

Retained pellets presenting as urinary bladder calculi in Crohn's disease - A rare case report

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Introduction :

Based on estimates from 2010, India appears to have the largest disease burden among Southeast Asian nations, with an estimated 1.4 million people living with IBD [1]. In addition to the continuing aging of common cases, the percentage of younger people who are newly infected with the disease has been steadily increasing. Treatment modalities must be optimized because inadequate disease management might result in significant morbidity and functional capacity impairment [2].

5-Aminosalicylic acid (5-ASA; mesalamine/mesalazine) is still the preferred medication for treating most IBD patients. 5-ASA reduces inflammation by blocking the enzymes lipoxygenase and cyclooxygenase, which prevent leucocytes from migrating to inflammatory areas. 5-ASA possesses antioxidant and free-radical scavenging qualities, and it can also activate peroxisome proliferator-activated receptor- γ [3-5].

Crohn's disease is one of the most important chronic diseases that affect adults [6]. An overactive immune response can lead to intestinal problems including fistulae in Crohn's disease (CD), a chronic inflammatory illness of the gastrointestinal system. Approximately one-third of CD patients have been documented to have perianal, enterovesical, colovesical, enterovaginal, rectovaginal, and enterocutaneous fistulas [7]. Enterovesical fistulas (EVFs) are uncommon; in individuals with CD, their incidence has been found to be between 2 and 5%. Frequent UTIs, fecaluria, and pneumaturia are characteristics that set EVF apart from other fistulas. EVF is a channel that connects the colon and bladder [8]. Abdominopelvic computed tomography (CT) and cystoscopy are useful diagnostic and surgical planning techniques, but the diagnosis is typically challenging [9]. While gastro-intestinal symptoms are the common presenting features of Crohn's disease [10], lower urinary tract symptoms are quite uncommon. However, it is

rare for these to occur in the absence of significant intestinal manifestations [11]. We report a case of Crohn's disease in an elderly male presenting as urinary bladder calculi which on laparotomy revealed to be a rare finding.

Case report:

60 years old male presented to our outpatient department with dysuria, low grade fever(99F) and increased frequency (more at nighttime) for 1 month. He was diagnosed to have Crohn's disease in May 2023 and has been on medical management since then with Aminosalicylates (Tab. Mesalamine).

Treatment:

He was evaluated with routine blood investigations, USG abdomen and Uroflowmetry. Blood investigations showed low haemoglobin, elevated total counts with normal renal and liver function. USG abdomen revealed bilateral normal kidneys, bladder mucosal irregularity in the right and left lateral walls along with the base of the bladder and multiple bladder calculi. Uroflowmetry showed hesitancy with obstructed pattern of flow. Patient was then subjected to CECT abdomen and pelvis which showed a 12cm lower midline pelvic mass with distal jejunum and proximal ileum bowel loops as contents. The collection was seen to communicate with the urinary bladder along with multiple large hyperdensities within. **Figure 1** illustrates the thickened bladder wall with a suspicious communication from the dome of the urinary bladder wall to the small bowel loops along with probable calculi in CECT abdomen imaging. A diagnosis of Enterovesical fistula with pelvic mass was made. UGI endoscopy and colonoscopy was unremarkable. Hence, patient was taken up for Laparotomy with Enterovesical fistula repair. Intraoperative findings revealed Inflammatory phlegmon formed by mid ileal loops, sigmoid colon and urinary bladder which is shown in **Figure 2**. Phlegmon was densely stuck to anterior abdominal wall. Fistulous communication between small bowel and dome of urinary bladder was seen as depicted in **Figure 3**. Undigested Aminosalicylates tablets which were interpreted as stones, approximately 15 in number were found inside the urinary bladder as seen in **Figure 4**. Patient underwent en mass resection of the phlegmon with proximal and distal ileal resection and anastomosis (**Figure 5**) and retrieval of the Aminosalicylates tablets by performing a vertical midline cystotomy followed by closure of the bladder in two layers with Suprapubic catheter (SPC) in situ.



Figure 1a & b: Axial imaging showing focal thickening of the dome of the urinary bladder with surrounding inflammatory mass involving the adjacent bowel loops and a few hyperdensities noted within.

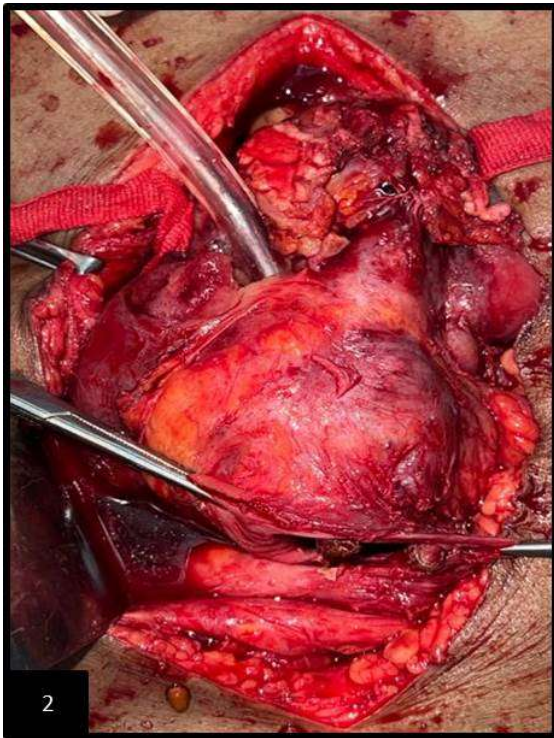


Figure 2: Inflammatory phlegmon formed by mid ileal loops, sigmoid colon and urinary bladder.

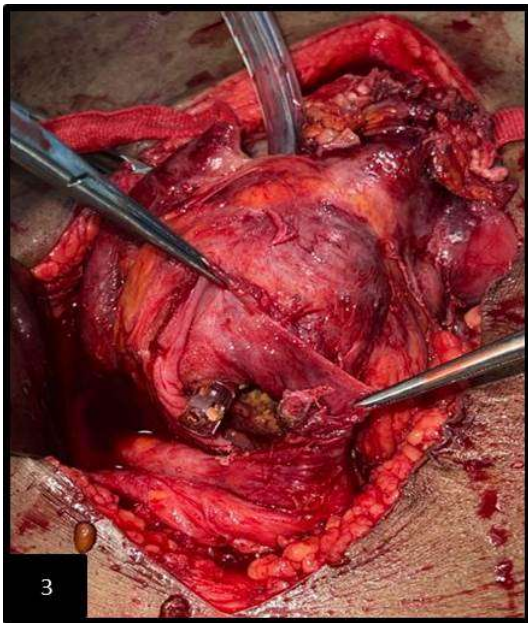


Figure 3: Fistulous communication between small bowel and dome of urinary bladder.



Figure 4: Undigested Aminosalicylates tablets retrieved from the urinary bladder.

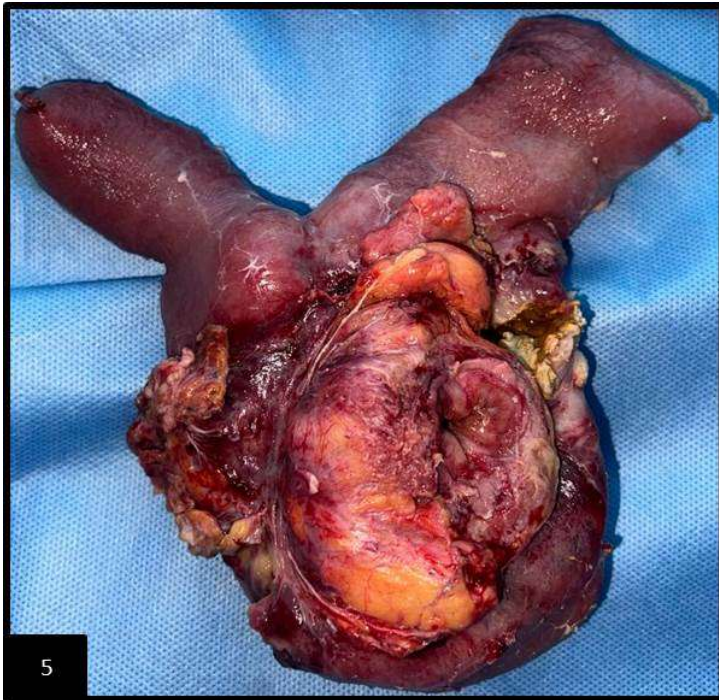


Figure 5: En-mass resection of the phlegmon with proximal and distal ileum.

Discussion:

An aberrant passage that joins two distinct epithelial surfaces is called a fistula. Furthermore, it is believed that fistula formation in CD patients is related to the epithelial-to-mesenchymal transition, an inflammatory process in which the release of several cytokines and proteases causes the intestinal wall to break down and mend with nearby organs [12]. An abscess developed between the small intestine and the bladder as a result of inflammation that spread throughout the full thickness of the gut wall in our patient. The bladder was gradually eroded by the abscess, and a fistula formed.

Since there is still no gold standard for evaluating EVF, diagnosing the condition is still difficult. Furthermore, it is challenging to identify the fistula due to the limited diagnostic capacity of existing imaging investigations. As a result, imaging results and clinical evidence serve as the primary foundation for the diagnosis of EVF. Pneumaturia and urinary tract infections are two of the most prevalent symptoms that strongly point to EVF. Conventional diagnostic techniques include colonoscopy, cystoscopy, barium enema, and cystography. Although diverticulitis and cancer are two possible causes of EVF that can be identified with barium enema, the detection efficacy for fistula is restricted because of its low sensitivity of 30-35% [13]. When it comes to identifying the underlying pathology of EVF, particularly cancer, lower gastrointestinal endoscopy is the most useful method. The presence of an EVF is also difficult to see, with published

studies showing a detection rate of 5-55% [14-16]. By displaying contrast outside of the bladder, cystography may reveal the presence of a fistula. Similarly, the edematous tissue may cause the fistula to close, making the fistulous tract undetectable. In certain situations, barium enema, cystoscopy, or cystography cannot identify the EVF. Because of its high sensitivity (up to 90%) in detecting EVF, CT is the most dependable method [17]. The most frequent findings include adhesion of the soft tissue mass between the bladder and the gut, thicker bladder wall next to the edematous bowel wall, and gas in the bladder. More significantly, CT can help in operation planning by indicating both the etiology and the anatomic structure surrounding the fistula [18].

The two primary ways to managing patients with CD complicated by EVF are medication therapy and surgery. When compared to a surgical procedure, the rates of morbidity with poor physical condition, malignant disease development, and septic consequences from the EVF are higher during medicinal therapy. According to some authors, people who are not candidates for surgery because of their poor health, inability to tolerate general anesthesia, or terminal illness should only get conservative treatment [19]. A greater requirement for surgery has been associated with a number of factors. Zhang et al. found that recurrent ureteral obstruction, enterocutaneous fistula, refractory urinary tract infection, small bowel obstruction, and abscess formation were significant risk factors for surgery in a retrospective investigation of 37 CD patients with EVF [20]. In the Yamamoto et al. [21] investigation, 25 out of 30 EVFs in CD patients were eventually surgically cured. After a median follow-up of 13 years, 22 of the patients experienced no recurrence of fistulae or sequelae. Furthermore, at a mean follow-up of 101 months, 78 out of 79 patients with CD-related EVFs who received surgical treatment experienced symptom improvement, according to Taxonera et al. [22] when combined, surgery appears to be a more effective option than medicinal therapy.

Genitourinary tract involvement accounts for less than 5% in Crohn's disease ranging from fistulisation, calculi and hydronephrosis secondary to compression. However, this case report shows a very rare finding of undigested mesalamine tablets in a patient with enterovesical fistula. EV fistula itself has been reported to occur in 2-5% of patients with Crohn's disease. Lower urinary tract symptoms are the most frequent clinical manifestations, occurring in two thirds of patients, while recurrent urinary tract infections and fecaluria have been reported in about one third of the patients.

Conclusion:

The diagnosis of EV fistula is challenging and is primarily based on clinical symptoms and supported by imaging findings. CT is one of the most important diagnostic tools, which can both localize the fistula and assist in making a surgical plan. Surgical intervention is imperative in some situations, such as progressive lower urinary tract symptoms, deteriorating renal function, or poor response to medical treatment. The long-term remission rate of EVF appears to be higher with an operative approach than a medical therapy approach.

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