ABSTRACT

Introduction: Small bowel obstruction (SBO) is a condition with many well-recognized common causes and a distinct set of symptoms, including constipation, vomiting, and abdominal distension. Recent developments in both imaging modalities and minimally invasive techniques have meant that patients can be more appropriately selected for surgical intervention and that common causes of SBO can be readily identified. Despite these advances, it must be acknowledged that rare causes of SBO are still causing a diagnostic dilemma.

Case Report: We are presenting a rare cause of a 45-year-old lady with mechanical bowel obstruction leading to intestinal gangrene caused by a huge uterine fibroid.

Conclusion: It is essential that rare causes of bowel obstruction are identified and presented to facilitate their recognition in future to reach better patient’s outcome.

Keywords: Computed tomography (CT) scan, Fibroid, Leiomyoma, Small bowel gangrene, Small bowel obstruction

INTRODUCTION

Leiomyomas (fibroids) are benign smooth muscle tumors of the uterine myometrium. They are symptomatic in 25% of patients; they can cause significant morbidity, including heavy menstrual bleeding and pelvic pressure. Rare complications of fibroids exist, and here we present a patient with SBO caused by a large uterine fibroid. Surgery remains the mainstay of treatment for symptomatic patients [1].

Small bowel obstruction can lead to bowel ischemia, perforation, peritonitis, and sepsis, with prolonged bowel obstruction, the intestine continues to dilate, thus increasing the luminal pressure. As this pressure continues to rise, it exceeds that of the local venous drainage system and bowel edema and hyperemia result. Further pressure increases compromise the arterial supply to the bowel and ischemia results, eventually progressing to perforation.

We are presenting a case of a patient who had bowel obstruction complicated by intestinal gangrene secondary to a huge uterine fibroid.

CASE REPORT

A 45-year-old female who presented to Acute Admissions Unit with one day duration of diffuse worsening lower abdominal pain, associated with several episodes of vomiting, last bowel motion was 48 hours ago, past medical history included heavy periods and intermenstrual bleeding, atrial fibrillation, and asthma.

General examination revealed high body mass index (BMI) (140 kg), she was a pyrexial with a blood pressure of 198/106 and a regular pulse rate of 79, respiratory rate of 22, and oxygen saturation level of 95% on room air. Abdominal examination revealed palpable three abdominal masses in the lower abdomen, uncomplicated paraumbilical hernia. Digital rectal examination revealed hard feces with no blood, vaginal examination was not possible due to the patient’s obesity.
Laboratory findings revealed white cell count (WCC) 11.9 × 10^3, Hb 15.0 g/dL, C-reactive protein (CRP) 18 mg/L Na+ 138, K+ 4.7, Urea 10.3, creatinine 150 and normal arterial blood gas. Computed tomography scan of the abdomen showed a large, lobulated abdominal mass measuring 26 cm by 20 cm possibly fibroids, composed of heterogeneous endometrial tissue with a focal area of calcification, with dilated small bowel loops indicative of small bowel obstruction (Figure 1).

Mid line laparotomy revealed minimal intraperitoneal serous fluid and a 20 cm gangrenous segment of the ileum possibly due to compression by the large uterus; subtotal hysterectomy as well as small bowel resection was resected and stapled anastomosis was carried out (Figures 2 and 3). The patient had smooth postoperative recovery, was discharged on the fifth postoperative day, and was seen in the clinic after six weeks with no postoperative complications noted.

DISCUSSION

The etiology of SBO varies by age with benign disease being the typical cause in children and adolescents while malignant or adhesive disease is far more common in older patients [2]. Indeed, it has been shown that adhesions account for over half of the cases of intestinal obstruction seen [3]. The sex of the patient should also be taken into account as in our case report.

An erect chest radiograph to exclude perforation and an abdominal radiograph to identify the anatomical level of the obstruction are recommended as first-line imaging in suspected bowel obstruction. Computed tomography scanning is recommended by the Royal College of Radiologists (UK) to examine the site and cause of the obstruction and plan further management. Computed tomography imaging is the most sensitive technique for establishing both the presence of peritoneal free air and the location of a given perforation, yet CT is less sensitive in determining the presence of ischemia [4, 5]. Thus on a number of levels, CT imaging is useful in the diagnosis and management of obstruction.

Gynecological disease and its treatment are a known cause of bowel obstruction; however, there is very little literature available on a specific case, such as the one presented here. The relationship between leiomyomas and bowel obstruction is known to exist, albeit extremely rarely and often indirectly. A previous case report of bowel obstruction caused by a caecal volvulus around large uterine leiomyoma served to illustrate how the complications of leiomyomas may occur [6]. In addition, the potential for leiomyomas to form adhesions, which subsequently cause small or large intestinal obstruction also exists [7, 8].

Despite the known association between postoperative adhesions and bowel obstruction [2, 3], recent evidence suggests that gynecological procedures such as hysterectomy is associated with a relatively low incidence of small bowel obstruction (0.53%; 95% confidence interval 0.32–0.86). Additionally, this is not significantly affected by the route of surgery chosen [9]. Thus, we may anticipate in this case that given the primary cause of obstruction was leiomyoma, the probability of recurrence would be low.
It is clear that uterine leiomyomas may compress the bowel, leading to obstruction, either from their extensive size or as a result of their associated complications as shown in our case as well as another recently published case report [10]. It is essential that leiomyomas are considered as the etiology of intestinal obstruction in female patients who have or have not been previously diagnosed.

CONCLUSION

Huge uterine fibroid is a rare cause bowel obstruction which should be included in the list of causes of mechanical small bowel obstruction. Accurate monitoring and imaging can serve to avoid unnecessary surgical intervention and also reduce morbidity and mortality rates, leading to better patient’s outcome.

REFERENCES

1. Stewart EA. Uterine fibroids. Lancet 2001;357(9252):293–8.
2. Karameranc A, Kurukahvecioglu O, Yilmaz TU, Aygencel G, Aytac B, Sare M. Adult ileal intussusception: An unusual emergency condition. Adv Ther 2006;23(1):163–8.
3. Catena F, Di Saverio S, Coccolini F, et al. Adhesive small bowel adhesions obstruction: Evolutions in diagnosis, management and prevention. World J Gastrointest Surg 2016;8(3):222–31.
4. Li Z, Zhang L, Liu X, Yuan F, Song B. Diagnostic utility of CT for small bowel obstruction: Systematic review and meta-analysis. PLoS One 2019;14(12):e0226740.
5. Stoker J, van Randen A, Laméris W, Boermeester MA. Imaging patients with acute abdominal pain. Radiology 2009;253(1):31–46.
6. Pollard JS, Taylor SE, Wallis G, Panchal SN, Egun AA. Bowel obstruction in the postpartum period as a result of caecal volvulus around a large uterine leiomyoma. J Obstet Gynaecol 2009;29(7):673.
7. Jacobs LB, Bhagavan BS. Intraluminal obstruction of distal ileum caused by a uterine leiomyoma. Mod Pathol 1993;6(2):229–31.
8. Alfaro-Alfaro J, Flores-Manzur Mde LA, Nevarez-Bernal R, Ayala-Yáñez R. Complex laparoscopic myomectomy with severe adhesions performed with proper preventive measures and power morcellation provides a safe choice in certain infertility cases. Case Rep Obstet Gynecol 2016;2016:4705790.
9. Muffy TM, Ridgey B, Abbott S, Chmielewski L, Falcone T. Small bowel obstruction after hysterectomy to treat benign disease. J Minim Invasive Gynecol 2012;19(5):615–9.
10. Sas D, Yang FJ, Agbayani N, Li SF. Small bowel obstruction caused by massive fibroids. Am J Emerg Med 2020.

Author Contributions

Sherif Monib – Conception of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Priyanka Chadha – Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Gary Cross – Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Jamal Zuberi – Acquisition of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

Copyright

© 2021 Sherif Monib et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.
| Access full text article on other devices | Access PDF of article on other devices |
|------------------------------------------|----------------------------------------|
| ![QR Code](image1)                       | ![QR Code](image2)                     |
| ![QR Code](image3)                       | ![QR Code](image4)                     |
Submit your manuscripts at
www.edoriumjournals.com