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Case Report

Large bowel obstruction caused by urinary retention from benign prostate hyperplasia

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ABSTRACT

Although large bowel obstruction is a common surgical emergency, its occurrence due to bladder distention is rarely reported in the literature. We report a case of large bowel obstruction caused by bladder distention secondary to benign prostate hyperplasia in a 67-year-old man. This case demonstrates a grossly distended urinary bladder compressing the rectosigmoid colon against the sacrum, presenting as a complete large bowel obstruction. Management consisted of transurethral urinary catheter insertion, which resulted in complete resolution of the bowel obstruction with drainage of a large amount of urine. Early recognition of the underlying etiology resulted in the expeditious treatment of large bowel obstruction.

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Case report

A 67-year-old bedridden man with left-sided hemiplegia in a medically underserved area with limited access to acute surgical care was admitted to the emergency department with the chief complaint of severe abdominal pain. His relevant past medical history included intracerebral hemorrhage, epilepsy, and appendectomy. He was in his usual state of bedridden but stable health until 1 day prior to the admission when he described gradual onset of severe diffuse abdominal pain associated with constipation and anorexia. Urinary symptoms were presumed absent, which may have been

inconspicuous considering his moderate aphasia due to past intracerebral hemorrhage. The initial episode of abdominal pain lasted approximately 1 hour only to return every few hours in waxing and waning fashion and progressively aggravated throughout the day. His caregivers tried an enema and disimpaction, only to fail in passing any bowel movements and alleviating the symptoms. He was brought to the emergency department and examination revealed a patient in acute distress with a surgical scar in the right lower quadrant, distended abdomen, decreased bowel sounds, hyperresonance to percussion, guarding, and rebound tenderness in all quadrants. His pulse was 156/min, his blood pressure was 159/117 mmHg, his temperature was 36.1 °C (97 °F), and

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Fig. 1 – Frontal topogram from a contrast-enhanced CT of the abdomen and pelvis demonstrates dilated large and small bowel proximal to the sigmoid colon. CT, computed tomography.

his respiration rate was 29/min. Laboratory findings were otherwise normal except for elevated white blood cell count ($22,670/\text{mm}^3$), metabolic acidosis compensated by respiratory alkalosis (pH 7.381, HCO_3^- 16.2 mEq/L, pCO_2 27.9 mmHg), and elevated lactate (106.4 mg/dL), which was consistent with impaired peripheral perfusion predictive of surgical abdomen. The evaluation included a computed tomography scan, which demonstrated colonic distention to the level of the sigmoid colon (Fig. 1). The sigmoid colon showed fusiform tapering at the rectosigmoid junction without mucosal

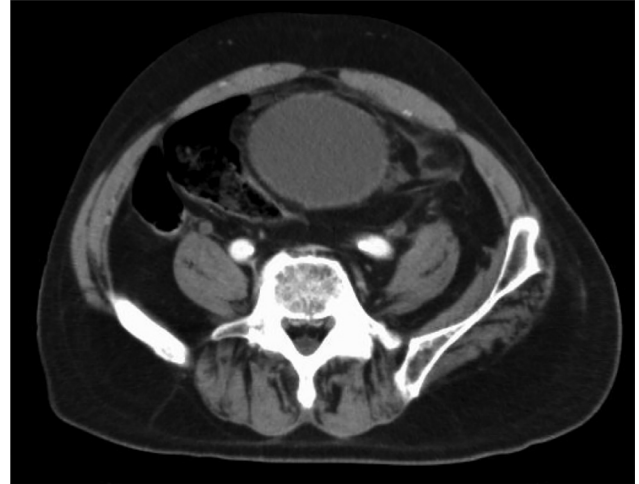


Fig. 2 – Single axial contrast-enhanced CT at the level of the urinary bladder demonstrates a dilated proximal sigmoid colon and zone of transition at the rectosigmoid junction between the urinary bladder and the sacrum. CT, computed tomography.

irregularities, suggestive of extrinsic compression (Fig. 2). In detail, the dilated bladder compressed the rectosigmoid junction against the sacral bone (Fig. 3). The management was a urinary catheterization that resulted in evacuation of 500 mL of residual urine with instant resolution of intestinal symptoms and a passage of intestinal gas. Subsequent laboratory testing showed improvement of metabolic acidosis and improving lactate. Furthermore, the next computed tomography image after the management showed complete resolution of the large bowel obstruction (Fig. 4). Dramatic resolution of the symptoms followed by the management suggested a cause-effect relationship that the over-distended bladder caused the large bowel obstruction. Some follow-on imaging tests confirmed benign prostatic hypertrophy as the underlying etiology. The possibility of neuropathic bladder dysfunction due to intracerebral hemorrhage was also considered as a

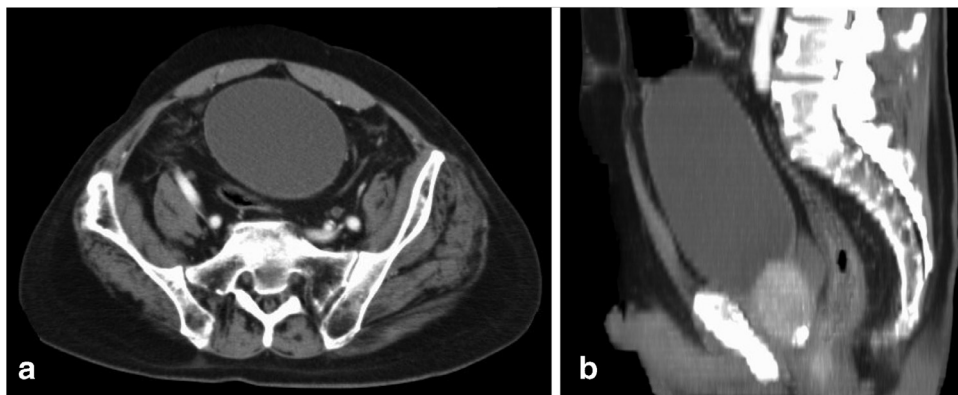


Fig. 3 – Axial imaging shows the dilated bladder compressing the rectosigmoid junction against the sacrum. Sagittal reformats confirm these findings and also demonstrate distal bowel decompression, as well as significant prostatic hyperplasia.

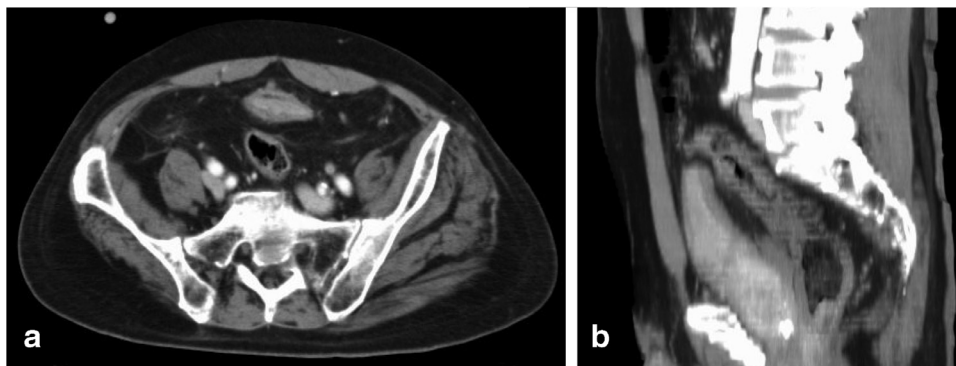


Fig. 4 – Postcatheterization imaging shows decompression of the urinary bladder with resultant resolution of bowel obstruction.

contributing factor. Two weeks after undergoing selective alpha 1 antagonist treatment, the patient succeeded a trial without a catheter, avoiding a transurethral resection of the prostate. Early recognition of urinary bladder distention resulted in the simple treatment of large bowel obstruction in a medically underserved area with limited access to acute surgical care.

Discussion

Large bowel obstruction is a surgical emergency that mandates prompt intervention. Admittedly, its incidence varies among populations; the most common causes are malignancy of the colon and rectum, volvulus, and fibrotic inflammatory stricture from diverticulitis in western countries [1–3]. Large pelvic masses such as distended urinary bladder, adjacent tumor of ovary, pregnancy, and pancreatic pseudocysts are unusual causes of large bowel obstruction [2]. Bryk reported that the bladder has lower intrapelvic fixation and less mobility compared to ovary and uterus, and a markedly distended bladder tends to compress the rectosigmoid colon at the prominence of the sacral promontory, where the anteroposterior diameter of the pelvis is the smallest [4]. In children, congenital and acquired diseases such as volvulus, Hirschsprung disease, and imperforate anus are some of the common causes [5–7]. This condition has a high-morbidity and -mortality rate [8], thus, it is essential to know not only common causes but also distended bladder as part of the differential diagnosis.

The patient described in this case demonstrates rare pathology for acute and complete large bowel obstruction. Although both urinary retention and acute bowel obstruction are common clinical conditions, it is hardly recognized that both conditions occur at the same time and bladder distention contributes to intestinal obstruction manifesting as a surgical abdomen. We are aware several authors have reported similar cases in the literature [1,4,9–18]. One has to remember that bowel obstruction secondary to urinary retention exists in female patients too [14]. Furthermore, Kilincaslan et al reported a similar case of a child [5]. The present case highlights that

urinary bladder distention is a rare but important differential diagnosis of acute intestinal obstruction, and it was of interest in respect that early recognition of the underlying etiology resulted in a simple treatment and favorable prognosis avoiding unnecessary abdominal surgery.

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