Cecal Volvulus with Concomitant Squamous Cell Carcinoma of the Bladder

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Abstract

A cecal bascule is a rare version of an already rare form of intestinal obstruction known as a cecal volvulus and accounts for 0.01% of adult large bowel obstructions. This pathology can arise from both congenital as well as acquired malformations. A concomitant diagnosis of squamous cell carcinoma of the bladder, one of the most uncommon forms of bladder carcinoma, is an even more unlikely event. This case reports a 69-year-old male with a diagnosis of both SCC of the bladder likely precipitating cecal bascule formation. The incidence, treatments, and outcomes for each of these pathologies are discussed to provide an overview of treating patients with two pathologies that are infrequently seen.

Keywords: Cecal bascule • Cecal volvulus • Large bowel obstruction • Bladder carcinoma • Squamous cell carcinoma of the bladder • Radical cystectomy

Introduction

A cecal volvulus is a rare form of intestinal obstruction accounting for 1-1.5% of all intestinal obstructions with type 3 or cecal bascule accounting for 5-20% of all cecal volvuli [1,2]. This malformation presents with high rates of mortality given difficulty in diagnosis. Primary squamous cell carcinoma of the urinary bladder is a rare variant of epithelial bladder tumours as well. These tumours typically present in later stages with a higher overall mortality rate than other forms of urinary malignancy. Management involves resection and chemo/radiation [3]. Here, we present a 69-year-old male with concomitant findings of SCC of the bladder and cecal volvulus formation. This case is significant given the rarity of both pathologies on their own and the unlikelihood of both presenting together.

Case Presentation

A 69-year-old Caucasian male patient presented as a transfer from an outside hospital with one week of abdominal pain, nausea, and emesis. The patient initially presented to the VA where Contrast contrast-enhanced CT scan demonstrated concern for a bladder mass with questionable cecal volvulus formation. The patient did not have symptoms of hematuria or hematemesis. He was noted to have a slight leukocytosis of 10 and the remainder of hematologic parameters were within normal parameters. Physical exam was notable for tenderness in the right lower quadrant without rebound or guarding. His past medical history included hypertension and he had previously undergone an incarcerated inguinal hernia repair 35 years before presentation. The patient had no smoking history. Upon transfer, the patient also noted he had experienced a 20-pound weight loss (Figures 1 and 2).

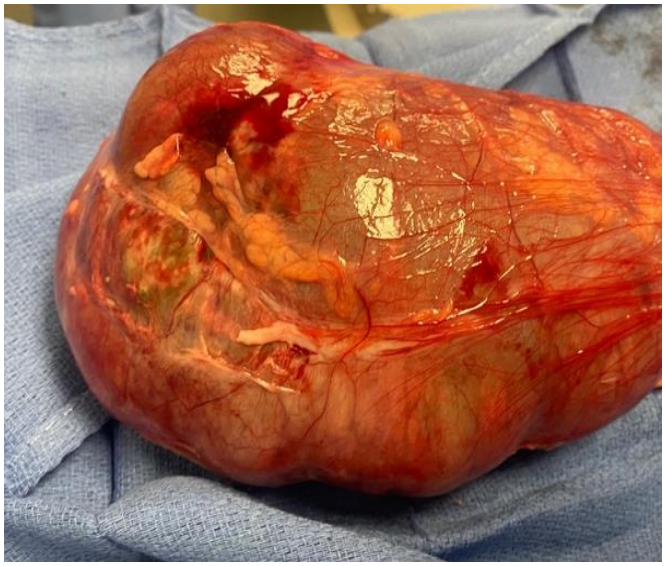

Figure 1. Cecal bascule

Figure 2. Diverticula of the small bowel

Given the concern for cecal volvulus, the patient was taken to the operating room and an exploratory laparotomy, open right colectomy, ileostomy with mucus fistula formation and cystoscopy were performed conjointly with the

Colorectal Surgery service and the Urology service. Upon evaluation of the colon, the right colon had volatilized up into the chest just below the diaphragm and appeared frankly ischemic. The cystoscopy portion was limited due to poor visualization secondary to clot formation within the bladder and subsequently aborted. Further urologic intervention was delayed until Post-Operative Day (POD) [2]. The patient then underwent a repeat cystoscopy and Transurethral Resection of Bladder Tumor. A resectoscope was inserted and a significant amount of old clot was evacuated. Once visualization improved, the tumour was noted on the left lateral side wall located within a diverticulum. The mass appeared sessile and was approximately five cm in size. The patient tolerated the procedure well and his postoperative course was uneventful with ostomy output noted on POD 1 and a successful void trial occurring at POD 3/1. He was discharged on POD 6/4.

Histopathology for the colon specimen was noted to be a section of the colon with transmural acute inflammation necrosis and serositis from the patient's first operation. Final pathology for the bladder specimen demonstrated moderately differentiated squamous cell carcinoma of the urinary bladder, invading lamina propria, grade G2, and size of 2x1.5x03cm in aggregate. Seven weeks post-discharge, the patient underwent a radical cystectomy with ileoconduit and loop ileostomy closure.

Discussion

A cecal volvulus is a rare form of intestinal obstruction with an incidence of 2.8-7.1 million people per year [4]. A cecal bascule is one of the 3 type of variants of cecal volvulus that occurs when the cecum folds upward and anterior without an axial twist [5]. The cecum then becomes a closed-loop obstruction with distension of the cecum, resulting from a patent ileocecal valve inhibiting the backflow of intestinal contents [6]. Predisposition to this malformation is believed to result from a combination of the presence of adhesions as well as a highly mobile cecum. The mobility of the cecum results from failure of the right colon mesentery to adhere to the lateral peritoneum which is known as the embryogenic mobile cecum. This can also occur from previous abdominal operations. Another mechanism contributing to cecal bascule formation is cecum displacement, usually occurring secondary to pregnancy or theoretically from a large mass originating in the pelvis [2,7,8].

Diagnosis of a cecal bascule includes a combination of lab abnormalities and imaging, usually with a combination of abdominal X-ray and Computed Topography (CT) scan. While there is no specific lab value that correlates with the presence of a cecal volvulus, patients will typically present with a leukocytosis [7]. While an abdominal X-ray is the first line of imaging, unlike a sigmoid volvulus with a pathognomonic coffee bean sign, a cecal volvulus will not have a classic X-ray finding. Certain signs including disproportionate distension of the cecum, paucity of gas, air-fluid levels, and gas within the pelvis can be seen with cecal volvulus [2, 9]. Displacement of the cecum can also be seen at times. CT scan is the predominant imaging modality, however its accuracy for findings of a cecal bascule is still limited (figure 3 and 4). A whirl sign is generally seen in other forms of cecal volvulus with the bascule findings including displacement of the cecum into the upper abdomen, a transition zone between the cecum and ascending colon, cecal distension, ileocecal valve location in the right upper quadrant and possible perihepatic fluid collections, right lung collapse or right hemidiaphragm splinting [2,5]. The only method for definitive diagnosis however is an exploratory laparotomy [10].

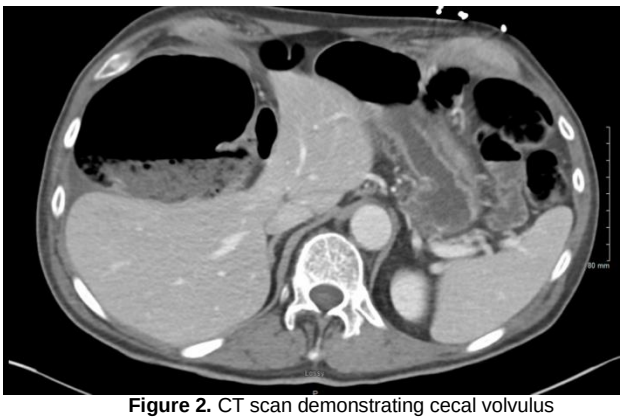

Figure 2. CT scan demonstrating cecal volvulus

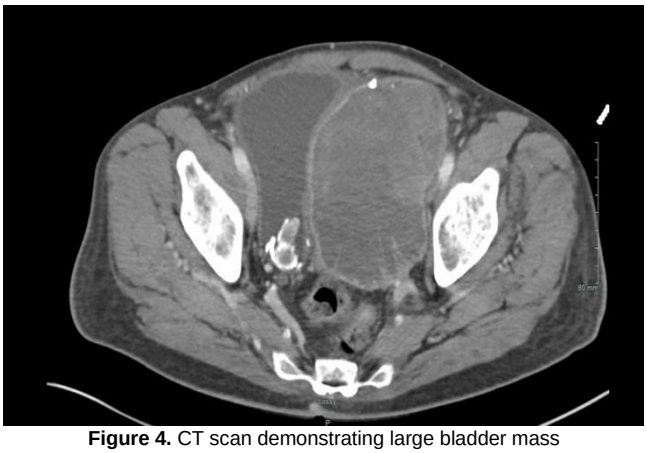

Figure 4. CT scan demonstrating large bladder mass

Management of the cecal bascule includes diagnosis with an exploratory laparotomy and subsequent surgical intervention. Conservative management with non-operative intervention is largely unsuccessful with a 95% failure rate [11]. Reduction of the cecum without further intervention as well as high rates of reoccurrence. Current surgical techniques include reduction with cecopexy or cecetomy.

Squamous cell carcinoma of the bladder can be divided into two subgroups- Bilharzial Squamous Cell Carcinoma (B-SCC) and Non-Bilharzial Squamous Cell Carcinoma (NB-SCC). B-SCC is associated with bilharzial or schistosomiasis infection and is frequently diagnosed in areas where schistosomiasis is endemic such as the Middle East, Southeast Asia and South America. In these areas, B-SCC accounts for 2-30% of bladder tumours. NB-SCC is most common in Western countries, accounting for 2-5% of all bladder tumours. It usually occurs in the 7th decade and major predispositions for formation are bladder irritants causing chronic inflammation including indwelling bladder catheters and/or UTIs [3, 12]. Patients will usually present initially with hematuria. Prevention is mostly linked to minimizing irritants. Many NB-SCCs are generally diagnosed at later stages and present with an overall poorer prognosis with most patients dying within 3 years of diagnosis and 5-year survival rates of 33-48% [3]. Management includes surgical resection, especially at earlier stages. SCC of the bladder has been described as a chemo-refractory disease process and as of now, there are currently no clear recommendations on utilizing chemotherapy or radiation treatments for SCC of the bladder due to the rarity of the disease. Some clinical observations using multimodal systemic treatment have been noted, however [13].

Conclusion

Squamous cell carcinoma of the bladder and cecal volvulus are both uncommon pathologies. The combined finding of both occurring together is even rarer. Understanding each pathology will assist in guiding patient management.

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