Colovesical Fistula Complicating Colonic Diverticulosis

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Abstract

Two cases of colovesical fistulae secondary to colonic diverticulosis are reported. Urinary symptoms were the prominent presenting features. Barium enema was helpful in documenting the fistulae, which cystoscopically was not localised. Definitive treatment included resection of the fistula and the diseased segment of the intestine. Both patients are well on follow-up. Diverticulosis coli should be considered in the differential diagnosis of colovesical fistulae even in tropical countries.


Key words: Barium enema, computed tomography.

Introduction

Colonic diverticulosis is the most common etiological factor in the causation of colovesical fistula, and colovesical fistula represents up to two-thirds of all internal diverticular fistulae. These patients may present with urological symptoms like dysuria (94%), fecaluria (75%), pneumaturia (75%) or with purely enteric symptoms. Diverticular disease of the colon is now being increasingly recognized in developing countries. Two cases of colovesical fistula complicating sigmoid diverticulitis are being reported.

Case Report

Case 1

A 75-year-old man presented with complaints of pneumaturia, fecaluria and dysuria of 4 months' duration. There was no history of diarrhea or rectal bleeding, loss of weight or appetite. He was a known diabetic and was receiving oral hypoglycemic agents. There was no history of tuberculosis. General physical examination was unremarkable. Abdominal examination revealed a vague, ill-defined, tender lump in the left iliac fossa.

A tentative diagnosis of vesicointestinal fistula was made. Urinalysis showed many pus cells and red blood cells. Urine culture grew Escherichia coli. Chest X-ray, intravenous urography and cystography were essentially normal. Barium enema (Fig 1) showed a polypoidal mass in the rectosigmoid region with a fistulous communication between the colon and urinary bladder. Fiberoptic sigmoidoscopy showed narrowing of the lumen at the sigmoid-descending colon junction with acute angulation. The mucosa in the area was uneven and nodular. A small opening was also seen which was thought to be the fistulous tract. Repeated biopsies were negative for malignancy. Cystoscopic examination revealed intense congestion of the bladder mucosa, edema and pseudopolyps on the left ureteral wall near the dome.

A preliminary right transverse colostomy was performed. Com-

Fig 1: Barium enema examination shows an irregular polypoidal filling defect in the rectosigmoid area, with a colovesical fistula.

Fig 2: CT scan showing air in the urinary bladder, mass lesion in rectosigmoid junction infiltrating posterior wall of urinary bladder.
Computed tomography (CT) scan revealed an irregular soft tissue density lesion in the distal sigmoid colon, obliteration of fat planes between the bladder and colon, and air in the urinary bladder (Fig 2).

At exploration, the sigmoid colon was found to be densely adherent to the bladder and lateral pelvic wall, and a 10 cm x 7 cm mass was felt in relation to the sigmoid colon. The affected segment of the bladder was excised and the urinary bladder closed around a catheter. The sigmoid colon was resected and an end-to-end anastomosis was performed.

The length of the resected sigmoid colon was narrowed and showed focal 0.2 cm to 0.3 cm mucosal ulcers. Serial slicing at intervals of 5-10 mm showed multiple spaces, some of them in continuity with the bowel lumen and a few of them having a lining of mucosa. Light microscopy of these spaces confirmed them to be multiple diverticula with inflammation and marked fibrous thickening. Sections of the resected bladder wall showed denudation of lining epithelium with submucosal chronic inflammatory cell infiltration.

Case 2

A 60-year-old man, a known diabetic, was admitted with colicky pain in the abdomen of 6 years' duration, with history of intermittent pneumaturia, dysuria and passing turbid urine of 2 years' duration. There were no altered bowel habits or rectal bleeding. His urine analysis on many occasions confirmed pyuria and for this he received various antibiotics. Physical and systemic examinations were unremarkable. A tentative diagnosis of vesicocolonic fistula was made.

Routine blood and biochemical estimations were normal. Urinalysis showed many pus cells, and urine culture grew Escherichia coli. Unenhanced and intravenous urography were normal. Cystogram showed a normal-capacity bladder, but the fistulous communication was not seen. Barium enema examination established the diagnosis of colovesical fistula with colonic diverticulosis. sigmoidoscopic examination revealed inflamed mucosa. Cystoscopic examination revealed intense angulation of the bladder mucosa near the dome, but no fistulous communication was seen.

At laparotomy, the sigmoid colon was thickened, and densely adherent to the bladder and lateral pelvic wall. The affected segment of the colon was excised and an end-to-end anastomosis was performed. The bladder was closed around a catheter after resection of the affected segment. On the 8th postoperative day, the patient developed complete abdominal wound dehiscence, which was sutured. The postoperative recovery was uneventful. The resected colon showed diverticulosis. Two years later, he presented with an incisional hernia which was repaired.

Discussion

Colonic diverticulosis is being increasingly recognized in India. Some patients may manifest for the first time with one of the complications of diverticular disease. Colovesical fistulas are the most common type of fistula secondary to diverticulosis coli.1,3,4,7 Urinary symptoms predominate in the clinical picture of vesicocolonic fistula and recurrent urinary tract infections, pneumaturia and fecaluria are common presentations.2,3,6 Recurrent urinary tract infection in patients with inflammatory bowel disease of the distal colon should suggest the possibility of colovesical fistula.3,4

The efficacy of traditional diagnostic investigations are limited because complications of diverticulitis are primarily extraluminal. Barium enema has been reported to demonstrate fistula in only 30%.3 The most common findings on cystoscopy include localized inflammation and bullous edema of the bladder mucosa, with actual demonstration of the fistula in only 20%.5 Cystography and colonscopy have a low diagnostic yield.2,3 Cystoscopy and biopsy have been felt to be valuable for establishing the exact diagnosis.6 CT scanning has been reported to be most helpful in the diagnosis,4 and the reported findings include intravesicular air, passage of orally or rectally administered contrast medium into the bladder, focal bladder-wall thickening, and the presence of diverticula. Labs et al9d documented the presence of a fistula in 92% on computerized tomography, in 38% on contrast examination of the colon, 12.5% on intravenous urography and in none on cystography.

Surgical resection with repair is always indicated as these fistulae seldom resolve spontaneously.3,4,6 Effort should be made to identify the site of the fistula in the bladder which is usually in the dome. This fistulous area should be resected and closed.4,6

The mortality associated with colovesical fistula is reported to be 4% to 5%.2 Both our patients survived and are well.

References