CASE REPORT

Enterolith causing bladder outlet obstruction in patient with imperforate anus. A rare case presentation

Mudassir Hussain, Shah Muhammad, Muhammad Arsalan Khan, Muhammad Manzoor

Abstract

Imperforate anus is a rare anomaly associated with defects commonly referred to as vertebral defects, anal atresia, cardiac defects, tracheo-oesophageal fistula, renal anomalies and limb abnormalities (VACTERL). With modern surgical procedures the overall outcome is excellent. Permanent colostomy which is required in some cases of this disease can result in some rare complications such as enteroliths formation, as illustrated in the case we are presenting here related to a 28-year-old male who reported at urology emergency with features of urinary and acute large bowel obstruction. On investigation he was found to have two enteroliths in his distal loop of sigmoid colostomy. The more distal of the two enteroliths caused urinary retention and hence acute renal failure, and the proximal one caused large bowel obstruction by compressing the proximal loop of colostomy. This case demonstrates that the blind distal sigmoid colostomy loop can grow enteroliths secondary to stasis of its own contents over a long period.

Keywords: Enterolith, Colostomy, Imperforate anus, Urinary obstruction, Intestinal obstruction.

Introduction

Imperforate anus is a rare congenital anomaly usually associated with other defects which include vertebral, anal, cardiovascular, trachea-oesophageal, and limb anomalies (VACTERL). The estimated incidence is around 1 in 15000 live births.[1] It occurs as a result of failure of the descent of the urorectal septum and the persistence of the cloacal membrane during the development of the tail end of embryo in sixth week of gestation. The management is entirely surgical. For high type malformation, colostomy is recommended at birth with correction of anomaly in multiple-stage surgeries. For low type malformation, single-stage posterior sagital anorectoplasty is recommended.[2]

Low malformations has a better prognosis than high malformations because the latter are more likely to be associated with genital and urinary tract defects making surgical correction difficult with poor long term functional results. Long-term complications include chronic constipation, faecal incontinence, urinary incontinence and sexual problems.

Case Report

A 28-year-old male with no known co-morbidities presented in urology emergency in March 2013 with complaint of progressive abdominal distention for the preceding 20 days and urinary retention for 2 days. On enquiry, he reported that he was a known case of imperforate anus at birth and was operated on the third

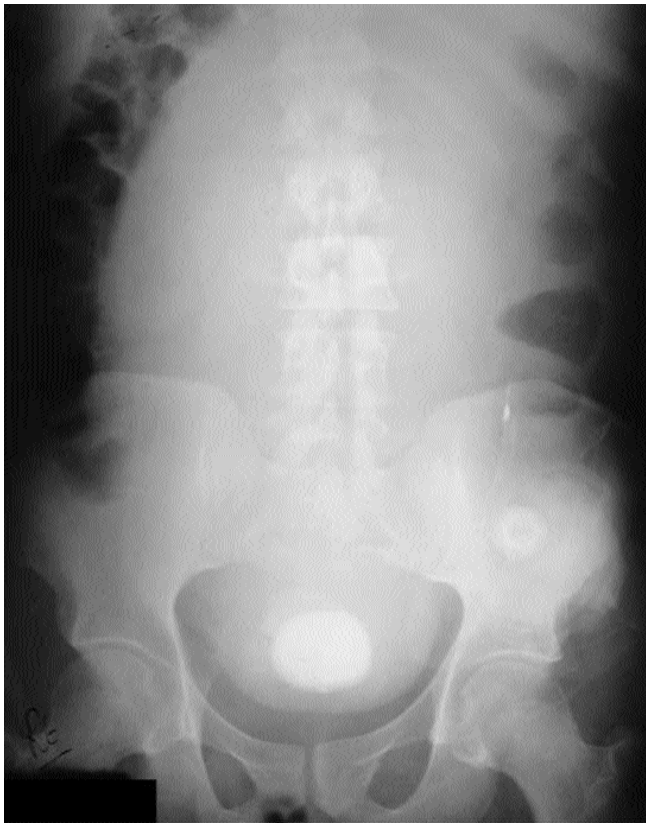

Figure-1: Abdominal X-ray demonstrating opacity in pelvis and left lower abdomen (site of colostomy).

Department of Hepatobiliary and Gastrointestinal Surgery, Sindh Institute of Urology and Transplantation (SIUT), Karachi.
Correspondence: Mudassir Hussain. Email: mudassir.hussain120@gmail.com

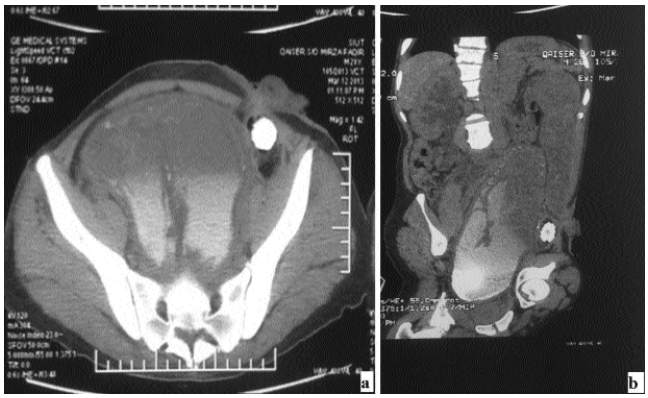

Figure-2: (a) Computerised tomography scan image showing two opacities in pelvis and left lower abdomen. (b) Reconstructed CT image showing dilated rectum with opacities at both ends.

day of life to create a permanent loop sigmoid colostomy in left iliac fossa. There had been for the last 20 days progressive decrease in faecal output through the stoma associated with gradual increase in abdominal distention and difficulty in micturition which progressed to absolute constipation and complete urinary blockage at the time of presentation.

On examination, the patient was seen in apparent discomfort and looked dehydrated. Abdomen was distended with audible gut sound and tympanic percussion node. Fluid thrill and shifting dullness was negative and no visceromegaly was appreciated. Rest of examination was unremarkable.

On investigation serum creatinine was 8 mg/dl and serum urea 201 mg/dl. X-ray abdomen erect and supine posture was suggestive of distended small bowel loops and faecal loading in large bowel. Ultrasound kidney, ureter, bladder (KUB) revealed mild bilateral hydronephrosis.

A provisional diagnosis of large bowel obstruction and acute renal failure was established. Patient was kept nil per oral (NPO) and urethral catheter was passed to assess urine volume. Nasogastric tube was passed and stomach decompressed, enema given per stoma to relieve faecal loading. The urine output was measured within normal limits, but stool output could not be achieved even after 48 hours of conservative management.

Per-operative stoma evacuation was done under sedation to break hard stools near the stoma site. The whole of descending colon was cleaned per-operatively. Following evacuation stoma output, increased gradually over the next 24 hours and abdomen began to soften and distention decreased. The patient was then allowed to take sips of clear water which he tolerated well along with increasing stoma output. A repeated X-ray abdomen was done which showed normal bowel loops and a large opacity in pelvis suggestive of bladder stone causing bladder outlet obstruction and other opacity in the near-left iliac crest around the site of colostomy. (Figure-1).

A computed tomography (CT) scan KUB was done to illustrate complete anatomy of two opacities seen on plain X-ray. The images of scan showed Foleys catheter tip within the bladder and the bladder was pushed to a side by opacity which was visible on plain X-ray (Figure-2). The radiologist reported one enterolith in proximal part of distal loop of sigmoid colostomy and another in the blind end of rectum which was pushing the bladder anteriorly and therefore obstructing bladder outlet.

Enteroscopy of distal loop was done. A constriction was noticed in proximal part of distal loop. It was dilated and both enteroliths were crushed and removed partially to allow drainage of rectum backward through stoma. Within the next 24 hours, the patient's serum creatinine and urea begun to settle down.

The patient was discharged on the 10th day of admission with normal stoma and urinary output.

Discussion

Enteroliths are uncommon manifestations of bowel disease. They are reported to be present in cases of Crohn's disease, intestinal diverticula, strictures and blind intestinal loops, chronic incarcerated hernias, radiation enteritis and tuberculosis.[3,4] The basic and essential feature behind formation of such stones is stasis of gastrointestinal contents. One study classified enteroliths into two classes, primary which are formed within the lumen of bowel by concretions of normal chylous substances such as choleric acid, calcium phosphate and calcium carbonate. Secondary stones pass into the tract from outside such as gallstones which enter the bowel lumen through fistulous communication between gall bladder and bowel.[5] They can be present in any part of intestine, but are most commonly seen in colon including vermiform appendix.

The associated symptoms of enteroliths include intermittent obstruction although acute intestinal obstruction is also reported, palpable mass, refractory anaemia, chronic pain and constipation.[6,7]

Plain X-rays can identify radiopaque stones which are made of calcium oxalate, calcium carbonate and calcium phosphate and usually present in distal acidic bowel,

while radiolucent stones made of cholic acid are difficult to locate and are usually present in proximal alkaline bowel.[8]

Conclusion

An enteroliths causing intestinal obstruction and sometimes perforation has been reported rarely, but such stone causing bladder outlet obstruction in association with imperforate anus has not been reported yet. Our case is unique in this regard being an untreated case of imperforate anus, creating a blind distal intestinal loop which grew enteroliths secondary to stasis of its own contents over a period of 28 years. The distal stone caused bladder outlet obstruction and, therefore, obstructive renal failure, and the distended rectum pushed the bowel loops, causing intestinal obstruction simultaneously with obstructed urinary system.

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