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Unusual Cause for Recurrent Urinary Infections: Colovesical Fistula Revisited

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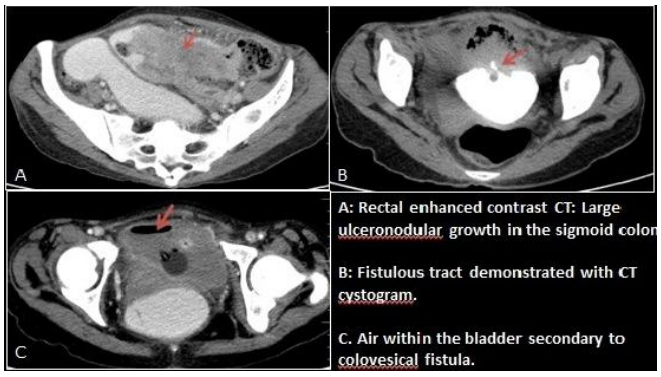
Abstract: ***Colovesical fistula is the presence of a communication between the colon and the bladder, either directly or via an intervening abscess cavity (foyer intermediare). These are the most common type of fistulous communication between the urinary bladder and the bowel. First record of Colovesical fistula was in AD 200 by Rufus of Epheus. The first monograph on the case was produced by Cripps in 1888.[1]. The relative frequency of colovesical fistulae is difficult to ascertain owing to multiple etiological factors, and also fewsurgical procedures could be complicated by such fistulae. The incidence in patients with diverticular disease, the most common cause of colovesical fistula, is generally accepted to be 2%, though per-operatively occurrence is documented to be higher. Only 0.6% of carcinomas of the colon lead to fistula formation.***

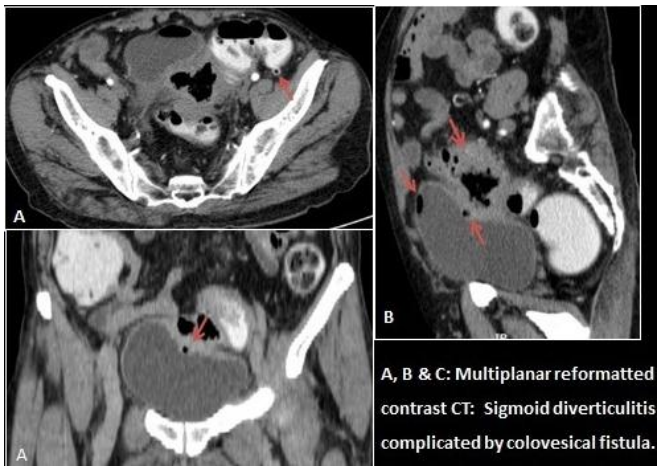
Keywords: Colovesical fistula, CT

1. Case Report

Case 1:
A 22year old lady presented withhistory of lower abdominal pain, recurrent urinary tract infection over the last 6months. Per abdomen examination revealed an ill-defined lower abdominal mass. Per-vaginal and Digital rectal examination were essentially normal. Blood investigations revealed elevated total leucocyte count secondary of infection associated with microcytic hypochromic anemia. Urine routine examination showed plenty of pus cells which grew E.Coli on culture and sensitivity.Routine ultrasound of the abdomen revealed a long segment ulceronodular growth involving a segment of bowel with inflammatory changes in the right adnexa, secondary infiltration of bladder dome, specks of air within the bladder was noted suggesting a possible fistulous communication. Differentials considered included a chronic on-going infective process viz, tuberculosis. CT cystogram followed by contrast CT of the abdomen revealed a large ulceronodular mass involving the sigmoid colon with direct extension into the bladder with colovesical fistula, this was confirmed on cystoscopy. [Figure 1].Histologically the sigmoid mass was adenocarcinoma.



Case 2:
A 75 year old male presented with history of high grade fever and left loin pain. On examination, the patient was toxic with significant tenderness in the left lower abdomen and pelvis. Blood investigations revealed elevated total leucocyte count secondary of infection and urine routine examination showed plenty of pus cells. Ultrasound abdomen showed circumferential wall thickening of the sigmoid colon and diffuse bladder wall thickening of the left posterolateral wall of the bladder, internal echoes and pockets of air was noted in the bladder raising a possibility of colovesical fistula. Contrast enhanced CT of the abdomen showed evidence of sigmoid diverticulitis with fistulous communication to the bladder which was confirmed per-operatively [Figure 2]. Histological examination showed inflammatory cells with no evidence of malignancy or features of inflammatory bowel disease. A diagnosis of colovesical fistula secondary to diverticulitis was made.



2. Discussion

Etiopathogenesis of colovesical fistula is varied. Most common cause in literature is secondary to diverticular disease (70-90%). Trauma and malignancies (20%) account

for the common causes of rectovesical fistulae. Ileovesical and appendicovesical fistulae can occur secondary to Crohn's disease (10%) and appendicitis respectively.Other rare causes likeMeckel's diverticulum, genitourinary tuberculosis, pelvic actinomycosis and Fabry's disease account for the remaining. [2] Malignancies account for 20% of the causes of fistulae. The most notorious malignancyis colorectal carcinoma, though other malignancies like those of the bladder, cervix, prostate, ovary and smallbowel lymphoma also can cause the same.Iatrogenic causes could be sequel to surgical misadventures during prostatectomy, resection of rectal lesions or laparoscopic hernia repair.Radiotherapy induced fistulae can develop years after exposure. Foreign bodies like swallowedtoothpicks and ingested chicken bones or rectal implantsare also among the rare etiological factors [3].

Sigmoid colon being the commonest site for diverticulitis and also carcinoma, most of the fistulas originate at this site. The male to female ratio is 4.1:1, interposition of reproductive organs in women is the cause for decreased incidence, however following hysterectomy the incidence is about the same.[4,7]. Presentation is usually in the sixth and seventh decades of life. Varied presentations have been documented, noteworthy are pneumaturia (77-90%), dysuria (45%), fecaluria (36%), hematuria (22%), orchitis (10%) and abdominal pain and diarrhoea,of which fecaluria is pathognomonic.Most of the fistulas (62%) open on the dome of the bladder while (28.5 %) of them occur along the posterior wall and 9.5 % in the trigone.[5,6]

Diagnostic approach for colovesical fistula begins with laboratory analysis of urine. Radiological diagnosis was initially by barium enema and The Bourne test, consisting of radiography of the centrifuged urine samples obtained immediately after a non-diagnostic barium enema. [8,9]. Today, this has been largely replaced by plain CT cystography followed by contrast enhanced CT to delinate the fistulous tract and is ascertain the cause and extent of disease. Signs like the herald sign, which is a crescentic defect on the upper margin of the bladder that is visualized best in an oblique view, representing aperivesical abscess and "beehive on the bladder" sign at thevesical end of the fistulous tract have been described [Figure 2].Because of the superiority of CT scanning as a tool for making the diagnosis and guiding treatment planning, cystography is no longer used in the evaluation of a fistula.

Main stay of therapy is surgical, which involves primary resection of the colon with anastomosis performed as a1-stage procedure, involving either simple closure, use of an omental flap, or resection and closure of the bladderdefect, repair of the fistula is done simultaneously. Laparoscopic closures have also been done, this offers the advantages of ashorter hospital stay, decreased post-operative discomfort and is aesthetically better.[10]

3. Conclusion

This being an under-reported entity in India, the purpose of this report was to not only present the two different aetiologies of colovesical fistula, but also emphasize that contrast abdominal CT coupled with CT cystography should be opted for as the primary imaging modality.

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