Manipal Alumni Science and Health Journal 2021; 6(2): 4

CASE REPORT

Intestinal Pseudo-Obstruction With Ureterohydronephrosis As A Complication Of Lupus.

Choon Seong Ng[1], Ying Fun Ng[1], Sow Lai Kan[1], Ai Lee Lim[1], Li Chen Fang[2], Mohd Fadli[2],

Corresponding Author Email: drNG@gmx.com

Key words: Intestinal pseudo-obstruction; systemic lupus erythematosus; smooth muscle; case-based education

ABSTRACT

We report the case of a 35-year--old lady followed-up at our Rheumatology unit for a 9-year history of lupus nephritis, who presented with recurrent abdominal pain and diarrhoea for the past nine months. The abdominal radiograph showed dilated small bowel, while computed tomography scan showed diffuse thickening of large and small bowels. Bilateral uretero-hydronephrosis without any evidence of obstructive uropathy was present on imaging. Ileocolic resection was done for presumed intestinal obstruction and the ileocolic biopsy did not reveal any granuloma, malignancy or vasculitis except for non-specific inflammation of cecum. Oesophagoduodenoscopy and colonoscopy were offered in view of persistent unexplained loose stools and abdominal pain. Multiple biopsy specimens of the small and large bowels did not show any remarkable findings. Second relook of the initial hemicolectomy specimen with special actin immunostain on the smooth muscle revealed degenerative changes of the muscularis propria. Intestinal pseudo-obstruction was diagnosed. Smooth muscle dysmotility could be the underlying pathology of this patient presentation. The patient responded well to intravenous immunoglobulin. It is potentially reversible with prompt recognition. Long term prognosis of this rare entity is, however, varying.

[1] Rheumatology Unit, Department of Medicine, Hospital Pulau Pinang, Malaysia.
[2] Gastroenterology Unit, Department of Medicine, Hospital Pulau Pinang, Malaysia.

INTRODUCTION

Chronic diarrhoea is defined as loose stools; increase in stool frequency or urgency for a duration of more than 4 weeks [1]. It is a very common problem affecting about 5% of the population from all walks of life. Most people choose to ignore the symptom unless it is associated with other cluster of red-flag symptoms which includes bleeding, weight loss, and frequent abdominal pain or accompanied with other systemic diseases. Having said so, the differential diagnoses of chronic diarrhoea are broad, including irritable bowel syndrome, diet- or drug-related, inflammatory bowel disease, neoplasia, endocrine-related or post-surgical related and the list goes on [2-3].

Here, we reported a case of intestinal pseudo-obstruction in a lady with Systemic Lupus Erythematosus (SLE) who had a right hemicolectomy done previously during her first presentation, however, continued to have unresolved intermittent abdominal pain and unremitting episodes of diarrhoea for 10 months. She had undergone multiple serial CT imaging as well as lower endoscopy before she was diagnosed and treated for intestinal pseudo-obstruction. Although this is a rare case, it is highly important not to be missed for the benefit of the patients per se.

Chronic intestinal pseudo-obstruction denotes recurrent or continuous symptoms and signs of intestinal obstruction but there is no obstructing mass or structure that can be detected. The symptoms of intestinal pseudo-obstruction are non-specific and may vary in presentation and severity. If undiagnosed, patients with this condition may suffer from bacterial infections, malnutrition, and muscle problems in other parts of the body such as the urinary bladder. Thus, chronic intestinal pseudo-obstruction needs to be considered as one of the differential diagnoses in debilitating chronic diarrhoea especially when there are concomitant underlying systemic illnesses, especially autoimmune related.

CASE PRESENTATION

A 35-year-old lady had been diagnosed with SLE in 2012 when she presented to a private hospital with cutaneous involvement, alopecia, arthritis, presence of antinuclear antibodies with the positive search for ds-DNA antibodies. She then had visited different hospitals and defaulted treatment subsequently. She had SLE flare in 2014 and was diagnosed with lupus nephritis treated with steroid, mycophenolate mofetil (MMF) and cyclosporine that were interrupted a few months later due to non-compliance and frequent bouts of infection requiring hospitalisation. She was initiated on regular haemodialysis in August 2019 as a result of disease progression from lupus nephritis.

In March 2020, she developed acute abdominal pain and distension associated with vomiting and diarrhoea for two weeks. The distension occurred few hours post-prandial and was relieved by a bowel movement. She was stressed with her erratic bowel habits, more than 10 times a day with minimal stool admixed with mucous but no blood seen. She

denied any constitutional symptoms or nocturnal diarrhoea. She presented with no clinical signs of lupus activity. At that time, her SLE medication consisted of prednisolone 7.5mg daily which was at tapering down regime. Per abdominal examination revealed moderate ascites without any organomegaly.

An abdominal CT scan revealed moderate ascites with small bowel dilatation with segments of mural thickening. Due to persistent severe abdominal pain with features suspicious of intestinal obstruction, exploratory laparotomy with a right ileocolic resection was performed. Intra-operative findings revealed gross thickening of the ileum, caecum and ascending colon with no definite lesions were found. The HPE showed features that are consistent with typhlitis. She was then started on 0.5mg/kg prednisolone and completed a course of antibiotics before discharge.

Nonetheless, she still had a similar presentation during follow up in May 2020, however was able able to tolerate the symptoms much better. Her prednisolone was tapered to the dosage of 5mg daily and continued as maintenance therapy. Unfortunately, she had recurrent admissions to the ward from October till December 2020 (twice/month) for severe dehydration secondary to severe acute gastroenteritis. She was then referred to a gastroenterologist for further assessment where both upper and lower endoscopy was done and revealed no remarkable findings. She then had even been re-challenged with high dose prednisolone and mesalazine as per the inflammatory bowel disease regime, yet her symptoms remained the same.

In January 2021, she came in with septic shock due to severe gastroenteritis. She appeared weak but there were no postural changes in blood pressure. The abdomen was distended with gross ascites and numerous surgical scars seen. There were only a few old vasculitis marks seen at the palm and plantar area. Other systemic examinations were unremarkable. Laboratory tests showed normal white cell and platelet counts with normochromic normocytic anaemia (haemoglobin 9.6 g/dL). Her electrolytes and liver enzymes were within normal range except for raised urea/creatinine and low albumin level - 29g/dL. Infective marker C-reactive protein was normal on the day of her presentation. Her C3/C4 - 0.27IU / 0.05IU were low as her previous baseline. Serum lactate remained persistently low throughout her hospitalisation.

An ultrasound abdomen followed by CT of the abdomen was done which showed gross ascites with diffuse thickening of small and part of the large bowels, presence of target water sign as well as bilateral hydroureter with the thickened wall. A pigtail peritoneal drain was inserted and the analysis suggested serum ascites albumin gradient (SAAG) of 1g/L with 100 mononuclear cells seen. Other cultures were negative. A repeated upper endoscopy showed gastritis with duodenitis, and colonoscopy showed aphthous ulcer at the terminal ileum with features of rectosigmoid colitis.

All preliminary investigations including laboratory blood tests, as well as all invasive tests, have ruled out tuberculosis colitis, inflammatory bowel disease and other opportunistic infections.

She was managed by a multidisciplinary team due to an unresolved and complicated condition. In view of her immunocompromised state, she was rechallenged with anti-tuberculosis treatment, in addition with intravenous hydrocortisone 100mg TDS and concomitantly given intravenous piperacillin/tazobactam and metronidazole to cover for GI sepsis. She was kept nil by mouth and later started on intravenous total parenteral nutrition.

A second opinion was sought from a GI-related pathologist on the HPE of the terminal ileum, caecum, small and large bowels from the previous surgery in March 2020 together with a biopsy from recent endoscopy. The limited right hemicolectomy specimen in March 2020 was reported as degenerative leiomyopathy with possibility of concomitant lymphocytic enteric ganglionitis and biopsy from the most recent endoscopy showed no significant pathology.

Based on the clinical presentation from March 2020 till January 2021- persistent and unremitting abdominal pain with chronic diarrhoea concurrent with the findings from the latest CT scan of hydroureter and the HPE report, she was treated as SLE-related intestinal pseudo-obstruction with the possibility of muscle damage involving both gastrointestinal tract and bladder. A 5-day course of intravenous immunoglobulin was given and she showed clinical improvement since then. She was discharged home well after four weeks of hospital stay.

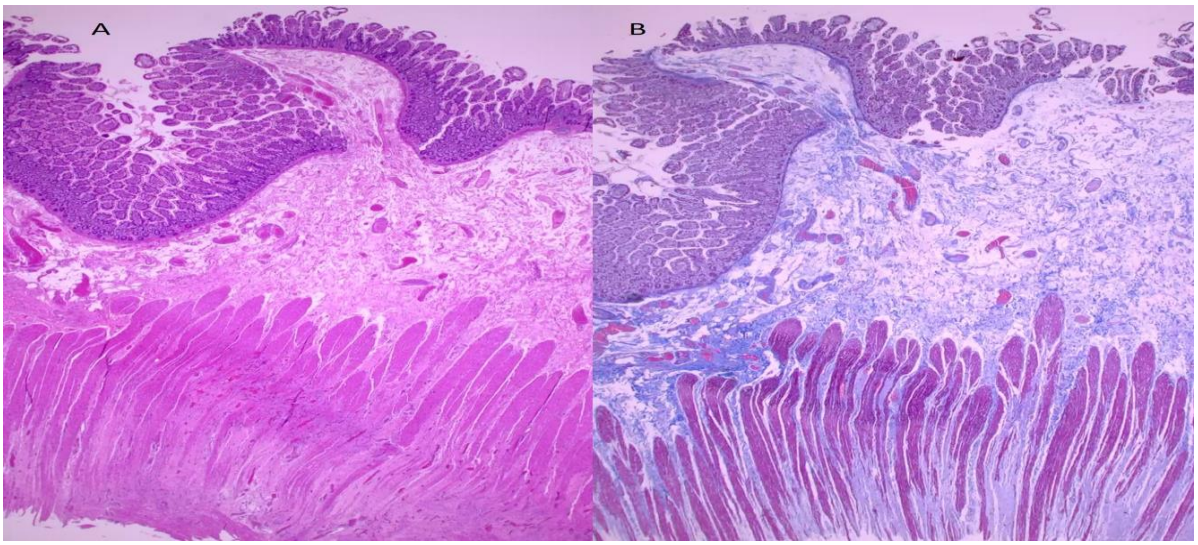

Figure 1: *Full thickness bowel wall displaying intact mucosa, muscularis mucosae and submucosa. Degenerative changes of the muscularis propria with fibrosis/hyaline change, highlighted by Masson trichrome stain (B). (A: H&E & B: Masson trichrome stain, x12.5 magnification).*

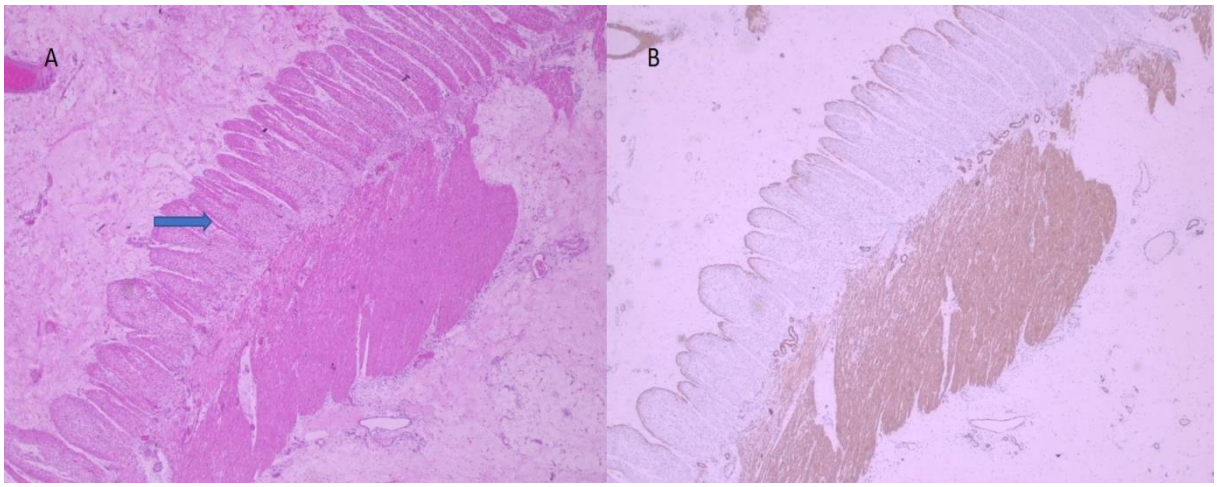

Figure 2: *Degeneration of the inner circular layer of the muscularis propria (A, arrow) with loss of Smooth Muscle Actin(SMA) expression on immunohistochemistry (B) x40 magnification H&E and SMA immunostain.*

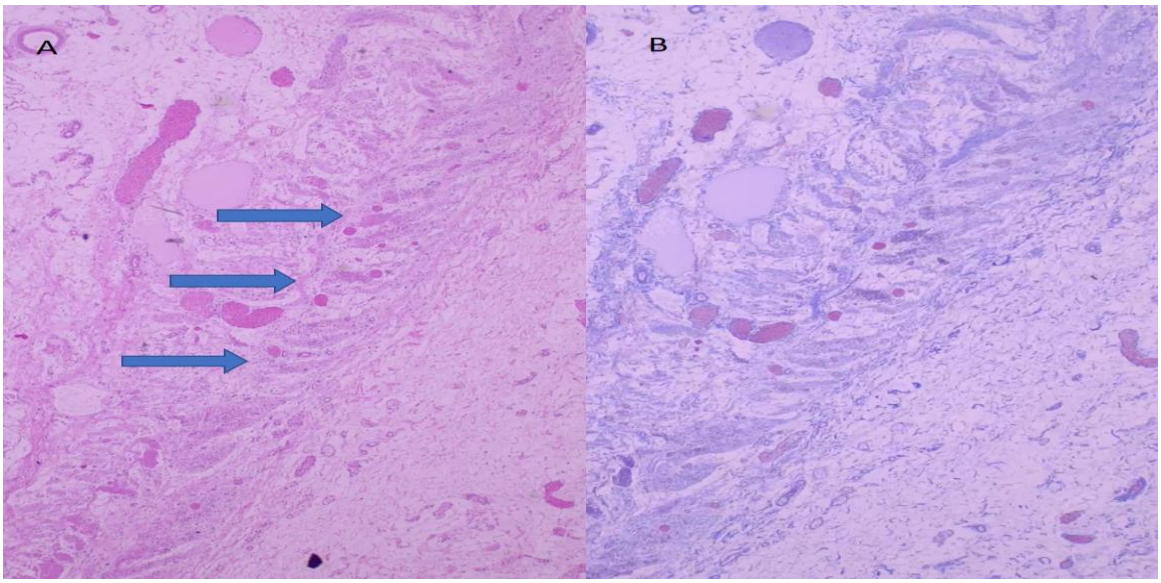

Figure 3: *Complete degeneration of both layers of the muscularis propria at the ileo-caecal junction replaced by loose fibrosis on Masson Trichrome stain (A; H&E and B ; Masson Trichrome stain, x40 magnification)*

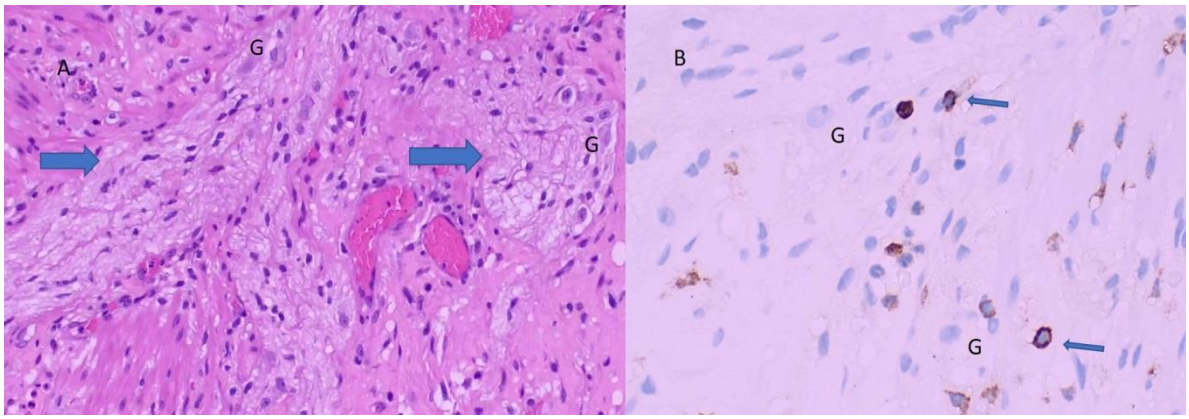

Figure 4: *Lymphocytic enteric ganglionitis. Intermyenteric nerve bundles (arrows) with presence of ganglion cells (G) [A; H&E x40 magnification]. B; Lymphocyte common antigen (LCA) immunostain highlighting presence of lymphocytes (arrows) within nerve bundles close to ganglion cells(G). (x400 magnification).*

DISCUSSION

Approach to chronic diarrhoea needs to be proper and systematic. A good history taking will be able to deduce the pattern of loose stools and aetiology of chronic diarrhoea. Be it functional or organic cause, chronic diarrhoea may affect our quality of life in the long run if left unattended. In other words, if the cause remained unfound yet the symptoms persist, perhaps further invasive procedure such as endoscopy is indicated. Bear in mind, chronic diarrhoea may be the premature symptoms of some chronic illness that may be treated successfully if detected early [1-4].

Back to the case, the middle-aged lady had remitting unresolved diarrhoea with intermittent abdominal pain for 10 months despite she had had a right hemicolectomy during her first presentation. With her background history of SLE, it is of utmost importance to consider lupus enteritis, ischemic colitis, infective colitis, inflammatory bowel disease, protein-losing enteropathy or even post-surgical related diarrhoea such as short gut bowel syndrome as the cause of chronic diarrhoea. Having said so, the thorough investigations in this case are very time-consuming, thus most of the management given will be supportive at any given time.

Chronic intestinal pseudo-obstruction is not easy to be diagnosed. There are other differential diagnoses that need to be ruled out at the same time which are also equally life-threatening if left undiagnosed. For instances, CMV colitis, TB colitis and ischemic colitis resembles the clinical presentation of the case above where she had underlying SLE and requires long term immunosuppressive therapy. Hence, her symptoms seem to be more likely contributed by infective cause rather than other causes. Nonetheless, whether or not an empirical therapy is to be instituted based on what has been deduced, risk of drug-induced side effects or other unforeseen complications need to be weighed against its benefits.

SLE-related intestinal pseudo-obstruction is a rare complication of lupus. It has been postulated that the clinical syndrome is likely associated with smooth muscle dysmotility of the gastrointestinal and genitourinary tracts, with the definite mechanism remained unknown, proposed mechanisms for smooth muscle damage are myogenic, neurogenic and vasculitic processes. In this case, specimen sent was interpreted as normal histology repeatedly due to the pathology is deeper in the smooth muscle layers and thus most mucosal biopsies are often normal and show no specific pathology. If the diagnosis remained unclear, one needs to consider ordering manometry to look for oesophageal aperistalsis, delayed gastric emptying, decreased lower oesophageal sphincter pressure, and hypomotility of the stomach and small intestines.

Lupus enteritis is also often confused with intestinal pseudo-obstruction. However, they are both different entities as lupus enteritis is due to the ischemia secondary to vasculitis or vascular thrombosis. CT scan remains as gold standard for diagnosing lupus enteritis. The presence of the three classic patterns of lupus enteritis, namely (1) bowel wall

thickening greater than 3 mm, also known as target sign, (2) engorgement of the mesenteric vessels, coombs sign, and (3) increased attenuation of mesenteric fat can also be seen in intestinal pseudo-obstruction. In this patient, the diagnosis of SLE-related intestinal pseudo-obstruction was made based on the presence of concurrent urinary tract abnormalities, evidenced by the CT imaging as well as based on histology reported by GI-pathologist [5].

ACKNOWLEDGEMENTS

We thank Datin Dr Nik Raihan Nik Mustapha for her valuable reports on our histopathological specimens.

DECLARATION OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

CONSENT FOR PUBLICATIONS

Informed consent was obtained from the patient for publication of this case report including publications of images.

REFERENCES

1. Arasaradnam RP, Brown S, Forbes A, et al. Guidelines for the investigation of chronic diarrhoea in adults: British Society of Gastroenterology, 3rd edition. Gut. 2018;67(8):1380-1399.
2. Schiller LR, Pardi DS, Sellin JH. Chronic Diarrhea: Diagnosis and Management. Clin Gastroenterol Hepatol. 2017;15(2):182-193.e3.
3. Ming-Jong Bair, Huan-Lin Chen, I-Tsung Lin, Chin-Hsien Lee, Wen-Hsiung Chang, Shou-Chuan Shih. A Rare Case of Chronic Diarrhea in an Elderly Male. International Journal of Gerontology, 2009;3(2):122-125.
4. Adler, Brittany L; Timlin, Homa; Birnbaum, Julius. Lupus intestinal pseudo-obstruction and hydronephrosis. Medicine, 2019;98(28):e16178.
5. Chng HH, Tan BE, Teh CL, Lian TY. Major gastrointestinal manifestations in lupus patients in Asia: lupus enteritis, intestinal pseudo-obstruction, and protein-losing gastroenteropathy. Lupus, 2010;19(12):1404-13.