ISSN 2692-5877
DOI: 10.46998/IJCMCR.2024.47.001173

International Journal of
Clinical Studies & Medical Case Reports

Case Report

Rare Cause of Large Bowel Obstruction: Recto-Sigmoid Compression Due to Urinary Retention

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Received: November 24, 2024 **Published:** December 27, 2024

Abstract

Large bowel obstruction is a common surgical emergency, usually caused by malignancy, diverticular disease, or volvulus. Rarely, urinary retention resulting in significant bladder distension can compress adjacent structures, leading to mechanical colonic obstruction. This report details a 29-year-old male who presented with abdominal distension and bowel symptoms 10 days post-spinal surgery. Imaging revealed a massively distended bladder compressing the recto-sigmoid colon, causing large bowel obstruction. Bladder catheterization drained 2000 mL of urine, resolving symptoms.

This case highlights the importance of considering rare causes of bowel obstruction, such as urinary retention, particularly in patients with pelvic pathologies or neurological deficits. Early diagnosis and simple interventions like bladder decompression can prevent invasive surgical procedures.

Keywords: Large bowel obstruction; Urinary retention; Bladder distension; Mechanical obstruction; Recto-sigmoid compression

Introduction

Large bowel obstruction is a frequent surgical emergency, typically caused by malignancy, diverticular disease, or volvulus. Timely diagnosis is crucial to facilitate prompt treatment, thereby minimizing the morbidity and mortality associated with this condition.

We present a rare case of large bowel obstruction resulting from urinary retention. Significant bladder distension led to external compression of the colon, presenting as a large bowel obstruction.

Case Report

We report the case of a 29-year-old male patient who was the victim of a road traffic accident 15 days before being admitted to the surgical emergency department. His initial radiological examination revealed an unstable fracture of the twelfth dorsal vertebra, for which osteosynthesis surgery was performed. Symptomatology was marked by the onset of abdominal distention and acute urinary retention 10 days after surgery, with the notion of loss of sphincter control. Clinical examination revealed a patient with normal vital signs, a distended and sensitive abdomen, decreased bowel sounds and an empty rectal ampulla.

A plain abdominal film showed significant colonic distension and obstruction with hydroaeric levels **(Figure 1)**. This was followed by an abdominal contrast-enhanced Computed Tomography (CT) scan which showed a large bladder globe protruding beyond the 3rd lumbar vertebra, resulting in bilateral ureterohydronephrosis and compressing the recto-sigmoid junction at the promontory, resulting in distension of the colonic tract with the presence of hydroaeric levels **(Figure 2)**.

Figure 1: Abdominal X-Ray showing colonic distension with hydroaeric levels.

The patient underwent bladder catheterization that drained 2000 ml of clear urine, with marked improvement in abdominal distension and bowel symptoms.

Discussion

A bowel obstruction can be either mechanical or functional,

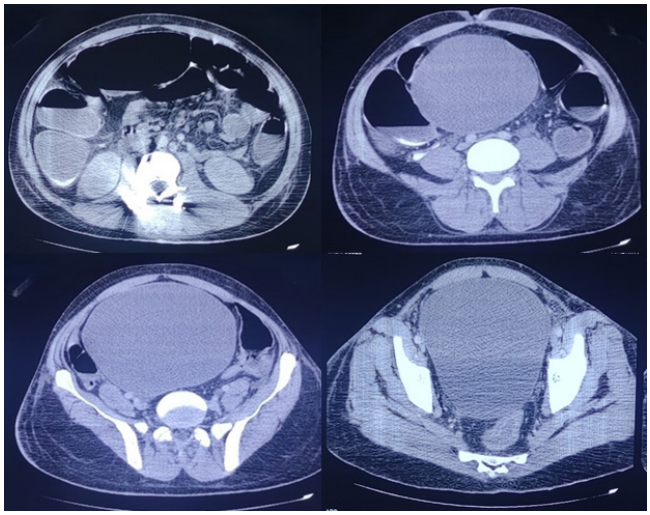

Figure 2: CT aspect of a mechanical colonic intestinal obstruction secondary to compression of the rectosigmoid junction by a distended bladder.

affecting the small or large intestines. It occurs when the bowel lumen becomes partially or completely blocked. The most frequent causes of large-bowel obstruction include malignancy, inflammatory strictures from diverticular disease, and sigmoid or caecal volvulus. The prognosis for large-bowel obstruction is generally favorable if diagnosed and treated early; however, if the obstruction is identified late, left undiagnosed, or if the patient is not properly resuscitated before surgery, morbidity and mortality rates can be high. Therefore, it is crucial to consider less common causes of intestinal obstruction when making a differential diagnosis. Extrinsic obstruction caused by urinary bladder distension is rare, with only a few reported cases in the last 25 years [1].

The bladder is a hollow, muscular organ responsible for storing and expelling urine. Under normal conditions, it can hold about 350 to 400 mL of urine. The lower urinary tract and distal colon share a common embryological origin, resulting in a close anatomical and functional connection. It has been noted that abnormalities in one system can potentially impact the other [2]. While conditions involving both systems, such as dysfunctional elimination syndrome, have been documented, no cases of colonic obstruction caused by urinary system pathology have been reported in children. In adults, however, only a few instances exist. MacGiobuin et al. described a case involving a 72-year-old man with colonic obstruction due to urinary retention secondary to benign prostatic hyperplasia [3]. Another study reported two elderly patients experiencing intestinal obstruction linked to urinary retention [4]. In addition to the compressive effect of a distended bladder, constipation may be exacerbated by the rectovesicourethral reflex. Buntzen et al. [5] demonstrated that as bladder distention increased, anal pressure significantly rose, while rectal motility ceased. This was attributed to the excitatory "vesico-anal" reflex, mediated at the spinal cord level.

Due to the limited space within the pelvis, bladder distension can exert pressure on nearby structures. It has been observed to compress the inferior vena cava [6] as well as the right and left external iliac veins [7]. In some cases, this compression has resulted in the formation of deep vein thrombosis [7]. Hopkins et al. [8] reported elevated pressures in the femoral veins, particularly in cases of urinary retention where bladder capacities exceeded 1000 mL. Patients with leg edema were found to have the highest femoral vein pressures. Similarly, a distended bladder can compress the recto-sigmoid colon, as seen in our patient.

Acute or acute-on-chronic urinary retention is a common surgical condition, especially in elderly men. It is primarily diagnosed clinically, presenting with lower abdominal discomfort, an inability to pass urine, and a palpable pelvic mass that is dull on percussion [9]. In rare cases, diagnosis may be challenging due to a co-existing distended abdomen. Similarly, intestinal obstruction is primarily a clinical diagnosis, supported by radiological investigations [10]. Acute urinary retention can arise secondary to various acute abdominal conditions, including diverticulitis, perforated or ischemic bowel, or an abdominal aortic aneurysm [10]. An episode of acute urinary retention, particularly when associated with elevated blood urea levels, may result in intestinal pseudo-obstruction and ileus [10]. However, urinary retention is rarely reported as a direct cause of mechanical intestinal obstruction.

The initial diagnosis of intestinal obstruction often relies on plain abdominal X-rays, which reveal distended bowel loops and collapsed segments distal to the obstruction. Water-soluble enemas, with sensitivities and specificities of 96% and 98%, respectively, are more effective for diagnosing colonic obstruction. CT imaging, increasingly used for suspected small bowel obstruction, offers 100% sensitivity and specificity, making it the preferred method for determining the obstruction's level, cause, severity, and complications like strangulation, guiding surgical management [11,12].

Conclusion

This case report underscores the need to consider rarer pathologies when evaluating a patient with acute large-bowel obstruction. Recognizing urinary retention as a potential cause of intestinal obstruction could lead to earlier diagnosis and a relatively simple resolution. Additionally, there have been several reported cases of bladder diverticula contributing to colonic obstruction [13].

Financial support and sponsorship: None.
Conflicts of interest: There are no conflicts of interest.

References

1. Beecroft R, Taves DH. Radiology for the surgeon. Case 20. Obstruction secondary to extrinsic compres-sion of the rectosigmoid junction against the sacrum by a distended bladder. Can J Surg, 1998; 4: 102–165.
2. Broadbent V, Gadner H, Komp DM, et al. Histiocytosis syndromes in children: II. Approach to the clini-cal and laboratory evaluation of children with Langerhans cell histiocytosis. ClinicalWriting Group of the Histio-cyte Society. Med. Pediatr. Oncol, 1989; 17: 492–495.
3. Hoover KB, Rosenthal DI, Mankin H. Langerhans cell histiocytosis. Skeletal Radiol, 2007; 36: 95–104.
4. Plasschaert F, Craig C, Bell R, Cole WG, Wunder JS, Alman BA. Eosinophilic granuloma. A different behaviour in children than in adults. J. Bone Joint Surg. Br, 2002; 84: 870–872.
5. Buntzen S, Nordgren S, Delbro D, Hulten L. Anal and rectal motility responses to distension of the urina-ry bladder in man. Int J Colorect Dis, 1995; 10: 148-151.
6. Davis GC, Aronson NE, Moul JW. Inferior vena cava compression due to massive hydronephrosis from bladder outlet obstruction. Tech Urol, 2000; 6: 226-227.
7. Liu D, Torreggiani WC, Munk PL, Ho S, Morris C,

Legiehn G. Iliofemoral deep vein thrombosis seconda-ry to venous compression by a massively distended bladder. Journal of the Hong Kong College of Radiologists, 2002; 5: 43-46.
8. Hopkins WF, Mattens WA, Pierce JM. Increased venous pressure and edema in the lower extremities se-condary to urinary retention. Invest Urol, 1965; 3: 117-121.
9. Hamm R, Speakman MJ. Urinary retention. Surgery (Oxford), 2022; 20(11): 273-275.
10. Winslet M. Intestinal obstruction. In: Russell R, Williams N, Bulstrode C, editors. Bailey & Love's short practice of surgery. 24th edition London: Arnold, 2004; 1186–1203.
11. Cook C, Campbell-Smith T, Hopkins R. The abdominal radiograph: a pictorial review. Hosp Med, 2002; 63: 726–731.
12. Burkill G, Bell J, Healy J. Small bowel obstruction: the role of computed tomography in its diagnosis and management with reference to other imaging modalities. European radiology, 2001; 11: 1405-1422.
13. Akbulut S, Cakabay B, Sezgin A, Isen K, Senol A. Giant vesical diverticulum: A rare cause of defecation disturbance. WJG, 2009; 15(31): 3957.