaths in the Asia Pacific region and the most common cause for death by suicide is Depression.

Treatment of these common disorders like depression is often inaccessible to the sufferers as Psychiatric units are wrought with stigma and false prejudice. Primary care doctors have an important role to identify, treat and manage a majority of these patients, provided they have the basic knowledge, skills and support. The empowering of communities as well plays a pivotal role in seeking better services to assess and manage Depression in primary care and general practice.

[48] Associate Dean and Consultant Psychiatrist
International Medical University

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An Introduction to Psychotherapy

Assoc Prof. Stephen T. Jambunathan[49]

Psychotherapy is a very broad field. Although there a numerous different forms of psychotherapy, this approach in healing the mind can be generally be categorized into the psychodynamic/analytical and cognitive-behavioural (CBT) therapies. There are however a few types of therapy that do not fall into these two categories such as Hypnosis and Eye-Movement Sensitization and Reprocessing (EMDR).

This brief presentation is designed to explain the general principles of therapy for Mood disorders and the significance of transference and counter transference in the practice of medicine.

[49] Consultant Psychiatrist and Psychotherapist
University of Malaya

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"Decoding The Late-Life Depression, Dementia Link"

Dr.Bharathi Vengadasalam [50]

Late-life depression refers to a major depressive episode occurring in an older adult (usually after the age of 60 or 65 years) It encompasses both the late-onset cases (i.e. onset after the age 60 or 65) and the relapses of an earlier-occurred depression . Late life depression is frequently associated with cognitive changes. These cognitive symptoms, challenge the evaluation and management of depression in older adults. Depression-related cognitive dysfunction include executive dysfunction, reduced attention and concentration, decreased central processing speed, and impaired short-term memory. The older term "pseudo-dementia" implied a reversibility of the cognitive problems once depression remits. However, recent research indicates a far more complex inter-relationship between the two clinical entities of depression and cognitive impairment. Whether cognitive changes in the setting of late-life depression signals a coexisting illness or is simply an effect of the depression is a complex question. Pseudodementia may not be so "pseudo" after all and the term has fallen from use. Even those whose cognitive impairment reverses, 20% per year convert to dementia, on follow up

Depression and dementia mirror each other in a catalogue of symptoms and triggers.
Late-life depression now appears to be harbinger of cognitive decline, an independent risk factor for dementia or a prodromal stage of dementia. Cognitive impairment in late-life depression may be due to cerebrovascular disease which likely interrupts key pathways between frontal white matter and subcortical structures important in mood regulation. The concept of "vascular depression" has been advanced. In terms of clinical profiles, some studies have suggested that symptoms of apathy and loss of interest are associated with conversion of depression to Alzheimer Disease .

Late-life depression appears to increases an individual's risk for acquiring dementia . A meta-analysis in 2013 concluded that those with late-life depression are 1.85 times more likely to develop all-cause dementia; 1.65 times more likely to develop Alzheimer's disease; and 2.52 times more likely to develop vascular dementia

Pathways that link late-life depression to persistent cognitive impairment and dementia include glucocorticoid contributing to hippocampal atrophy and learning/episodic memory impairment and the role of inflammation. A final common pathway proposed is the reserve threshold theory , where depression injures neurons, thus lowering brain–

[50] Senior Lecturer, Faculty of Medicine & Health Sciences , University Putra Malaysia

cognitive reserve such that cognitive impairment is expressed earlier and/or more frequently than it would otherwise.

Understanding the link between depression and dementia, has important implications for the clinician, patient and the family. It is important to determine the temporal relationship between depressive symptoms and cognitive change. If depressive symptoms pre-date the cognitive impairment and cognitive symptoms are mild and temporary, late-life depression is the likely cause of the cognitive impairment . If cognitive changes persist after the depression is successfully treated, an underlying dementia is more likely. Clinicians should exclude other medical conditions such as thyroid disease which can contribute to depressive symptoms and cognitive impairment.

Establishing whether depression is the primary cause of cognitive change or whether a concomitant dementing illness exists is important in the management of the disease. . Both antidepressants and psychotherapy can be effective in treating late-life depression. Subsequent evaluations following treatment should also reassess cognition. In a concomitant dementing illness , choline-esterase inhibitors or memantine may be indicated depending on the type of dementia. In terms of public health impact, early diagnosis and prevention of depression could also potentially prevent or delay cognitive decline in older adults.

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The Varied Faces of Mood Disorders

Dr. Prem Kumar Chandrasekaran[51]

Mood disorders encompass a wide spectrum of conditions ranging from Depressive Ilnesses to Bipolar Disorders. They can occur along a continuum with various degrees of affliction, in terms of symptomatology as well as severity. In recent decades, further attention has been focused on variants of Bipolar Disorders that have long been left neglected in the backwaters of psychiatry. Misdiagnoses with ensuing catastrophic consequences will hopefully be things of the past.

In this session, we will delve into the shared platform of symptoms that are not exclusively limited to only this group of functional disorders but may also exist in some organic conditions. As misdiagnosis is common in Bipolar Disorder, Bipolar Depression should be considered whenever dealing with a suspected Unipolar Depression presenting with atypical features – "different past symptoms make the diagnosis". Hypomania has been said to be "overdetected but underdiagnosed" and Unipolar Mania has characteristic presentations with guarded outcomes.

The finer points in recognizing the subsyndromal symptoms in Bipolar Disorder facilitates accuracy of diagnosis, which will inevitably help reduce subsequent morbidity.

[51] Consultant Neuropsychiatrist

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Mood Disorders - A UK Perspective

Dr Subash Chona Mathews[52]

Mood disorders are medical illnesses that are highly treatable. However many patients do not seek help due to all the misunderstandings that arise with the disorder. The apprehension relating to social stigmas also play a part in many people not seeking the appropriate treatment for the disorder. In the UK, the National Institute for Health and Clinical Excellence provides guidelines for Clinicians with various Medical and Surgical disorders including those relating to Psychiatry. This talk will touch upon the NICE guidelines mainly in the management of Bipolar Disorders, both in Primary and Secondary Care in the UK.

[52] Consultant Psychiatrist,Derbyshire Healthcare NHS Foundation Trust
United Kingdom

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Pharmacological & Physical Treatments for Mood Disorders

Professor Nagesh Brahmavar Pai[53]

The selection of treatment in depression should be filtered by clinical judgment, taking into consideration a number of clinical variables, such as characteristics and severity of depressive episode, co-occurring symptomatology and problems, medical co morbidities, and patient's history with particular reference to treatment of previous episodes, if they occurred. Pharmacotherapy remains the treatment of choice of the acute episode, but it is unlikely to entail solution to complex array of symptoms that are associated with depression.

While depression can be treated in many cases with either medication or an evidence-based psychotherapy, remission rates in controlled trials using currently available treatments rarely exceed 30%, and relapse is the rule rather than the exception. Incomplete remission is an unfortunate and common outcome during an acute treatment of MDD and has been broadly recognised as a suboptimal outcome. Many patients benefit from pharmacologic treatment and, because there is little variation in antidepressant effectiveness, medication choices should be made based on patient characteristics, safety, and anticipated side effects.

Most patients respond favourably to treatment, but many do not have complete symptom relief. Changing medications or augmenting with a second medication is helpful for some partial or non-responders. For many patients, combinations of multiple medications and electroconvulsive therapy (ECT) are required. For those who remain severely depressed despite these aggressive approaches, new strategies are needed. This presentation also describes a new interventional strategy, deep brain stimulation (DBS), directed at this group of patients who are otherwise resistant to treatment.

[53] Senior Clinical Academic ,Psychogeriatric services, Illawarra Shoalhaven Local Health District, Australia

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Deconstructing Nerve Pain

Dr Ozlan Kamil[54]

About 25-30% of low back pain presents with a neuropathic component. It is important to recognize this as the usual approach to treating this type of pain with conventional "pain killers" will not yield satisfactory results. The traditional approach to identifying a disease state and treat each disease state similarly will not give good results. A mechanistic approach to identifying the type of pain is suggested instead.

This lecture will focus on recognizing, assessing and treating neuropathic pain by highlighting a case study example.

[54] Consultant orthopedic and spine surgeon

Diminishing Post-Operative Pain

Dr Muralitharan Perumal[55]

Post operative acute pain is a common phenomenon in all surgical settings. Since the introduction of Pain as 5th Vital Sign officially in Malaysia since 2008, pain management in more effective than in the past. Moreover, there are many more analgesics in the market. The mode of action of these drugs may vary, giving rise the advantage of prescribing a few analgesics, from different class, at low doses for optimal pain relief with minimal side-effects, aka Multimodel Analgesia.

Parenteral parecoxib, a Cox 2 inhibitor, is one drug that stands out for effective management of acute severe post operative pain. It complements very well with opioids. Clinical evidences of the pharmacokinetics and pharmacodynamics augurs well the use of parenteral parecoxib. Besides, the 'precaution to use' attached is as for any NSAIDS. Hence, prescription of parenteral parecoxib is highly recommended.

[55] Consultant Pain Physician and Consultant Anaesthesiologist

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Diode Lasers in Surgical Dentistry and Implantology- a Basic outline

Ajeet Singh [56]

Lasers in Dentistry were developed in the 1960's by a courageous group of inventors and dentists. It was only in the last 15 years or so, that lasers have become more popular and common in clinical dentistry and surgery. There are many types of lasers including Diode, CO2, Erbium lasers etc. . . . Some lasers are used on soft tissue (diode lasers), others on hard tissue, and also some can be used on both hard and soft tissue(er:YAG laser).

This short presentation will cover

1. Basic concepts of laser physics for example include topics such as tip initiation, power settings and how they affect clinical work
2. Address aspects of safety in the clinic for example the importance of the right laser safety goggles
3. Cover procedures that can be done by diode lasers in surgical dentistry and implantology

We can divide the procedures into simple, intermediate and advanced procedures.
Simple- laser crown troughing, treatment of oral lesions etc.
Intermediate- frenectomies, fibroma removals etc.
Advanced -implant recovery, lingual tongue tie release, operculectomies etc.

[56] Oral surgeon and implantologist
Petaling Jaya, Selangor, Malaysia

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The Use Of Electrocautry And Lasers In Periodontology

Professor Dr. Dasan Swaminathan[57]

Lecture:
The use of technological innovations like the use of lasers in Oral Health management has given dental professionals a wider choice of instrumentation to manage oral conditions. This lecture will review case reports which will highlight the indications, contraindications and management of periodontal conditions using lasers and electrocautery .

Workshop:
The workshop on the use of lasers (diode) will be a hand's on exercise on the handling of the diode laser on goat's head. The participants will be given demonstrations on the proper use of lasers to manage lesions in the oral cavity and to experience hands-on the use of lasers in procedures like excision of gingival tissues, gingivectomy / gingivoplasty, crown lengthening, aesthetic procedures on the gingiva like management of hyper pigmentation of the gingiva, removal of gingival tissues in individuals who have a "gummy smile", management of periodontal pocketing etc.

[57] Professor of Periodontology, Department of Restorative Dentistry, Faculty of Dentistry University of Malaya, Kuala Lumpur.

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State of art in radiotherapy

Teresa T. SY Ortin, MD[58]

Radiation therapy is reaching new heights with IGRT. While IMRT can deliver lethal dosages of radiation to tumors while sparing adjacent, critical structures, resulting higher cure rates for patients, less complications. Image guidance (IGRT) has brought in a significant level of confidence for radiation oncologists to implement IMRT with precision.

The objective of radiotherapy is local control --- this requires identification of the target, design of an excellent dose distribution with IMRT, and the ability to reliably deliver that dose to the right spot (Image guidance). This brief lecture will review the different IGRT systems and how they are implemented. It will also discuss the various clinical applications of these new technologies. Clinical cases of Tomotherapy treatments will likewise be shown in this lecture.

[58] Consultant Radiation Oncologist Makati Medical Centre
Makati City

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Multidisciplinary Management of Head & Neck Cancers.

Dr. Chandrashekar Hospet[59]

Multidisciplinary approach in the management of cancers, more so in the H&N cancers has improved the results of local control as well as survival. Various modalities of treatments employed & their optimal sequencing will be discussed.

[59] Consultant Clinical Oncologist, Head of Oncology Division
Nilai Medical Center, Nilai.

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Evolution in the management of Colorectal Cancer

Dr Shamir Chandran [60]

Colorectal cancer is the 4th most common cause of cancer death worldwide. In the last two decades, although the concepts of screening, staging and surgical management of colorectal cancer CRC have evolved, the most significant changes have occurred in the therapeutic management of the disease which has improved oncologic and functional results in patients with this malignancy.

In adjuvant treatment of CRC, newer genomic based diagnostic tests are guiding treatment decisions helping clinicians to better determine which patient would benefit most from chemotherapy. Advances in the treatment of metastatic colorectal cancer have led to an improvement in survival from 12 months with fluorouracil monotherapy to approximately 2 years. This is partly as a result of the addition of irinotecan and oxaliplatin, but is also due to the use of monoclonal antibodies against the epidermal growth factor receptor (EGFR) and antiangiogenic drugs such as bevacizumab. However, there are significant molecular differences between tumours which can affect both prognosis and response to treatment. So the 'one size fits all' approach to the disease is being rapidly discarded in favour of 'personalized medicine' which aims to tailor treatment according to the characteristics of the individual patient and is now a clinical reality as testing for KRAS mutations to guide treatment with the anti-EGFR monoclonal antibodies cetuximab and panitumumab is now part of routine clinical practice. However, not all patients who are KRAS wild type respond to anti-EGFR therapy and a validated biomarker for antiangiogenic therapy is still lacking. Newer targets are being identified along with targeted therapy that are being currently evaluated in this scenario.

In locally advanced rectal cancers, a neoadjuvant approach with concurrent chemo-radiation has emerged as the standard of care, due to its benefits in down staging the tumor along with the increased possibility of sphincter saving surgery, thus preventing the morbidity associated with lifelong colostomy. Total Mesorectal Surgery has become the mainstay of the surgical approach to rectal cancers resulting in lesser local recurrence rates and better results.

Conclusion

Newer improvements in genomic based diagnostic tests may help select patients for adjuvant chemotherapy in Stage II colorectal cancer. The rapid clinical integration of personalized medicine has allowed targeted therapies to be better incorporated into the

[60] Clinical Oncologist, Department of Medical Oncology
The Brunei Cancer Centre, Jerudong, Brunei Darussalam

management strategies for metastatic colorectal cancer thus leading to improved survival rates while reducing morbidity. Despite these developments in the management of the disease, colorectal cancer still remains the 4th most common cause of cancer death worldwide, and better biomarkers and targeted agents need to be developed to reduce the morbidity and mortality associated with this disease.

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Management Of Head & Neck Malignancies – A Surgical Overview

Dr. R. Venugopal[61]

Head & Neck Cancers account for about 5 % of all malignancies. About 650,000 new cases are diagnosed yearly worldwide with about 350,000 deaths per annum. The high mortality rate is usually due delayed diagnosis with many patients presenting with advanced disease. The common causes for these malignancies include smoking , alcohol consumption, betel quid and viruses (HPV, EBV). The majority of these tumours are Squamous Cell Carcinomas as they involve the upper aerodigestive tract.

The management of Head & Neck Malignancies is complex and require a Multidisciplinary Team approach to achieve a satisfactory outcome. With better understanding of the pathophysiology of these tumours, the surgical management have evolved over the past few decades. In spite of radical surgery, better reconstructive techniques have preserved or restored function.

This presentation will briefly describe the malignancies in the various sites involved and their management. The changing strategies in the management of neck metastasis will also be discussed.

Finally a brief account will be made on the current concepts and latest technology available in the fight against these cancers.

[61] Consultant ENT/Head & Neck Surgeon
Mahkota Medical Centre, Melaka, Malaysia

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Title-Role Of Susceptibility Weighted Mri Imaging In Various Neurological Conditions

Dr.Ajit Mahale Professor[62]

Susceptibility Weighted Imaging (SWI) is newer imaging modality in MRI imaging of brain which utilises magnitude and filtered-phase information, both separately and in combination with each other, to create new sources of contrast. The term susceptibility-weighted imaging has been used by various authors to indicate sequences that are sensitive to T2*gradient echo (GRE) techniques ; it has also been referred to as high-resolution (HR) blood oxygen level dependent (BOLD) venography.(1,2) . It exploits the magnetic susceptibility differences of various tissues, such as blood, iron and calcification.

1. Reichenbach JR, Venkatesan R, Schillinger DJ, Kido DK, Haacke EM Small vessels in the human brain: MR venography with deoxyhemoglobin as an intrinsic contrast agent. Radiology. 1997 ; 204: 272-7.
2. Liang L, Korogi Y, Sugahara T, Shigematsu Y, Okuda T, Ikushima I.et al. Detection of intracranial hemorrhage with susceptibility-weighted MR sequences. AJNR Am J Neuroradiol. 1999;20:1527-34.

This presentation reveals different clinical applications of SWI which are dramatically different from those obtained from conventional sequences like with T1-weighted, T1-weighted contrast-enhanced (CE), T2-weighted, FLAIR.

[62] Kmc Hospitals Mangalore, Manipal University

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Diagnosis Treatment of Epilepsy.

Ranga C. Krishna Md[63]

The talk will discuss current concepts on diagnosis, treatment of epilepsy including current concepts on surgical treatment and use of cannabis oil for intractable epilepsy.

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Headache – Tips And Tricks To Deal With It.

Prof. Dr. Uduman Ali Mohamed Yousuf [64]

Headache is a very common complaint in any consultation room and is a symptom of many disorders .The differential diagnoses as to the causes of headache is very long, may be the longest in Medicine.

A good history is the key to diagnosis. Examination is usually normal in patients with primary headache, such as migraine, tension-type headache, and cluster headache. Headache are managed by their general practitioners, who refer 2-3% of patients consulting for headache to neurological clinics. However, observational studies have shown that both general practitioners and hospital doctors are poor at diagnosing and managing headache, and headache morbidity and disability are often under-recognised, leading to undertreatment.

Diagnosis involves:

Firstly, assessing for symptoms of secondary causes of headache, starting with conditions that require immediate or urgent referral before considering less serious secondary causes including medication over-use headache.

Then, if a secondary cause for headache has been excluded, assessing for the primary headache disorders, starting with tension-type headache and migraine before considering less common disorders such as cluster headache.

If the cause of the headache cannot be diagnosed, consideration should be given to:

Asking the person to record a headache diary, and reviewing this in a few weeks. The diary should record each episode of headache, its severity, duration, any triggers (including postural changes suggestive of raised intracranial pressure), associated symptoms, and use of analgesia and caffeinated drinks.

Referral for specialist assessment.

[64] Consultant Neurologist, Professor and Head,
Department of Medicine, Melaka Manipal Medical College.

KMC THEN AND NOW (1966 – 2014). PHYSIOLOGY TEACHING – Then and now

Dr. P. Laxminarayana Rao[65]

This session will delve into the physiology teaching curriculum in KMC in the past 5 decades with respect to changes in outlook and attitudes, as well as added facilities, in respect to teachers, students, the teaching, learning styles and examinations conducted. A few examples of basic physiology in relation to gastric secretion, the understanding of the stomach function beginning from its histology and nerve supply to the phases and regulation of secretion and finally how that knowledge is applied in the treatment of peptic ulceration will be discussed. Newer information on receptors on oxyntic cells, the biochemistry of hydrochloric acid secretion and receptor blocker techniques have changed the management of conditions related to that part of the gastrointestinal system.

We have known the function of the parathyroid gland and the role of the parathyroid hormone (PTH) in tetany and osteitis fibrosa cystica. Today, more research information on its mechanism of action of PTH on bone cells have led to the inclusion in the teaching program of the types of tetany and treatment of hyperparathyroidism.

Finally, discussion on the parts, lesions and connections of the basal ganglia have expanded to encompass the direct and indirect pathways, as well as the caudate and putamen circuits. The clinical implications of this new knowledge has proved unmeasurable in the understanding of dopamine receptors and the use of L-Dopa, thereby leading to changes in the modern day approach to Parkinson's Disease and Chorea.

[65] Registrar-Evaluation, Manipal University, Manipal

MASH Journal 2014; 1(1): 74

Evidence In Treating Allergic Rhinitis & Its Complications

Dr Harvinder Singh s/o Dalip Singh[66]

Nasal symptoms are the commonest presentation to the otolaryngologists. Allergic Rhinitis and Sinusitis are the two most common conditions encountered. These two diseases may occur independently but often co-exist. Persistent Rhinitis refers to a long-standing inflammatory nasal reaction with underlying local or systemic factors. It can be classified into infective and non-infective. Infective causes include acute and chronic sinusitis. Non-infective causes are commonly subdivided into allergic and non-allergic causes.

Allergic Rhinitis is the most prevalent chronic allergic disease in adults. It causes significant detrimental effect on quality of life, and it may exacerbate a number of common co-morbidities, including asthma and sinusitis. It is an immunoglobulin E (IgE) mediated hypersensitivity of the nasal mucosa characterized by sneezing, nasal blockage and nasal discharge. This occurs as an antibody mediated hypersensitivity reaction to specific allergens. The most common allergens are house dust mites, pollen and animal dander.

Sinusitis can be divided into acute and chronic depending on the symptom duration. Sinusitis simply means inflammation of the nose and the paranasal sinuses characterized by nasal block/obstruction, nasal discharge (anterior/posterior drip), facial pain and reduced smell. It is initially viral and can be complicated further with bacterial or even fungal infection. The organism involved differs from the acute and chronic states.

Allergic Rhinitis can be classified into persistent or intermittent according to the ARIA guidelines 2001. Intermittent rhinitis occurs predominantly in seasonal climates where else persistent rhinitis is more non-seasonal and persists with minor fluctuations throughout the year.

A thorough history is still the cornerstone of diagnosis of allergic rhinitis and sinusitis. Clinical examination complements the history and should be done with an endoscope to exclude nasal polyposis and co-existent mucopurulent discharge. Skin prick Test remains to be the gold standard in confirming the allergens responsible for allergic rhinitis. In chronic sinusitis, CT scan examination of the paranasal sinuses is mandatory before surgery.

[66] Department of Otorhinolaryngology Head & Neck Surgery
Hospital Ipoh, Perak

Management of allergic rhinitis consists of identifying the main underlying cause and treating it adequately. The mainstay of treatment involves avoidance of allergens but this has proven to be extremely difficult to carry out in practice. The principles of treatment are the same in children as in adults, but special care has to be taken to avoid the side effects which are unique in this group. Nasal corticosteroid sprays and anti-histamines, used either singly or in combination remains to be the treatment of choice today. Immunotherapy has a role in cases of failure of medical therapy especially in single allergen hypersensitivity.

In sinusitis, the principal of treatment is to treat the infection with antibiotics. Culture directed antibiotics is advised. Nasal corticosteroids sprays are now advocated to reduce the nasal inflammation. Surgery is only advocated when maximal medical therapy fails.

Examining kids. Tricks of the trade

Dr. Sanjay Woodhull,[67]

What I am about to share with you is unfortunately not something that is routinely taught in medical school. Many of you more experienced than I, may have your own tricks and I welcome you to share your experience with us as a learning experience for all.

This lecture is not about the details of how to look for clinical signs such as cyanosis or clubbing, or how to determine crackles or bronchial breath sounds. That science is something I am sure you are all very good at.

Today, i hope to impart to you the art of getting through a clinical examination of a child quickly, successfully and with minimal discomfort to the child, parent and doctor. In essence making the visit to your clinic both comforting and hopefully memorable.

The bulk of the presentation will be reviewing real life videos of my patients and their parents whom were kind enough to consent to filming.
Come experience a day in my pediatric clinic
Remember:
Doing a perfect clinical examination in an adult is a science
Doing the same in a toddler is an art.

[67] Consultant Paediatrician
Sime Darby Medical Centre, Subang Jaya.

MASH Journal 2014; 1(1): 77

Esthetics Via Prosthodontics: A Case Of Full Mouth Rehabilitation

Prashanti Eachempati [68]

Creating a beautiful smile for a patient is not only rewarding for the dentist but also an opportunity to change one's self esteem, confidence and possibly the course of their life. Aesthetic & functional restorations of the worn dentition represents a significant clinical challenge.

One of the most demanding aspects of such cases involves the development of sufficient restorative space, while simultaneously fulfilling aesthetic, occlusal & functional parameters essential to long term success. This case report presents the stages of prosthodontic rehabilitation from diagnosis to final treatment & follow-up of a patient with missing teeth and worn out dentition.

A combination of prosthetic options along with a multi-disciplinary approach was used to treat this patient. The treatment phases were divided into an initial phase, stabilisation phase, definitive phase and maintenance phase. A combination of fixed partial dentures with non-rigid connector and an extra coronal attachment and cast partial dentures were used to restore function and esthetics.

Conclusion

Creating a perfect healthy smile is a challenging procedure that requires meticulous understanding of the patient's needs and treatment planning. It requires thorough knowledge, and creativity to fulfil the patient's functional and esthetic requirements. A successful esthetic and functional result using two different types of prostheses was achieved in the present full-mouth rehabilitation.

[68] Head of Department, Department of Prosthodontics, Faculty of Dentistry,
Melaka Manipal Medical College, Melaka, Malaysia

MASH Journal 2014; 1(1): 78

Timing In Orthodontics

Assistant Professor Dr. Priti Mulimani[69]

It is often said "Orthodontics is the science of infinite possibilities". These infinite possibilities and outcomes in Orthodontic therapy are determined by the complex interaction of several overlapping and intricate factors which include mechanical factors like the appliance type, mechanotherapy, wires and brackets used, interplay of biomechanics and biomaterials and biological factors like tissue response, magnitude of force, patient sensitivity, bone density and vascularity and pliability of tooth supporting tissues. Several of these biological factors are determined by the patient's age. Which brings us to one of the most commonly asked questions one has to face in Orthodontic practice "Is this the right age to start braces for my child… or is it too early?" or "Am I too old for braces?"

This paper seeks to address these issues in clinical Orthodontics. What is the right age for treatment or specifically what is the right age for what type of Orthodontic treatment? What sort of cases need to be addressed early, what cases can be delayed or postponed or in which cases do you need to wait and watch? How to determine the age of the patient and the different types of ages which will serve as a guide for clinical approach and how to specifically customize the treatment plan according to the age of a patient to best fulfill objectives for a good orthodontic treatment outcome, these and other issues will be discussed in this presentation

[69] Orthodontic Specialist, Melaka Manipal Medical College

MASH Journal 2014; 1(1): 79

Impression Materials And Techniques In Dental Implants

Dr Abhishek Apratim[70]

The main objective of making impression in implant dentistry is to accurately relate the implant analogue or the implant abutment to the other oral structures in the maxillary or mandibular arch. This becomes very important as minor changes in the orientation of the implant analog and impression coping will lead to major changes in the relationship of the prosthesis to implant, which will affect the occlusion and might compromise the health of the implant. A passive fit of superstructure and implants is essential for stress free connection of implant to the bone.

Impression in dental implants can be implant level or abutment level keeping in mind about esthetics, position of the implant, no of implants, etc. Impression can be taken either with open custom tray called as pick up impression technique or with closed custom tray called as transfer impression technique. Depending on the clinical situation any of these two techniques can be used with proper selection of impression material.

Implant level impression is usually used in screw retained prosthesis and when selection of abutment is done in the laboratory whereas abutment level impression is used in cement retained prosthesis and when good inter-arch space is available.

One of the most important prerequisite for impression materials is their rigidity. Rigidity is necessary to resist the accidental displacement of impression coping and minimize positional distortion between abutment replicas as compared with their intra oral counterparts. Impression material used in the impression technique is usually elastomeric impression material. Careful selection of the suitable impression material should be done by comparing the different impression materials available. Polyether and addition silicone are the most widely used impression materials for making impression in implant dentistry.

Conclusion

Meticulous and accurate prosthetic procedures are recommended to attain passive fit of abutment on implants. An accurate impression will produce fine details on the dental cast, on which prosthesis is made. Thus, careful selection of impression technique and impression material is very important in fabrication of implant supported prosthesis.

[70] Assistant Professor, Dept Of Prosthodontics
Melaka Manipal Medical College, Melaka

MASH Journal 2014; 1(1): 80

CSF Leak My Experience

Dr. Ashwamedsing Dinassing[71]

Case Report :55 year old female presenting with left sided unilateral csf rhinorrhoea with intermittent headache since three years. No previous history of head and neck trauma or any other contributory history. Based on my experience a multidisciplinary approach – Endoscopic repair of sphenoidal csf leak through transseptosphenoidal approach.

[71] Clinical Fellow in Head & Neck Onco - Surgery

MASH Journal 2014; 1(1): 81

Laser Surgery In The Management Of Sleep Apnea And Sinusitis, The New Era

Dr Balachandran Appoo[72]

The innovation in the management of laser surgeries in ENT Head Neck pathologies is slowly taking big leaps from baby steps.

The primary usage of laser in ENT Head Neck in Malaysia thus far has been primarily for laryngeal pathologies. Laser surgery has very remarkable outcome for sleep Sleep Apnoea and for sinusitis surgery (FESS). It can be used for both and adults and children.

We, in Tropicana Medical Centre have made innovative changes to the art of laser surgeries in ENT Head and Neck since 2009. The team currently conduct an average of 1000 procedures a year for both adults and children (the largest series of ENT Head Neck Laser surgeries in Malaysia).

I have coined the **3 'D' non-touch technique** for almost all surgeries including tumors (benign and malignant).These techniques involve removal, reduction and modification (plasty) of the Head and Neck anatomical tissue. This technique is tissue sparing and gives far more rewarding outcome than the conventional method. Laser surgeries for sinusitis has added advantage, including reduction of nasal allergy by about 85 to 90%.

[72] Consultant ENT Head Neck Surgeon, Department of ENT Head Neck LASER surgery
Tropicana Medical Centre

MASH Journal 2014; 1(1): 82

Otology for GP's

Dr Kailesh Pujary[73]

Ear related disorders are a common presentation in general practice. Outlined are the current treatment guidelines for management of some common otological disorders. Acute suppurative otitis media an inflammatory condition of the middle ear cleft presents with ear block and pain. Treatment guidelines depends on the severity of the condition.

Otitis media with effusion requires a regular follow up initially with conservative treatment. Surgical treatment i.e myringotomy and grommet is recommended for persistent effusion. Prior assessment is required to rule out an underlying cause including nasopharyngeal lesions.

Chronic suppurative otitis media with mucosal disease (tubotympanic type) requires assessment and treatment depending on the stage of disease, associated infections, source of infection and hearing loss.

Chronic suppurative otitis media with squamosal type (atticoantral) mainly requires a surgical intervention based on the location and extent of the disease.
Otitic barotrauma varies with presentation based on the involvement of the external, middle and / or inner ear.

Sudden sensorineural hearing loss occurs usually unilaterally and frequently goes unrecognized. Early diagnosis and treatment may help improve the hearing.

[73] Specialist in Otolaryngology, Dubai

MASH Journal 2014; 1(1): 83

In The Woods… Care Of The Critically Ill

Dr. Shanti Rudra Deva[74]

Intensive care units were established in the early 1920s when surgeons realised that critically ill postoperative patients needed close monitoring. Nurses were specially trained to care for these postoperative patients. Gradually, intensive care units expanded to include non-surgical patients. With the continuing expansion of intensive care units, sicker patients were admitted.

Currently, any patient who has a potentially reversible pathology with a good chance of survival is admitted to the intensive care unit. Advances in technology allow for more sophisticated equipment for monitoring and organ support to be developed to assist in the care and management of these patients who are now surviving intensive care for longer periods of time.

Recent years has seen a gradual change concerning the outcome of patients that survive intensive care. Critical care physicians have realised that reversing organ failure and surviving intensive care stay did not necessarily translate to good quality outcomes. Patients need to be discharged alive with minimal sequalae related to their intensive care stay with the promise of good long-term quality of life.

Critical care physicians are cognizant that an integrated approach to shape the overall care and management is needed to ensure good quality outcomes. Dieticians, physiotherapist, infectious disease consultants and other consultants relevant to the patient's disease state are now regularly involved during the patient's stay.

FAST HUG was one of the first mnemonics coined to function as a checklist to ensure some key aspects in the general care are not forgotten. It includes optimisation of feeding (F), analgesia (A) and sedation (S). Equally important is prophylaxis against thrombus (T) and ulcers (U) while glucose (G) control is advocated to decrease mortality. Nursing patients with the head of bed (H) in the elevated position is known to prevent ventilator-associated pneumonia and aspiration of feeds.

Since FAST HUG, there has been an increasing number of mnemonics emphasizing other crucial aspects in the care of the critically ill that will impact outcome. Early mobilization is currently being emphasized as its been shown to prevent ICU acquired weakness and its sequelae. As responsible clinicians, minimising exposure to broad-spectrum antimicrobials by de-escalation prevents the proliferation of multidrug resistant organisms.

[74] Consultant Intensivist, Kuala Lumpur Hospital

Intensive care has evolved over the years. Patients and families expectations have also changed with most expecting a good quality of life on discharge. An integrated approach involving all members of the ICU team is thus important to ensure effective and efficient care of the critically ill.

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Pain Control in Oncology & Beyond

Dato' Dr Satber Kaur[75]

Cancer is a major public health issue worldwide. It is estimated by WHO that there will be a exponential increase in the incidence of cancer to reach 15 million new cases by the year 2020. 70% of patients with advanced cancer will experience pain. A systemic approach to the treatment of cancer pain will treat the vast majority successfully. Pain management in general, and particularly in oncology, has evolved as appreciation of drug pharmacology, multimodal drug therapy, and non-drug therapies have improved. As cancer pain dynamically changes because of progression of disease and the patient's changing psychological state, the treatment needs constant review. We now endeavour to make our patients not only comfortable, but also to function as normally and productively as possible throughout the course of their disease. We will discuss various pain management modalities and strategies to help individualise treatment of our patients.

[75] Consultant Anaesthesiologist
Pantai Hospital Kuala Lumpur

MASH Journal 2014; 1(1): 86

Breast Cancer- Updates and Recent Surgical Trends

Dr. Harjit Kaur Perdamen[76]

The management of breast cancer has been evolving over the years. From radical surgeries we are now moving towards more minimally invasive procedures. With the advent of screening and increasing awareness more women are being diagnosed early. Early diagnosis affords more options in their management and theses options are well tailored to their findings and personal needs. The outcome in breast cancer treatment has improved tremendously. With a more refined approach to management, surgical intervention and treatment there are more women surviving than dying from the disease.

Surgery is still the mainstay in the management of breast cancer to date. Adjuvant and targeted therapies are becoming increasingly important as well. With minimally invasive surgeries and therapy the management of breast cancer is becoming less frightening to patients and more acceptable.

[76] Consultant Breast & Endocrine Surgeon

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HRT- Emerging evidence of safety post WHI and Million Women's study

Dr Jean M S Arokiasamy[77]

We have lost a generation of women to the benefits from HRT. This was brought on following results the studies from the Women's Health Initiative and Million women's study and the Nurses health studies. Over the years clinical practitioners have shied away from the use of HRT as it was linked to the dreaded 'cancer'. We now have evidence of the benefits in the protection from ever increasing numbers in cardiovascular disease seen in women over 50 years. The use of HRT post Breast Cancer continues to pose a challenge, however there are other modalities of treatment which can combat the symptoms of the menopause. The need to enhance the quality of life in women in the peri-menopause and post menopause must be revisited and lead to practice change. This talk will take us through a journey to meet the needs of this cohort of women who need treatment to address their physical and psychological life changing symptoms.

[77] Consultant Obstetrician Gynaecologist, East Surrey Hospital, Redhill
East Surrey, United Kingdom

MASH Journal 2014; 1(1): 88

Breast Screening in the 21st century

Dr. (Ms) Patricia Alison Gomez[78]

As much as we would like to believe that breast cancer is a disease of the elderly woman, we are in fact seeing younger women being diagnosed with breast cancer; women in their 30's and 40's and even those as young as 20 are getting breast cancer. This is especially so for Asian women. It is also a well-known fact that 1% of breast cancer patients are men.

Clinical Examination is of utmost importance and is the first tool in the diagnosis. All breast lumps must be investigated and usually by 'Triple Assessment'; clinical examination, imaging (either a mammogram and or ultrasound) and a needle biopsy.
Mammography is the 'Gold Standard' for diagnosing Breast cancer around the world. Digital mammography is fast overtaking analogue mammography as the images are better, clearer and the need for repeat views is minimised. The radiation dose is also less with digital mammograms.

The ultrasound is an adjunct tool to supplement mammography findings and especially in dense breasts, and in women under the age of 40 years. The ultrasound can very quickly define lumps, ascertain if they are water filled, solid or complex, and define the vascularity or elasticity of a lump as well as assist in accurate guided biopsies.

MRI (Magnetic Resonance Imaging) is not usually used as a screening tool, but has its advantages in detecting new malignancies after surgery and radiation, and in screening very high risk families. Enhancement curves should be done to diagnose cancers.

The BIRADS (Breast Imaging-Reporting and Data System) is an excellent tool to standardise reporting on Breast Imaging, started for mammography and now used for ultrasound and MRI reporting as well.

This paper will advise on the recommended screening to be done in the various age groups as per the Malaysian Clinical Practice Guidelines for Breast Cancer.

Breast Cancer is the Number One Cancer Killer of Malaysian women, it is our responsibility to increase awareness and encourage women to come forward for screening to decrease the morbidity and mortality from this dreaded disease.

[78] Consultant Breast and Endocrine Surgeon and Clinical Director, Breast Care Centre
Pantai Hospital Kuala Lumpur, Malaysia

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HPV vaccination & Cancer Prevention

Dr Suresh Kumarasamy[79]

HPV infection is the aetiological agent for cervical cancer. In addition, a number of other cancers are associated with HPV infection including anal cancer, vulval and vaginal cancer and some head and neck cancers.

Although screening with the pap smear has decreased the incidence of cervical cancer in many countries, the impact of screening in developing countries has been unsatisfactory. HPV related disease in developing countries with limited screening account for 80% of the global cancer burden.

Primary prevention through HPV prophylactic vaccination offers a new tool to improve cervical cancer control. Large phase III randomized controlled trials involving several thousand women worldwide have convincingly shown that the HPV vaccines are efficacious and safe. Protection of previously unexposed women is greater than 90% against the target HPV types. In addition trials have demonstrated protection against vulval, vaginal and anal cancer.

The primary target population for vaccination are adolescents before sexual debut and exposure to HPV. International committees on immunization practices have recommend routine vaccination of girls aged 11-12 using three doses of the vaccine. Vaccination is also recommended as catch up vaccination for unvaccinated girls and women aged 13 to 26 years. In some countries eg. Australia a gender neutral vaccine policy is being practiced.

In April 2007, Australia became the first country to introduce a national government-funded HPV vaccination program using the quadrivalent vaccine. Large declines in genital wart as well as high grade cervical abnormality incidences have been seen in the vaccinated age groups confirming the “real world” efficacy of HPV vaccination. Similar data has been reported from other countries.

Malaysia was the first middle-income country in the world to implement a national HPV vaccination program in September 2010. It is a school based vaccination program targeting girls at Year 7 of school (13 years), with clinic based immunisation for out of school 13 year old girls. This program was very successful with 95.9 and 97.9% of parents giving consent for their daughters to be vaccinated and 97.9% and 95.9% of girls with parental consent completed all 3 doses in 2010 and 2011 respectively. .

[79] Consultant Obstetrician & Gynaecologist/ Gynaecological Oncologist
Gleneagles Penang

In 2012 a catch up vaccination program was introduced targeted at girls aged 18 years. The Malaysian HPV vaccination program could be a model for the developing world, where organised and effective screening is unlikely to be successfully implemented in the short term.

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Ovarian Cancer: Unmasking The Great Pretender

Lucy Gilbert, MD, MSc, FROCG[80]

Despite considerable investment into early diagnosis and treatment, the cure rate for ovarian cancer has remained stagnant over the last four decades and it is the 5th most common cause of cancer-related death in women. This is because about 90% of the deaths from ovarian cancer are from high-grade serous (HGSC) and related high grade subtypes, which are often diagnosed in advanced stages.

So far, all screening programs have failed spectacularly in diagnosing HGSC inn early stage, while it is still confined to the ovary. The pilot phase of our ongoing study, Diagnosing Ovarian cancer Early (DOvE), shed some light on why the screening trials failed. In the DOvE pilot, women with symptoms associated with ovarian cancer were given open access to fast-track diagnostic testing using serial CA125, and TVUS, with a low threshold for follow up with CT and MRI scans to try and achieve early stage diagnosis. To our surprise, we found that most "ovarian" HGSC actually originated from the fallopian tube epithelium and had disseminated into the abdomen while the ovaries were normal.

Although the tubes had been pinpointed as the source of HGSC in patients with BRCA mutation, the ovary remained the focus of diagnostic tests for ovarian cancer in the general population. However, with HGSC starting in the fallopian tube, it can disseminate into the peritoneal cavity early in the course of the disease. By the time the ovary has become involved to the extent of appearing abnormal on transvaginal ultrasound scan, the abdominal cavity is already involved by disseminated tumour nodules. If we are to diagnose HGSC early, we have to focus on HGSC and the fallopian tube.

[80] Director of Gynecologic Oncology, McGill University

MASH Journal 2014; 1(1): 92

Update in Diabetes Management

Associate Professor Dr. Shireene Vethakkan[81]

Recent times have witnessed many changes/developments in the management of diabetes. The 2012 ADA/EASD consensus statement advocates patient-centred management and individualized treatment targets and a new class of oral anti-diabetic drugs called the SGLT2 inhibitors are now available for use. This session will cover these and other advances in diabetes management including high-intensity interval training in patients with diabetes, new uses for GLP1 analogues and the bionic pancreas.

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Ultrasound – Getting The Best Image

Associate Professor Dr. Anushya Vijayananthan[82]

Ultrasound is a diagnostic modality that first gave the the world a glimpse of the "insides" of the human body. Since its inception in the early 20th century, diagnostic ultrasound has progressed in leaps and bounds in tandem with the age of global technology. We have seen the image quality and resolution change over the years from lines and dots to almost picture perfect three and four dimensional images. Many mathematical equations and physics principles are responsible for this miracle.
Ultrasound will always be a popular diagnostic imaging modality due to its lack of ionizing radiation, portability and patient comfort. It is an asset to be able to perform an ultrasound examination and perform it well. Due to its large dependency on the operator, proper training and knowledge is essential to ensure accurate diagnosis.

The basic operation of the ultrasound machine has not changed much over the last 20 years. The image quality is largely controlled by the operator and by learning simple tips and tricks, a spectrum of grey can emerge into images of diagnostic quality. These tips and tricks are essential for any clinician who uses ultrasound in their daily practice.

Another aspect of ultrasound that has been raised constantly over the years is the safety in pregnancy. This is an important topic as ultrasound has also been abused for many reasons.

The American Institute of Ultrasound in Medicine (AIUM) released a statement in 1999 that reads as follows:
"The AIUM strongly discourages the non-medical use of ultrasound for psychosocial or entertainment purposes. The use of ultrasound (2D, 3D or 4D) to only view the fetus, obtain a picture of the fetus or determine the fetal gender without a medical indication is inappropriate and contrary to responsible medical practice…."

In conclusion, ultrasound is a safe, reliable, cost effective diagnostic tool, but the operator has to ensure that he or she has had adequate training before embarking on this journey of diagnostic ultrasound.

[82] Consultant Radiologist, Department of Biomedical Imaging
University Malaya Medical Center, Kuala Lumpur

MASH Journal 2014; 1(1): 94

Treatment of Diabetic Wounds

Dr.Harikrishna K.R.Nair[83]

Diabetes has become very prevalent till 20 % of the population above 18 years of age has this debilitating disease. What is more scary is that 25% of the diabetics have diabetic foot complications which is going to further burden the government healthcare system. However, Armstrong et al 1998 has shown that this is the only diabetic complication which can be prevented by up to 85 %.

Every 30 seconds there is an amputation in the world in the year 2005 as documented during the World Diabetic Day.However, the International Working Group on Diabetic Foot noted that in 2011 there was a foot being amputated every 20 seconds. Therefore, we are actually not doing too well and we need to pool the resources and the efforts to combat this problem.

Assessment is important in the management of diabetic wounds. General assessment is crucial. Following that a comprehensive local assessment using the wound bed preparation concept and the TIME concept is utilized. TIME stands for Tissue, Infection and Inflammation, Moisture Imbalance and Epidermal margin.

Following assessment, the wound is cleansed with cleansing solutions such as Distilled water, Normal Saline and non toxic cleanser such as PHMB with Betaine, Superoxide Solutions and Octenisept. Then the wound is desloughed and debrided with scalpel, hydrostatic or ultrasonic debridement techniques before dressings are applied. HOCL can also be used for wound disinfection. A whole host of dressings including silver, iodine based dressings, maggot debridement therapy, collagen with glycerin, and others can be applied and the various cases will be shown. Adjunctive therapies with negative pressure wound therapy can also be used to compliment the good wound care involved in healing the wounds with minimal complications.

[83] Head, Wound Care Unit, Dept. of Internal Medicine, KLH
Founding President, Malaysian Society of Wound Care Professionals

Foreign Worker's Medical Examination

Dr Kreeson Vengadeson[84]

FOMEMA Sdn. Bhd. was established to manage and operate a mandatory foreign worker health screening system in Peninsular Malaysia. FOMEMA Sdn. Bhd. was awarded the concession to implement, manage and supervise a nationwide mandatory health screening programme for all legal foreign workers in Malaysia.

The objectives are to ensure that foreign workers in Malaysia are free of an identified list of communicable diseases and to ensure that Malaysia's public health facilities are not burdened by unhealthy foreign workers with medical conditions or diseases that require prolonged and extensive treatment.

FOMEMA Sdn. Bhd. is owned and operated by Unitab Medic Sdn. Bhd.

[84] Senior Vice President of Operations

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Practical Guide To Carbohydrate Counting for Diabetics

Ms. Indra Balaratnam[85]

Diabetes mellitus is a contributory factor in the increase of morbidity and mortality rates. In is one of the main healthcare burdens of developed and developing countries alike. The prevalence of Type 2 diabetes has increased in the age group of 30 year olds, and is no longer exclusive to only the elderly.

Blood glucose levels post meal are determined by the rate of the amount of glucose from carbohydrate once digested and absorbed into the bloodstream; in relation to the efficiency of insulin to clear circulating glucose in the bloodstream. For a complete balanced diet, avoiding carbohydrate foods in a diabetic diet is not the solution for long-term health. Grains, vegetables, fruit and dairy contain carbohydrates. They are also rich sources of energy, dietary fiber, vitamins, minerals and antioxidants. Their high nutrient content make them an essential component for a wholesome diet for everyone, including diabetics.

Carbohydrate counting of food portions is a key strategic method that a diabetic can use to achieve glycemic control. Research shows that it is the total amount of carbohydrate eaten at a meal that is the main determining factor of postprandial glucose levels. Learning this invaluable skill will help empower a diabetic to be consistent in achieving favourable glycemic control on a daily basis by eating the right amount of carbohydrates at meals and snack times. By familiarizing themselves with carbohydrate counting, healthcare professionals who are part of the management team of the diabetic patient can help to reinforce healthier food choices to their patient to achieve better compliance and outcome.

[85] Consultant Dietitian

MASH Journal 2014; 1(1): 97

Zap it right!

Kwan-Hoong Ng [86]

Radiological imaging is central to the clinical practice of medicine across a wide range of disciplines. It is the best practical way to diagnose, monitor treatment and detect progression or relapse of many common diseases in a minimally invasive and anatomically precise method. The rapid advancement in imaging technology has increased the complexity and accuracy of clinical imaging, the utilisation has increased dramatically over the past two decades.

Nevertheless we are still constantly faced with issues such as overuse, overdose and over-investigation. Ensuring optimal imaging efficacy and patient safety should be our utmost priority. The principles of justification and optimisation in radiological imaging should be clearly understood by all the healthcare providers including referring clinicians, radiologists, and radiographers. However, the full potential to significantly reduce radiation dose delivered to the patients has yet to be realised; this is in part due to the lack of awareness, education and training among the imaging staff and referring clinicians.

Current safety issues with radiological imaging will be discussed, including technology factors, such as automatic exposure control, exposure index; and human factors such as non-optimised exposure factors, inappropriate collimation and positioning. The ultimate aim is to ensure safety in providing the highest quality radiological imaging service.

[86] Department of Biomedical Imaging, University of Malaya Medical Centre, Kuala Lumpur

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Provision of Haematopoietic stem cell (Bone Marrow) transplant service in Subang Jaya Medical center-A review

DR Ng Soo Chin [87]

Bone marrow transplants (BMT) results in the early sixties were poor but over the past 60 years, there has been steady improvement in treatment outcome and BMT or more accurately Haematopoietic stem cell transplant (HSCT) is now an established modality for treat haematological malignancies. More than a million HSCTs has been performed worldwide up to end of 2012 and it was estimated more than 50,000 HSCTs are performed yearly with a 10-20% increment yearly.

HSCTs can be the curative treatment option because of the utilization of myeloablative chemotherapy +/- radiation and the marrow is' rescued' with infusion of haematopoietic stem cells which can be pre-harvested from bone marrow, peripheral blood stem cells or cord blood. In cases of allogeneic HSCTs , the added attacks on residual tumour cells by the graft versus tumour effects further enhances the ability of HSCTs to eradicate the cancer.

Subang Jaya Medical center is the first private medical center in Malaysia to provide HSCT service which was started in 1999. Till 2013, 349 HSCT were performed and of which 226 are autologous HSCT while 123 were allogeneic HSCT. This paper will review the setting up of the HSCT center and the transplant results to date. There remain challenging issues to overcome in making HSCTs safer and improving the treatment outcome further. These include reducing the risk of relapses in autologous HSCTs and reining in graft versus host disease in allogeneic HSCTs. In developing countries such as Malaysia, improving the accessibility of HSCTs to more needy patients and getting more trained personnel are pressing needs.

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Current Approaches and Future Challenges in Prenatal and Bone Marrow Cytogenetics

Dr. Saira Bahnu bte Mohamed Yousoof[88]

Chromosome aneuploidies and structural rearrangements such as translocations, inversions and copy number variations can cause congenital anomalies and cancer. Specific gene disruption or abnormal gene expression arises from such rearrangements forms a causative link between the observed phenotype and the underlying genetic cause. Owing to the complexity of the human genome, finding the genetic causes for patients with these conditions can be challenging and time-consuming and this often leaves the patients and families with limited access to genetic diagnosis or accurate genetic information.

For several decades, traditional karyotyping which allows microscopic visualization of the entire genome has been extensively used as a diagnostic tool for a number of clinical syndromes in prenatal and bone marrow cytogenetics. The conventional cytogenetic analysis has been very useful in finding both balanced and unbalanced chromosomal anomalies associated with congenital disorders and cancer. This method has shown that the clinical and biological diversity of certain genetic disorders such as leukemia are attributed to distinct chromosome aberrations which are now routinely used for diagnosis, prognostics and treatment responses. Unfortunately, subtle chromosomal imbalances (<5 Mb) are invisible in karyotyping, therefore additional molecular cytogenetic techniques such as FISH and chromosomal microarray are required for solving diagnostic dilemma.

Since its introduction in 1970s, fluorescence *in situ* hybridization (FISH) has emerged as an indispensable tool for clinical diagnostics in prenatal and cancer cytogenetics. This technique enables a specific detection of targeted sequences, chromosomal regions or entire chromosomes in both cultured and uncultured cells using fluorescent labelled DNA probes. In prenatal diagnosis, interphase cells obtained from amniotic fluid are used for rapid detection of chromosomes 13, 18, 21, X and Y aneuploidies. In addition, FISH also plays a leading role in providing crucial information regarding genetic variations in malignant cells and evaluation of copy number variations and chromosomal rearrangements of clinically important biomarkers such as Her-2/*neu*, N-MYC and ALK for targeted molecular therapy in cancer patients. While this technology can identify smaller chromosomal gains and losses, FISH is biased toward selected regions of the genome and it requires *a priori* knowledge of the selected regions, therefore it is unsuitable for scanning the whole genome.

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The advent and application of chromosomal microarray, particularly array comparative genomic hybridization (array CGH) has transformed cytogenetics from 'morphology' into a massively robust 'molecular' space. Chromosomal microarray (CMA) can achieve a resolution less than 100kb and provides analysis of the entire genome without *a priori* knowledge of the genomic region involved. This platform has greatly improved the mapping efficiency of clinically relevant chromosomal imbalances in known syndromes. In recent years, CMA has become the first-tier diagnostic test for postnatal testing in individuals with intellectual disabilities and other childhood syndromes, and now its application has also increased substantially in prenatal. Despite its ability to detect genomic imbalances at a higher resolution than the conventional methods, it carries a potential risk for finding uncertain clinical significance which may result in patient anxiety and challenging in genetic counselling.

The recent advancement of high throughput next generation sequencing provides a more comprehensive genomic coverage than array-based methods. This technology currently offers the best resolution, resulting in discovery of novel mutations and unexpected complex rearrangements as well as identification of fusion genes leading to new therapeutic targets. As the sequencing cost continue to decline, it is likely that next generation sequencing may supercede array-based testing and conventional methods. The future cytogenetic laboratory will have more sequencers than microscopes, and more technologists with molecular training and bioinformatics knowledge than ever before.

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Cytology 2014 - Making Sense Of Cells

Dr Joshua Mohanraj Daniel[89]

The study of cells (cytology) has come a long way since it was first observed by an English scientist Robert Hooke some 359 years ago. However it was Muller (in 1838) who set the foundations of clinical cytology as we know it today. In 1928 Georgios Nikolaou Papanikolaou first reported that uterine cancer could be diagnosed by means of a vaginal smear.

Since then cytology or cytopathology has progressed from merely identifying abnormal cells on smeared slides to become an important part of cancer diagnosis over the past few decades. Almost all major hospitals offer gynecological (cervical), non -gynecological (body fluids) and fine needle aspiration cytopathology services.

With the introduction of liquid based Papanicolaou test, high-risk human papillomavirus (HPV) testing and computer -assisted screening devices, cervical screening has shown an increase detection rates and is now more reliable.

Recent advances in cytological techniques has made it possible for cells (obtained from fine needle aspiration and exfoliated cells) to be used for primary diagnostics, prognostic information, predictive information, monitoring disease, diagnosing recurrence and research.

Fine needle aspiration (FNA) cytology has emerged into a valuable tool for not only primary diagnosis of neoplasms but also for tumour typing with the use of immunohistochemistry, immunofluorescence, flow cytometry, specific oncology probes, In-Situ Hybridization and PCR.

Fine needle aspiration cytology offers clear advantages to patients, doctors and taxpayers. The technique is minimally invasive, produces a speedy result and is inexpensive. Its accuracy in many situations, when applied by experienced and well-trained practitioners, can approach that of histopathology in providing an unequivocal diagnosis. However, aspiration cytology is not a substitute for conventional surgical histopathology. It should be regarded as an essential component of the preoperative/pretreatment investigation of pathological processes, in combination with clinical, radiological and other laboratory data.

The practice of cytology is heavily operator (smear/FNA taker) dependent and requires skilled cytotechnologists and well trained pathologists with specialized training in cytology for meaningful and accurate interpretation. An adequate well preserved and representative

[89] Consultant Histopathologist And Cytopathologist

sample is vital for cytological interpretation. A definitive specific diagnosis may not be possible by cytology in a proportion of cases, but a categorization of disease and a differential diagnosis with an estimate of probability can usually be provided to suggest the most efficient further investigations, saving time and resources.

With the addition of immunohistochemistry and molecular techniques to cytology it is imperative that adequate quality control and quality assurance programmes are in place to ensure reliable results.

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Targeted Therapy- The Changing Role Of The Anatomic Pathologist"

Dr Pathmanathan Rajadurai[90]

The explosive growth in targeted therapy has posed an opportunity for expanding the role of the traditional surgical pathologist beyond the confines of mere morphology. The identification of new therapeutic targets as being important in the treatment of many cancers has led to the development of commercial companion diagnostic tests. As several of these cancer biomarkers may be identified in formalin-fixed paraffin embedded tissue (FFPE), surgical pathologists have been challenged to become conversant in a number of molecular methodologies such as semi-quantitative immunohistochemistry, fluorescence in situ hybridization, PCR and its multiple variants, next-generation sequencing, DNA-arrays, methylation analyses, and so on. The modern day diagnostic pathologist is expected to dive deep into tissue biopsies and provide not just morphological information, but genetic, proteomic as well as epigenetic data, information relevant in the current atmosphere of individualised medicine.

[90] Consultant Pathologist and Laboratory Director

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The Construction Chemicals Industry in Malaysia

Dr Syed Nur Azman bin Syed Mustaffa[91]

The current market size of the construction chemicals in Malaysia is estimated to be RM240 million and trend is expected to grow in tandem with the country's construction industry. The key players of the construction chemicals industry in Malaysia are FOCROC, SIKA, ESTOP, MAPEI, BASF, STO.

The segment of the construction chemicals include admixtures for concrete, cement grinding aids, surface treatment for mortars and concrete, grouts and anchors, concrete repair, industrial flooring, protective coatings, sealants & joint fillers, waterproofing, waterstops, bridge expansion joint system, and adhesives. This presentation will focus on the waterproofing segment, notably, crystallization waterproofing in cementitious matrix, swellable waterstops, high performance elastomeric polyurethane waterproofing system, and flexible cementitious acrylic waterproofing system.

[91] Associate Professor

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Comparison and Assessment of Certificate Policies for Unification of Public Key Infrastructures

Dr. Balachandra K Poojary [92]

The Public Key Infrastructure(PKI) provides facilities for data encryption, digital signature and time stamping. It is a system where different authorities verify and authenticate the validity of each participant with the use of digital certificates. A Certificate Policy (CP) is a named set of rules and it indicates the applicability of a certificate in a Public Key Infrastructure. When two or more business corporations are collaborated or during their acquisitions, merging of their PKIs at the root is a simple and straight forward approach. This is the best solution when the interoperability between the PKIs is temporary and dynamically change with the market requirements. The merging process needs to be low-cost, easily constructed and flexible. In order to merge two infrastructures, the certificate policies should be merged as well. If the certificate policies are different, the unification of PKIs is not allowed. The problem is the inadequate standardization of them, which would be useful to achieve interoperability.

This paper presents a method to compare and assess certificate policies during merger and acquisition of companies.

In a Public Key Infrastructure, a certificate authority issues an end user, an X.509 version 3 certificates according to one or more given certificate policies. Assume that there are two different companies, each with its own PKI and they like to merge and unify their infrastructures. For that, they have to establish a connection between the two different domains. Cross certification is a possible solution. If the certificate policies are different, policy mapping is a solution to establish secure communication through unified domains. Issues regarding unification of the policies is mentioned in RFC 3647. This paper describes the problems and the solution approaches for it. A procedure for comparison and assessment of Certificate Policies is explained. The method is to calculate a compatibility score, which is the base to decide if the unification of the PKIs is possible or not. If unification is possible, a prototype of a unified certificate policy for the merging companies can be created. The CPs must be standardized before they can be compared.

First of all, the outline of the certificate policies will be parsed. The comparison of these CP outlines of different PKIs is possible by parsing. The parsing is carried out according to some syntactical rules. Parsing the outline of certificate policies is proposed in RFC 3647.

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Two CPs are parsed and compared. Based on the degree of comparison a compatibility score is calculated.

Non-Invasive Techniques For Fault Diagnosis Of Induction Machines

Dr Vinod V. Thomas[93]

Three phase squirrel cage induction motors are commonly used in industrial drives as they are quite rugged and of low cost. Although they are very reliable, occasional breakdown of these machines used in critical applications like petrochemical, power plants, manufacturing, chemical, automotive industry can lead to plant shutdown and hence heavy financial losses. Non-invasive online condition monitoring of induction machines can reduce machine downtime and thereby enhance its reliability. Condition-based maintenance strategies are now widely used by industries and health monitoring of electric drives is a major feature in such approaches. Accurate methods for online condition monitoring of induction motors can improve the reliability and reduce the maintenance costs. Condition monitoring involves noninvasive acquisition of vital signals, processing these signals to extract fault signatures, deciding if a fault exists and identifying its type. The presentation reviews the current trends in on-line fault detection and diagnosis of induction machines and identifies future research areas.

[93] Director, Manipal Institute of Technology
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Mathematical Modelling of Cancer Cells Growth

Zanuldin Ahmad [94]

A mathematical model is discussed to understand the complex interactions that govern the processes associated with tumour growth. The model combines the effects of blood flow, angiogenesis, vascular remodelling and the influence of initial vascular network on the tumour's growth dynamics. We will also discuss the application of the model in investigating the effects of different anti-cancer therapies.

[94] Deputy Vice Chancellor & Professor, Manipal International University, Nilai Negeri Sembilan

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Artificial Intelligence and Knowledge management in Medical cases

Prof Dr Vishweshwar Kallimani[95]

Knowledge is precious and is a continuous process in developing. Knowledge management (KM) is a process which nurtures the precious knowledge and is referred whenever a need arises. In medical domain, medical case knowledge (captured from the experts) is important in preserving and reusing. It is a continuous process of improvements in the knowledge applications. In this cycle, knowledge capturing, reusing and updating are some of the knowledge processes, which are the necessary components of KM. Challenges would appear in retrieving a relevant case from the large Knowledge base (KB) with many cases of different diseases.

Cases would include different dimensions, features, and concepts. To identify the request and delivery of the of the right cases, from the knowledge base, identification and selection of cases plays an important role in relevance matching and case retrieval. This research is on the application of Artificial Intelligence (AI) in medical case recognition from a large KB using Artificial Neural Networks (ANN). This application is a problem solving one, for Medical students, practitioners and the hospitals for case knowledge references and applications.

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Regulatory Perspective on Stem Cell Therapy

Josemoney J James[96]

The use of stem cells as medicines is a promising and upcoming area of research as they may be able to help the body to regenerate damaged or lost tissue in a host of diseases like Parkinson's, multiple sclerosis, heart disease, liver disease, spinal cord damage and many more. Stem cell therapies have existed since the first successful bone marrow transplantation in 1968. Stem cell therapy regulation covers the batch consistency, product stability to product safety, purity and efficacy.

Translating basic stem cell research into routine therapies is a complex multi-step process which entails the challenge related to managing the expected therapeutics benefits with potential risk while complying with the existing regulation and guidelines. In United States (US) Code of Federal Regulation, 21 CFR 312, 21 CFR 600 & 21 CFR 211 are available to regulate cell therapy products. While in European Union (EU) cell therapy is based on 3 directives (Directive 2003/63/EC, Directive 2001/20/EC and Directive 2004/23/EC. In Malaysia, we do not have a well-defined regulatory framework for stem cell therapy. Currently, National Pharmaceutical Control Bureau (NPCB) under Ministry of Health (MOH) regulates the stem cell therapy using Pharmaceutical Inspection Co-operation Scheme (PIC/s) Annexure 13; Manufacture of Investigational Medicinal Products guideline in Malaysia.

This presentation summarizes the stem cell therapy regulation range from collection, isolation/purification, manipulation, characterization to delivery and administration.

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Retrospective and Prospective Developments of *Hevea brasilienis* Genetic Transformation

Dr. Arokiaraj Pappusamy[97]

As in most crop plants, the objective of genetic transformation is to develop genetically modified plants with desirable agronomic traits. More than that, researchers have another major research target and that is for the production of valuable proteins. It is here that we seek to turn the transgenic rubber tree (*Hevea brasiliensis*) into a factory for the production of valuable proteins such as pharmaceuticals. The rubber tree is a unique plant in that its crop harvest, through latex tapping, is non-destructive in nature.

This confers upon the tree an advantage not found among other crop plants that are engineered to produce recombinant proteins. Here, the production of the target recombinant protein in the tapped latex is continual. In this connection, previous research findings in producing β-glucuronidase (a bacterial enzyme-routinely used for the enzymatic hydrolysis of glucuronides), a recombinant antibody and human serum albumin in the latex of transgenic rubber plants were very encouraging.

More recently, a gene encoding human atrial natriuretic factor (HANF), a peptide hormone that is involved in regulating cardiac bold pressure was inserted into rubber cells and the results of this experiment shall be presented. Routinely, the CaMV 35S promoter is employed to express transgenes in *Hevea*, which results in synthesis of recombinant proteins at low levels. One way to increase the levels of recombinant proteins is by manipulating the gene constructs employed in genetic transformation. Here, we employed a latex-specific promoter (hevein promoter) to overexpress β-glucuronidase in the latex of rubber plants. The transgenic *Hevea* system has shown itself to be a promising technology for 'molecular pharming' in the future.

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Epigenetic Regulation of Cancer growth and their Utility as Biosignatures and Therapeutic Targets

Kapaettu Satyamoorthy[98]

There are number of variations within the human genome that are responsible for large number of phenotypes, traits and more importantly to genetic pre-disposition to diseases. Genomic basis of some of the variations among the individuals are caused by subsets of changes such as

a) structural alterations in DNA sequences (CNVs),
b) discrimination between alleles and allelic variations,
c) epigenetic alterations and
d) genetic polymorphisms (SNPs).

Epigenetic changes manifest itself through several classes such as

a) changes in DNA methylation,
b) chromatin architectural changes through post-translational modifications of histones,
c) deregulation of miRNAs and
d) effects from these compounded by copy number variations (CNVs) and SNPs.

All of these would ultimately have significant effect on expression and protein function. DNA methylation has been, and still continues to be well-documented phenomenon, wherein the patho-physiological effects of its manifestation are visible only upon subtle but consistent changes in gene expression. However, epigenetic variations, and in specific, DNA methylation changes, are reversible thus making it attractive as biomarkers for diagnostic, prognostic purposes and as therapeutic tools.

Oral, breast and cervical cancers show high incidence and mortality rate in India and our laboratory has been working on identifying biosignatures of DNA methylation in these cancers. We have been successful in identifying the miRNA and DNA methylation signatures in cervical cancer through DNA sequencing and methylation microarray analysis followed by its validation. Bioinformatic data analysis indicates accumulation of several alterations necessary for the survival and progression of tumors, some of which, we have been able to validate through bisulfite genomic sequencing of clinical samples.

[98] Director, Center for Molecular & Cellular Biology, Department of Biotechnology
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Gene ontology analysis has identified several genes, commonly altered in cervical cancer, which are related to physiological, cellular, developmental and biological pathways, implicated in carcinogenesis. Some examples of such analysis in transcriptional and functional changes in tumor and normal tissues will be presented.

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Current Challenges in Stem Cell Field

Shamala Marimuthu[99]

Stem cells have enormous potential in health and medical research. They have an ability to differentiate into specialized cells. The potential applications of stem cells are cell–based therapies and in pharmaceutical field as drug testing. Stem cell treatments include new technologies and therapies that aim to replace damaged tissues and cells in order to treat disease or injury. In recent years, there has been an explosion of interest in stem cells, not just within the scientific and medical communities but also among politicians, religious groups and ethicists.

Unfortunately, there are several challenges faced by researchers that must be overcome before stem cell therapies can become a successful reality for those suffering from disease. A major difficulty that scientists continue to encounter is the identification of stem cells in adult tissues. Identification and isolation of stem cells from tissue and their differentiation into the desired cell types is difficult. Transplanted stem cell differentiating into the wrong type of tissue is yet another concern.

Embryonic stem cells derived from the fetus for therapeutic application also have triggered a massive challenges such as ethical conflict, regulatory issue, translation into the clinic and legal constitutional issue. Another challenge is that the cells are rejected by the recipient's immune system. Stem cell safety always must be scrutinized and assessed throughout the entire treatment or research process. Guidelines and strategies must also be developed to ensure that every aspect of stem cell use - from identification and isolation of stem cells to stem cell transplantation is stringently coordinated.

For this, manufacturing challenges such as manufacturing processes must adhere to current good manufacturing practice (cGMP) and related regulations. Additional challenges including obtaining reliable preclinical data in an acceptable model, designing appropriate clinical trials and developing a satisfactory petition to the relevant regulatory authorities. Currently, researchers and clinicians working on to eventually move beyond these challenges.

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Cassia surattensis flower as potential inhibitor for *Aspergillus niger* infection

Sumathy Vello[100]

Infectious disease is one of the commonest health problems in developing countries with the rise of antibiotic resistance. Invasive aspergillosis (IA) is causing high mortality and morbidity rate among immunosuppressed patients. *Aspergillus niger* is a causative agent causing IA. Therefore, there is an urgent need for novel antifungal therapy to control the fatality rate in the population.

Opting on medicinal plants has become the current trend amongst scientific investigators as plants are rich with biological activities. *C. surattensis* flower was studied to identify this organ as a potential antifungal agent. The MIC value was 6.25 mg/mL and the antifungal activity of *C. surattensis* flower against *A. niger* was further studied with systemic aspergillosis model. Qualitative measurement of fungal burden suggested a reduction pattern in the colony forming unit (CFU) of lung, liver, spleen and kidney for the extract treated group.

Galactomannan Index (GMI) increased steadily in the negative control as the study prolonged. Mice treated with flower extract showed a reduction pattern in fungal burden and GMI after Day 7 onwards although the reduction size was smaller compared to the positive control mice which received Amphotericin B. This was supported with histology analysis whereby sections from the flower extract treated mice featured recovery of the injured tissue for all the examined organs compared to severe damage observed in the negative control by end of the study.

By the last day, conidia infection reduced in liver and was cleared from lung and kidney in positive control. As a conclusion, *C. surattensis* flower could be a promising candidate in the pharmaceutical industry for new antifungal drug discovery using plant as the main ingredient.

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Ethics in Medical care

Dr Pratap Kumar[101]

The concept of non-maleficence is embodied by the phrase, "first, do no harm," or the Latin, *primum non nocere*. Many consider that should be the main or primary consideration (hence *primum*): that it is more important not to harm your patient, than to do them good.

The five basic ingredients of Good Medical Practice are
Professional Integrity, Communication Skills, Ethical Behaviour, Treating Patients with Dignity, and being a Team Player.

The Ten Golden rules of good medical practice

1. Practise with Kindness, Ethics and Honesty.
2. Upgrade Professional Knowledge and Clinical Skills.
3. Maintain good Patient Records.
4. Maintain good Communication with Patients and Relatives.
5. Maintain Doctor-Patient Confidentiality.
6. Allow Second Opinion and Referral to Colleagues.
7. Maintain good Working Relationship With Colleagues.
8. Be conscious of Cost of Healthcare.
9. Avoid Publicity, Self-promotion and Abuse of Position.
10. Be a Partner in promoting Global Health.

Seven pillars of wisdom has to be followed by all of us.
They are:

1. **Humility.**
2. **Discipline-**Training to improve strength and character.
3. **Integrity-** Doing what is right even when nobody is looking.
4. **Courage -** Doing what is right in the face of fear.
5. **Perseverance-** Unwavering determination
6. **Passion-** Energetic and unyielding devotion to a cause
7. **Stewardship -** Generous guardianship of what we have been given.

"Attitudes - the need of the hour for a medical practice"
A study attributed to Harvard University found that when a person gets a job or a promotion, 85% of the time it is because of his attitude, and only 15% of the time because of intelligence and knowledge of specific facts and figures. It is surprising that almost 100%

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of education money go to teach facts and figures, which accounts for only 15% of success in life!
ATTITUDE is the most important word in the English literature and one's life for success. It applies to every sphere of life, including one's personal and professional life. A student be good without the right attitudes? The foundation of success regardless of one's chosen field, is ATTITUDE.

Our attitudes determines how we look at a set back. To a positive thinker, attitude can be a stepping stone to success. To a negative thinker, it can be a stumbling block. TOP quality people are people with character, integrity, good values and positive attitudes.

The triple "E's" of education of attitudes are:

1. Environment
2. Experience
3. Education

The role of a educator is vital. A teacher affects eternity. The ripple effect is immeasurable. Education with attitude emphasized, ought to teach us not only how to make a living but also how to live.

We need to teach our students the following, for a better attitudes in life. We need to emphasise how to be caring, confident, patient and humble. A person with a positive attitude is like a fruit of all seasons. He or She is always welcome!

1. Steps to be taught for all to have the attitude change are:
2. Change focus, look for the positive
3. Make a habit of doing it NOW
4. Develop an Attitude of Gratitude
5. Get into continuous education programs
6. Build a positive self esteem
7. Stay away from negative influences
8. Learn to like the things that need to be done
9. Start your day with something positive

The doctor is at all times expected to practice good medicine, exhibit the norms ofgood clinical practice and present himself and should give the relevant options when discussing treatment, and the limitations and possible complications.

To conclude I would like to quote the following:
A. The International Code of Medical Ethics (Excerpts)

- "At a time of being admitted as a member of the Medical Profession:
- I solemnly pledge myself to consecrate my life to the service of humanity:
- I will practice my profession with conscience and dignity;
- The health of my patient will be my first consideration;

- I will maintain by all means in my power, the honour and noble traditions of the medical profession;
- I will not permit considerations of religions, nationality, race, party politics or social standing to intervene between my duty and patients.
- I will maintain the utmost respect for human life from its beginning even under threat, and I will not use my medical knowledge contrary to the laws of humanity."

B. The Declaration of Geneva (Excerpts)

- I solemnly pledge myself to consecrate my life to the service of humanity.
- I will practice my profession with conscience and dignity.
- The health of my patient will be my first consideration.
- I will respect the secrets which are confided in me.

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"The Evolution Of Medical Teaching – Are We On The Right Track?"

Dr. Raghavendra Bhat [102]

God is believed to be the first medical teacher in ancient Greece(Chiron – Human – Horse) and India(Brahma). Practical knowledge was given to the sons of teachers or desciples. Course lasted 6 years. First medical school (Hippocrates) started in 5 century BC. Alexandria medical school became famous in 3 rd century BC.

Paper was used for the first time in medicine in 794. In 1098 Pharmacy became independent from Medicine(Al Beruni – Arabia). A code of for the physician was suggested in Islam. .

!n 1505, Royal College of Scotland was born followed by the founding of universities at Scotland St. Andrews(1410), Glassgow(1451), Aberdeen(1494), Edinbergh(1583). Regular classes were started in Netherlands teaching praxis medicine at 8AM and Hippocrates prognostius at 2 noon.

In 1691, America's autopsy expert Governor Henry Slaughter became famous. Schools of Medicine at Philedelphia (1765) and Harvard (1783) stated at the USA.

In 1745, the Surgeons segregated from the barbers (England). Lancet stared reporting medical lectures. MRCS started in 1800. The course fee was 30 to 50 pounds in 1824. The later events to follow in England were – GMC recognition (1858), Organization of units (1912), Advancement of PG education (1921).

The bedside teaching started at Vienna (18C). Practicals were open only to students with sufficient theory attendance. Clinical viva voce started in 1757 when the bedside teaching became an integral part. Bedside examinations were introduced in 1785.

17th and 18th centuries saw standardization of medical education in France. The number of students from 20/year increased 70 times at the same time. Training in surgery involved 6 years of training and 4 weeks of examinations. Royal college of Physicians was set up in 1778.

In 1786, medical and hospital services were separated in Russia. In 1863, law gave "autonomy" to Russian universities.

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Jon Morgan at Edinbergh in 1765 started organized study of Medicine in UK. In the 18th century, the Medicine at Britain vastly improved and at America progressively declined.

In 1849, Medical school at Michigan started paying salary to the teachers. In 1893, Johns Hopkins started. In 1900, library was set up in France. Museum was set up by Duyputren.

In 1901 obligatory internship under another physician started(at Germany) . Von Muller started Grand lectures. Doctoral thesis was started to encourage learning through reasoning. Student numbers increased from 3000 in 1830 to 32000 in 1923. 1870 saw selection of faculty at Johns Hopkins based on excellence – Osler, Halsted and Kelly were examples. German influence and books dominated in USA –Bilroth (Medicine) and Rudolf Virchow (Pathology).

Private funding helped improve medical education AMA - NY(1946), Philedelphia (1947). In 1930, structured, supervised internship and graduate residency programmes started which were later approved by AMA. In 1950 NRF (National Research Foundation) reduced mortality and "all but conquered" infections(meningitis, Pneumonia, Tetanus due to Penicillin and Sulfas). The number of faculty, interns and residents increased from 1949 – 59. In 1953 the curriculum was structured "around the scientific core" deleting what was archaic. Flexner report(1955) based on analysis of 155 canadian medical schools paved way for modernization and was accepted well by many new colleges.

By 2015 the word body of knowledge would double every 35 days! The medical education moved from practical experience based training to evidence based raining. The technology moved in learners being "digitally naïve" and teachers "digital settlers" Digitalized teaching will have "digtal natïve "learners and teachers who are "digital settlers" who are not "born digital". Information will have new learners ("digital native"). New instructional technologies wikis, podcasts, virtual learning, environment, blogs and other online tools will be the norm. Face to face learning will be promoted. Allocation of resources, support and recognition of the faculty will become basic necessities. Harvard saw formation of medical educators. Stanford saw good faculty development programmes. Human Genome Project which helps understand involved risk of disease and future of drugs and tissues Small group learning , OSCE (Observed Structured Clinical Examination) PBL is already useful in teaching .

Thus, medical education moved from practical experience based training with intimate teacher student relationship to evidence based teaching. Then the technology moved in. Now with digitalization and internet based technologies gaining importance newer modalities of teaching like OSCE, PBL, and small group learning is becoming popular.

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Telemedicine And Trends In Technology

Wing Lam[103]

Telemedicine refers to the use of information and communication technologies to deliver clinical care to patients virtually at a distance. Applications of telemedicine include interactive telemedicine where medical practitioners use technologies such as synchronous 2-way video to interact with patients, and remote monitoring where monitors allow patient data to be captured, recorded and assessed in real-time.

One of the most significant technology trends is that of mobile computing. Mobile computing includes a wide spectrum of technologies including smartphones and wearable computers. With smartphones, we are beginning to see a slew of health and fitness applications (or mobile "apps"). Sports manufacturer Nike for example, embeds monitors in its sports shoes that allow an individual to track the distance they have walked or run. Coupled with a smartphone app, individuals can systematically track their performance over a period of time.

Apple, the leader in consumer technology, plans to release a new health app as part of its next mobile OS iOS8. This signals a new era in which health data will be collected at the user level, which can then be made accessible to other telemedicine applications.

Conclusion

The accelerated trend in mobile computing, as signified by smartphones and wearable computing, presents many new opportunities for telemedicine. Health data can be collected in real-time, offering medical practitioners new ways to assess the wellbeing of their patients.

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Management of Dengue – What lies ahead?

Dr Muruga Vadivale [104]

Dengue, a mosquito-borne viral infection, is a major international public health concern, with nearly half of the world's population, an estimated 2.5 billion people in over 100 countries, at risk. The incidence of dengue has increased 30-fold over the last 50 years, but the true magnitude of the disease burden is not well established.

Dengue viruses are single-stranded RNA viruses belonging to the family Flaviviridae. The 4 closely related but antigenically distinct virus serotypes (1, 2, 3 and 4) are transmitted primarily by Aedes aegyptii mosquitoes

Dengue infection is a systemic and dynamic disease. It has a wide clinical spectrum that includes both severe and non-severe clinical manifestations

There is no specific treatment for dengue disease. The management of DF is supportive with rest, control of fever and pain with antipyretics/analgesics, and adequate fluid intake. Treatment of DHF generally needs correction of fluid loss, correction of electrolyte and metabolic disturbances. Supportive intensive care and fluid management are the mainstays of therapy for severe disease. The case fatality rate (CFR) of DSS may be as high as 50% without supportive therapy, but in most centers with an intensive care unit and therapeutic experience, the CFR is < 1%. Yet due to significant increases in the size of the population the absolute number of fatalities remains high. The total number of dengue fatalities in Asia is 29 times higher than in the Americas (Shepard, 2012 submitted) and the incidence of severe dengue is 18 times higher. (Halstead, 2006) The public health burden on many societies in Asia due to dengue remains very large.

There is currently no licensed vaccine to prevent dengue infection and no specific treatment exists. Preventive measures presently rely on vector control and personal protection measures, which are difficult to enforce and maintain and can be expensive.

The most effective way to control this disease in the future will be through the use of a safe and effective vaccine. Recently the results from Sanofi Pasteur's lead candidate dengue vaccine efficacy study, a very first of its kind, went public. These data show for the first time that a safe and efficacious vaccine against dengue is possible. Overall the vaccine candidate showed an efficacy of 56.5%, with a 67% reduction in hospitalization and 88.5% reduction in DHF. Results of this study in context of the wider Sanofi Pasteur dengue vaccine development will be discussed along with other vaccine candidates.

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