

COLOVESICAL FISTULA: A CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

A 56 years old male presented to the surgery out patient department of Sri Ramachandra Medical College And Research Institute with complaints of recurrent urinary tract infection since 9 months. He also gave history of fecaluria and pneumaturia. The patient was

diagnosed to have colovesical fistula secondary to diverticular disease and underwent surgery successfully. The aetiology, incidence, appropriate investigations and management shall be discussed.

Keywords: colovesical fistula, diverticular disease.

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INTRODUCTION

Colovesical fistula was first described by Rufus of Epheus in AD 200, though the first monograph on the case was produced by Cripps in 1888.^[1] Colovesical fistula is not a very common entity encountered by the gastro intestinal surgeon in the clinical practice. Hence there is insufficient experience in the management of colovesical fistulas to develop a clear algorithm.

CASE REPORT

A 56 year old male presented to the general surgery outpatient department of Sri Ramachandra Medical College and Research Institute with complaints of recurrent urinary tract infection since 9 months. He also gave history of fecaluria and pneumaturia for the past 5 months. The patient did not give any history of chronic constipation, bleeding per rectum, altered bowel habits, loss of weight or loss of appetite. The patient was a known case of bronchial asthma with no other co-morbidities and no previous surgeries.

On examination patient was not anaemic. Per abdomen examination revealed a soft non tender abdomen with no palpable mass. Digital rectal examination was normal. Systemic examination showed no abnormality. With the above symptoms a provisional diagnosis of colovesical fistula was made.

On investigating, urine routine examination showed plenty of pus cells which grew E.Coli on culture and sensitivity. His renal function test was within normal limits. Ultrasound abdomen showed mobile internal echoes within the urinary bladder. Contrast enhanced computerised tomography (CT Scan) of the abdomen showed focal thickening at the left anterior superolateral region of the bladder. The

patient was taken up for colonoscopy which showed multiple diverticuli in the sigmoid colon. The patient underwent cystoscopy which demonstrated the fistulous opening in the superolateral region with active inflow of faecal matter. Tiny fecal matter was observed in the bladder. Both the right and left ureteric orifices were normal. Hence a diagnosis of colovesical fistula secondary to diverticulitis was made. Patient was taken up for surgery after adequate bowel preparation. Anterior resection was done after separation of the fistulous tract between the sigmoid and bladder and bowel continuity was restored using circular staplers. Bladder repair was done in two layers. Histopathological examination (Fig.1) was done, which ruled out malignancy. Post operatively the patient recovered well.

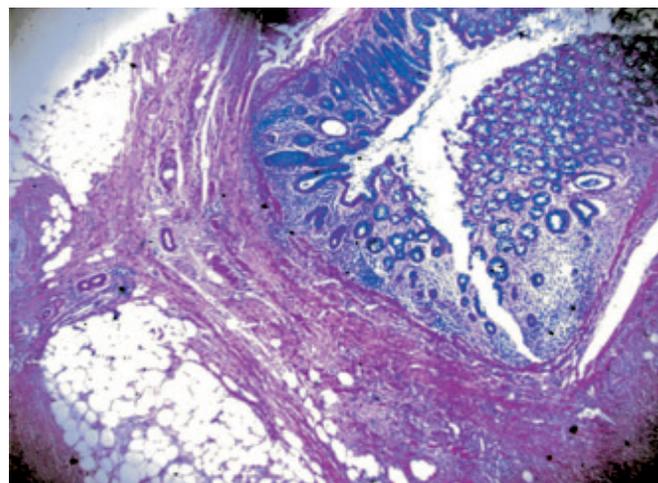


Fig 1: Histopathologic section from the fistula. Mucosa of the colon and the urinary bladder are adjacent to each other.

REVIEW OF LITERATURE

Although more than 1000 cases of colovesical fistula have been reported in the last 30 years, there is a lack of management protocol. Majority of such cases are a result of diverticular disease (56.3%) but as such formation of colovesical fistula is not a very common presentation of this disease. The other etiological

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conditions include carcinoma of colon (20.1 %), Crohn's disease (9.1 %), surgeries (3.2%), radiotherapy (3 %) and carcinoma of the cervix, carcinoma bladder and appendicitis accounting for the remainder.^[2] There has been few case reports of colovesical fistula following perforation of ingested foreign body.^[3]

In females, due to interposition of reproductive organs the above condition is comparatively less common although following hysterectomy the incidence may be the same.^[4] Fistula may form directly between two adjacent organs or there may be an intervening abscess cavity – the Foyer Intermediare of Chavannaz.^[5] The classical example is a documented case report of cytotoxic therapy (CHOP regimen) in a case of non-Hodgkin's lymphoma, where there was a fistulous communication between the sigmoid and bladder along with an intervening small abscess cavity.^[6] The fistulous tract may be inflammatory or malignant in nature.

In diverticular disease the mucosal changes include lymphoid infiltrate, development of lymphoglandular complexes, paneth cell metaplasia, mild cryptitis, mucin depletion and ulceration leading to inflammatory reaction and formation of fistulas. The remaining colonic mucosa is usually normal but around 1% of cases have mucosa indistinguishable from ulcerative colitis and Crohn's disease – SCAD (segmental colitis associated with diverticular disease).^[7]

Most common presenting features of colovesical fistula include pneumaturia (77-90%), dysuria (45%), fecaluria (36%), hematuria (22%), orchitis (10%) and abdominal pain and diarrhoea.^[8,9]

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.^[10]

In such cases, the bladder is continuously contaminated by faeces but ascending infection like pyelonephritis is less likely unless there is a distal outflow obstruction.

Pneumaturia is the most common presentation (61%). Increased urinary frequency is also quite common. Many patients wait for a long time before consultation to the doctor as the symptoms may not be very severe as was the case in our patient.

Barium enema and cystoscopy both are initially performed to delineate the fistulous tract. It may also determine the aetiology in few cases. Barium enema is able to identify the tract in almost 35 % of cases according to the literature.^[11] Cystoscopy also identifies

the fistula in about 35-40 % of the cases. A fluid level in the bladder can be expected in plain radiograph on erect lateral view. Sigmoidoscopy is not used to identify the fistula as such but it may identify the aetiology of fistula formation, hence an important step in management of the above condition. Cystoscopy clinches the diagnosis in around 27 % of the patients. "Beehive sign" which is elevation of the bladder at the site of the attachment with colon is an important sign. The Bourne test, consisting of radiography of the centrifuged urine samples obtained immediately after a nondiagnostic barium enema, clinches the diagnosis of occult colovesical fistula.^[12]

On CT the fistula will be heralded by the presence of gas within the lumen of the bladder, or less frequently direct demonstration of the tract itself. Contrast may be instilled into the rectum 'on table' prior to the acquisition of images in order to demonstrate a fistula.^[13]

Defunctioning colostomy as proposed by 'Barbier de Melle' in 1843 was the earliest described treatment of colovesical fistula. For many years, the 3 stage resection as advocated by Charles Mayo was being practiced. In patients presenting with abscess formation, intestinal obstruction, previous history of radiotherapy preliminary defunctioning colostomy is recommended. For patients undergoing the 3 stage procedure, the duration between the procedures should be ideally 4-6 weeks. But at present the recommendations for uncomplicated disease are that of single stage procedure.^[14] In patients with non obstructing lesion and without contamination a single stage surgery with anastomosis is quite satisfactory. Also in patients presenting with sepsis, a single stage procedure can be undertaken after the acute phase subsides. The accepted treatment of the bladder defect is 2 – layered closure with post op continuous bladder drainage. Above all present literature recommends single stage procedure for all cases of uncomplicated colovesical fistula.

Laparoscopic resections are increasing in popularity and deliver encouraging results comparable to open resection. A large multi-centre randomised controlled trial is required to validate its potential benefits over open surgery.^[15]

CONCLUSION

Very few studies have been done in colovesical fistula incidence among Indian population. Diverticular disease as such is not very common among the Indian race and among them very few present as

colovesical fistula. Colonoscopy and cystoscopy form an important part of the investigations. Single stage resection of the diseased bowel with anastomosis and primary closure of bladder defect remains the mainstay of the treatment.

REFERENCES

1. Cripps H. Passage of air and faeces from urethra. *Lancet* 1888; 2: 619.
2. Pollard SG, Macfarlane R, Grestorex R, Everett WG, Hartfall WG. Colovesical fistula. *Ann R Coll Surg Engl* 1987;69:163-5.
3. Khan MS, Bryson C, O'Brien A, Mackle EJ. Colovesical fistula caused by chronic chicken bone perforation. *Ir J Med Sci* 1996; 165:51-2
4. Kovalcik PJ, Veidenheimer MC, Corman ML, Collier JA. Colovesical fistula. *Dis Colon Rectum*. 1976;19:425-427
5. Lockhart-Mummery HE. Vesico-intestinal fistula. *Proceedings of the Royal Society of Medicine* 1958;51:1032-6
6. M.S. Ansari, Ghulam Nabi, Iqbal Singh, A.K. Hemal, Girish Pandey Colovesical fistula an unusual complication of cytotoxic therapy in a case of non-Hodgkin's lymphoma. *International Urology and Nephrology* 2001; 33(2): 373-4
7. West AB, Losada M. The pathology of diverticulosis coli. *J Clin Gastroenterol* 2004;38:S11-6.
8. Najjar SF, Jamal MK, Savas JF, Miller TA. The spectrum of colovesical fistula and diagnostic paradigm. *Am J Surg* 2004; 188: 617-21.
9. Evangelos Falidas, Georgios Anyfantakis, Konstantinos Vlachos, Christina Goudeli, Boutzouvis Stavros et al. Pneumoperitoneum, Retropneumoperitoneum, Pneumomediastinum and Diffuse Subcutaneous Emphysema following Diagnostic Colonoscopy. *Case reports in surgery* 01/2012; 2012:108791. DOI:10.1155/2012/108791
10. Aldrete JS, ReMine WH. Vesicocolic fistula - A complication of colonic cancer. *Arch Surg* 1967;94: 627-37.
11. Yang HY, Sun WY, Lee TG, Lee SJ. A case of colovesical fistula induced by sigmoid diverticulitis. *J Korean Soc Coloproctol*. 2011;27(2):94-8.
12. Amendola MA, Agha FP, Dent TL, Amendola BE, Shirazi KK. Detection of occult colovesical fistula by the Bourne test. *AJR Am J Roentgenol* 1984;142:715-8.
13. Jarrett TW, Vaughan ED Jr. Accuracy of computerized tomography in the diagnosis of colovesical fistula secondary to diverticular disease. *J Urol*.1995;153:44-6
14. McConnell DB, Sasaki TM, Vetto RM. Experience with colovesical fistula. *Am J Surg* 1980; 140:80-4.
15. N Ladwa, M Sajid, M McFall, A Miles, P Sains, M K Baig. The investigation and management of colovesical fistulae in the modern era - a single institutions 12-year experience. *Gut* 2012; 61:A336 doi:10.1136/gutjnl-2012-302514d.96.