APPENDICOVESICAL FISTULA: A RARE COMPLICATION OF APPENDICITIS

F. Golfam*1, S. K. Forootan2, P. Golfam3, A. R. Khalaj1, S. S. Sayedmortaz1

1) Department of Surgery, Mostafa Khomeyni Hospital, Shahed University, Tehran, Iran
2) Department of Urology, Mostafa Khomeyni Hospital, Shahed University, Tehran, Iran
3) Department of Anesthesiology, Kermanshah University of Medical Sciences, Kermanshah, Iran

Abstract- Appendicovesical fistula is an uncommon type of enterovesical fistula and a rare complication of unrecognized appendicitis. Appendicovesical fistula often presents with recurrent or persistent urinary tract infection, especially in men. The commonest causes are appendicitis, cecal diverticulitis, and cystadenocarcinoma or carcinoid tumors of appendix. Approximately 114 cases have been reported previously in the literature, the vast majority in young male patients. Our special case joins the other cases which have already been described in the international literature. This case is a middle-aged man and is the first who has large and multiple fecaliths. We reviewed other cases and contributed an additional one with hope that increased awareness of this entity may facilitate the correct diagnosis and avoid inappropriate management.

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INTRODUCTION

Abdominal pain is the main symptom of acute appendicitis. Classically, period of pain is varying from 1 to 12 hours, although usually within 4 to 6 hours. Immediate appendectomy has long been the recommended of acute appendicitis because of the known risk of progression to rupture. Appendicular rupture occurs most frequently in children and older patients. The overall rate of perforated appendicitis is 25.8 % (1,2). Patients that present with a longer duration of symptoms may progress to appendicular mass. In 2-6% of the patients, appendicular mass will be detected.

The appendix and the bladder may occasionally become fused in an inflammatory condition and producing necrotic focus and at last creating a fistula. Rarely appendix abscess may rupture into the bladder, producing an Appendicovesical fistula (AVF). Sometimes this evidence penetrates into the intestine, onto the skin or other organs adjacent to appendicular abscess or phlegmon and creates another form of appendicular fistula. Clinical presentation of AVF can be with a history of abdominal pain with characteristics of appendicitis that undergo antibiotic therapy and after a period patients present prominently with urologic symptoms and infrequently with subacute or chronic abdominal pain. On the other hand, appendicitis without any formation of fistula was seen with bladder tumor, hematuria, and pelvic mass with urethral obstruction, respectively. AVF can be classified as a subgroup of colovesical fistula with the same clinic and paraclinic colovesical fistula. Dysuria, frequency, pneumaturia or fecaluria can be the urologic symptoms in AVF. Appendicitis particularly pelvic form (3), is the most common cause in AVF cases that reported till now but other underlying causes such as radiation (4), Crohn’s disease (5, 6), papillovillousadenoma of appendix
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(7), appendicular diverticulitis (8), cystadenocarcinoma of the appendix (9) and carcinoid tumors, neuroma (10), mucinous adenocarcinoma, ileocecal actinomycosis (11), Hirschsprung's disease (12) and cystic fibrosis (13) had been reported.

The diagnosis of AVF is difficult and usually delayed. Barium enema and colonoscopic examinations, magnetic resonance imaging ultrasonography, cystography have minimal role in AVF diagnosis. Computed tomography (CT) readily detects air within the bladder earlier and without equivocation when compared with other imaging techniques. It is also useful in the assessment of the extent and the degree of pericolonic inflammation, thus playing an important role in preoperative surgical planning and postoperative follow-up (14). In spite of aforementioned tests in some study laparoscopy was reported as the only diagnostic modality (6, 15).

CASE REPORT

A 36-year old man presented with persistent dysuria with leukocyturia. He was treated with broad spectrum antibiotics for several months. He had abdominal pain history in 8 months ago that he performed plain abdominal x-ray (Fig. 1). One prominent fecalith obvious in primary abdominal x-ray but the patient unfortunately missed and received a great amount of antibiotics. While this patient was admitted in our service he had no abdominal tenderness in physical exam in spite of the presence of dysuria and pneumaturia.

He was under broad spectrum antibiotics coverage and urine culture was negative. Cystoscopy showed some bullous edema of the posterior bladder wall.

Additional Plain abdominal x-ray was performed that demonstrated 2 additional fecalith and remarkable growth in size (Fig. 2). An AVF was confirmed by CT, which showed gas in the bladder and thickening of the bladder wall adjacent to the fecaliths (Fig. 3). Findings were confirmed at laparotomy. Retrograde appendectomy amasses with fistula and resection margin of involved bladder wall was performed. Defect of bladder wall was repaired too. In the pathologist report no evidence of malignancy was seen and only characteristic of appendicitis and chronic cystitis was described.

DISCUSSION

AVF is a rare form of internal fistula usually occurring in boys and young men. Only 113 cases in all ages have been reported previously in literature (12). Fistula is formed via direct extension of ruptured appendix or secondary to abscess erosion into the bladder. The site of the tract in the bladder is depended on the route of the spread-out. Although the essential cause of AVF is intestinal origin, most complaints of patient have urologic symptoms (16). As the other forms of internal fistula, gastrointestinal symptoms range from mild abdominal cramps to sever abdominal pain and diarrhea. Hypokalemic hyperchloremic metabolic acidosis can be one of appendicovesical fistula presentations (17).
For obtaining objective records and anatomical position of the suspected AVF several studies were conducted. Although cystoscopy with “beehive” sign on the bladder may be valuable in diagnosing the presence of a colovesical fistula (18). Cystoscopy and barium enema is often unsuccessful and independently had a sensitivity of less than 50% generally in colovesical fistula (19). Plain film, cystogram and IVP infrequently demonstrate a fistula in most studies. CT has newly been advocated for documentation of colovesical fistula (20) the most diagnostic finding in fistula between gastrointestinal tract and bladder is presence of gas in bladder in particular patients without recent transurethral instrumentation. Another usefulness of CT can be achieved with oral contrast before the administration of intravenous contrast material that allow visualization of orally ingested contrast material in the bladder or in suspected image with centrifuging of urine the small amount of barium can be detected (Bourne test) (21). Another CT findings included focal bladder-wall thickening ,thickening of adjacent bowel wall ,and an extraluminal mass that often contained air (22) .Several studies recommend that CT is the most exact diagnostic test accessible for demonstrating entero vesical fistula and should therefore replace the use of other less sensitive diagnostic tests currently included in the initial evaluation of patients with a suspected entero vesical fistula (23). Shinojima et al. and Anderson et al. (1997) evaluated 3-dimentional CT in comparison the conventional axial CT (24). The finding of this studies suggest that 3-dimensional CT provides superior and more complete visualization of the anatomic relationship of the bladder and the colon and that can be used to improve appreciation of the complexity of local structure, additional aiding in the diagnosis and facilitating the definitive surgical procedure required (24).

In summary, the diagnosis of AVF is difficult and can be frustrating occasionally, resulting in multiple nondiagnostic investigations and delayed surgical treatment when this is deemed appropriate. In view of several study CT scan can be as a first line investigation in all patients with suspected AVF and for rule out of malignancies in patient whom AVF without evidence of appendicitis such as history and fecaliths. We recommend colonoscopy following the CT. Other investigative modalities should only be used if the diagnosis is in suspicious or further information is needed to plan operative management. Due to the mild and ambiguous symptomatology, the diagnosis of this kind of fistula is difficult to be definite, and this diagnosis can be obtained with a severe doubt to a vesicointestinal communication. Exploratory laparotomy is usually diagnostic and leads to decisive therapy. Expertise with diagnostic laparoscopy adds a potent tool to the evaluation of patients with difficult or unusual surgical problems. Subsequent performance of minimally invasive techniques for surgical therapy when proper can notably decrease hospitalization and period of recovery. At last, only an awareness of this condition can be a key and that will lead to prompt diagnosis and definitive therapy.
REFERENCES