



Colovesical fistula due to sigmoid colon diverticulitis a case report

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Abstract : A 72-year-old man came to our hospital with the complaints of left lower abdomen pain, dysuria, turbid urine, pneumaturia and occasional fecaluria and was recently treated for acute cystitis. Clinical and radiological and Cystoscopic evaluation revealed sigmoid diverticulitis with colovesical fistula. Primary repair of the bladder with excision of fistulae and resection anastomosis of the colon was done in a single stage. Retrograde cystography taken on the 20th post-operative day revealed no leakage of contrast medium. He was asymptomatic at 3 months of follow-up. The high index clinical suspicion and expertise management results in good outcome of colovesical fistula.

Keyword : Colovesical fistula, Diverticulitis, Sigmoid colon.

Case Report:

A 72-year-old gentleman, known diabetic came to our hospital with complaints of left lower abdomen pain of three months duration, and also dysuria, turbid urine and pneumaturia with occasional fecaluria of one month duration. He was initially treated for acute cystitis on two occasions at the secondary referral centre with conservative management and was referred here to our tertiary hospital with possible suspicion of colovesical fistula. Patient was evaluated for the same in our hospital and the patient was in good performance status to his age. Clinical examination revealed tenderness in the left iliac fossa on abdominal examination and there were no other significant clinical signs. Patient was evaluated fistula as the primary diagnosis. On microbiological analysis, Urine culture showed significant growth of the organism *Enterococcus coli*. Imaging revealed cystitis changes with minimal loculated collection in rectovesical pouch on ultrasound and contrast enhanced computed tomography imaging of abdomen and pelvis described features suggestive of Sigmoid diverticulitis and minimal loculated collection recto vesical pouch with air pockets in bladder suggested colovesical fistula. (Fig.1)



Fig.1 CECT showed air pockets in bladder sigmoid bowel wall thickened feature suggestive of colovesical fistula

Cystoscopic evaluation showed normal urethral study and an fistulous opening with well defined opening of 5mm in the left lateral wall of bladder just adjacent to the left ureteric orifice and the diagnosis of vesical fistula possibly to the colon was established. (Fig. 2)



Fig.2 Diagnostic Cystoscopy showing fistulous opening in the bladder.

In view of the preoperative diagnosis of colovesical fistula, adjacent to the left ureteric orifice, Double J ureteric stenting of the left ureter was done pre operatively and planned for exploratory laparotomy and colovesical fistula repair. He underwent laparotomy and the left lateral peritoneal layer was opened and retroperitoneal dissection was done. The sigmoid colon adhering to the bladder adjacent to the fistulous tract was mobilized and the fistulous tract between the bladder and sigmoid colon was disconnected. As there were no pelvic collection and also no peritoneal contamination, the fistula edges excised in the bladder and they were repaired in two layers in a conventional manner. Sigmoid colectomy was performed (Fig 3,4,5). Post operative period was uneventful and the retrograde cystogram done after 2 weeks revealed no leakage of contrast medium. Post operative HPE also described the features of diverticulitis extending into the bladder wall. On follow up period, ureteric stent was removed after 6 weeks and our patient was clinically asymptomatic at 3 months period.



Fig .3 Shows fistulous opening in bladder (Feeding tube insitu after separation)



Fig.4 Shows fistulous opening in sigmoid colon with feature suggestive of diverticulitis (Feeding tube insitu after separation)



Fig.5 Resected specimen of sigmoid colon

Discussion:

Diverticulitis is the most common (70%) cause of colovesical fistulae in most series whereas 1-2 % of patients with diverticulitis may experience a colovesical fistula as a complication of their disease. 1,2,3,4 The variable clinical presentations of colovesical fistulae include pneumaturia in 50-70% patients followed by increased frequency, urgency, suprapubic pain, recurrent urinary tract infections (UTIs), and hematuria in order of incidence. GI symptoms may include fecaluria and tenesmus. The classic presentation of vesicoenteric fistula is described as Gouverneur syndrome and consists of suprapubic pain, urinary frequency, dysuria, and tenesmus. 5,6,9 Diagnosis mainly high index of suspicion with through history when patient treated for recurrent urinary tract infection. Urinalysis may reveal undigested intestinal food residue and urine culture shows *E.coli* or mixed organism infection. Ultrasonography through the transrectal or transvaginal route may identify the colovesical fistulae. CT scanning has become the imaging modality of choice with features such as bladder wall thickening adjacent to a loop of thickened colon, air in the bladder and the presence of colonic diverticula. MRI with intravenous gadolinium enhancement improves detection of bladder fistulae. 7,8,11 Cystoscopic examination has the highest yield in identifying a potential lesion and is often have non-specific abnormalities in endoscopic exam in greater than 90% of cases. Barium enemas have limited utility in the diagnosis of enterovesical fistulae due to low sensitivity. The Bourne test, however, can be a useful adjunctive study in the evaluation of colovesical fistulae and the Radiodense particles in the urine are considered a positive test and evidence for a vesicoenteric fistula. Nonoperative management is a viable option in selected patients with vesicoenteric fistula like nontoxic, minimally symptomatic patients with nonmalignant causes of enterovesical fistulae. The goal of operative management is to separate and close the involved organs with minimal anatomic disruption and normal long-term function of both systems. Unfortunately, enterovesical fistulae may be complicated by intense pelvic inflammation, pelvic abscess, and phlegmon formation, requiring complex staged reconstructions. Bowel resection and/or partial cystectomy may be necessary to obtain viable tissue margins to ensure adequate, watertight closure of the involved viscera.

An interpositional flap of greater omentum is often placed between the repaired bowel and urinary bladder to prevent overlapping suture lines and provide a well-vascularized surface for healing. Both single and multistage procedures have been advocated, depending on the clinical circumstances. 10,11,12,13 A single stage procedure involves removal of the fistula, closure of the involved organs, and primary reanastomosis of the bowel following resection of the involved bowel segment. A two-stage approach advocates removal of the fistula, closure of the involved organs, and creation of a temporary proximal diverting colostomy, with a later return to the operating room for colostomy takedown once the fistula tract is demonstrated to be closed. Patients with an inflammatory cause of the fistula, but without gross contamination, can be treated with a one-stage procedure. Pertaining to the management in our case which had fistula with minimal inflammation, the single stage procedure was a feasible option.

Conclusion:

The high index of suspicion of colovesical fistula depends on the clinical presentation and radiological findings. Management by experienced surgeons result in less morbidity and good functional outcome.

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