Case Report

Colovesical fistula in a young adult due to sigmoid colon diverticulitis undetected in computed tomography: Case report and review of literature

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ABSTRACT

Introduction: Colovesical fistula is the pathological communication between the colon and urinary bladder. It is related with high morbimortality rate and it is an uncommon complication of diverticulosis in young adults. Case presentation: We report a case of a 38-year-old Brazilian man with fecaluria and pneumaturia for eight months, whose colovesical fistula was undetectable in CT scan and with surgical management. Discussion: Diverticulosis is the main inflammatory condition causing colovesical fistulas and the sigmoid colon is the most common part involved. It is more prevalent in patients over 60 years old and in western countries due to low fiber diet. Conclusion: Colovesical fistula diagnosis is difficult, requiring high suspicious and proper investigation through good anamnesis, CT scan and also colonoscopy and cystoscopy when necessary.

1. Introduction

Colovesical fistula is the most common enterovesical fistula type, which is the existence of a pathological communication between the colon and urinary bladder [1-3]. Diverticulosis induces these conditions in 65–75% of the enterovesical fistula cases [1,2]. Enterovesical fistulas are associated with high morbimortality [3,4]. Diverticular disease affects about 10% of the western population due to poor fiber diet and it is more common in the sigmoid colon, representing 50–70% of fistula sites [3,5,6]. It is an infrequent complication of acute diverticulitis and affects individuals over 60 years [7]. Besides the inflammatory etiology, pelvic neoplasms are also related with this condition [3].

We report a case of colovesical fistula undetected in Computed Tomography (CT) induced by sigmoid diverticular disease in a 38-year-old male patient and with surgical management.

This case report is being reported in line with the SCARE 2020 criteria [8].

2. Case presentation

A 38-year-old Brazilian man was admitted in our service with chief complaint of fecaluria and pneumaturia for eight months that started after an intense abdominal pain at the time. His occupation was teaching and he walked into the urology emergency by his own means. The patient evolved with repeated episodes of urinary infection associated with dysuria and hematuria. He was treated with several antibiotics with no resolution of the main complaint of fecaluria and pneumaturia.

On admission, the patient was stable, afebrile, acyanotic, anicteric, with normal vital signs and physical examination with globose, flaccid abdomen, painless, with no peritoneal irritation. After two days, he reported dysuria and mild pain in hypogastric area. He was treated with ceftriaxone and metronidazole with relief of dysuria and hypogastric pain, but persistence of fecaluria and pneumaturia. He was treated with several antibiotics with no relevant genetic information and psychosocial history.

Laboratory tests revealed normal serum values, including renal function (WBC 11.360; Hemoglobin 12.4; Urea: 40; Creatinine: 1.3). The
patient was submitted to an abdominal and pelvic CT scan with oral and intravenous contrast that showed no evidence of entero vesical fistula. After six days, a new CT scan with oral contrast was performed but no evidence of fistula was detected in the exam (Fig. 1).

He underwent exploratory laparotomy with supra and infraumbilical median incision with a urologist and a gastrointestinal tract surgeon. During the procedure, firm adherences between sigmoid colon and urinary bladder was identified (Fig. 2). A careful dissection was performed separating the sigmoid colon from posterior wall of the bladder, which was with necrotic tissue later dissected and the bladder wall repaired in two layers with vicryl 4–0 and 2–0, respectively. An extensive necrosis area was present in sigmoid colon, associated with several diverticula. A rectosigmoidectomy of approximately 25 cm was performed with colostomy of the proximal segment (Fig. 3). The surgery was performed by a general surgeon with digestive tract surgery specialization and by a urologist.

The dissected tissue of posterior bladder wall and sigmoid segment were submitted to histopathological analysis that revealed unspecific chronic inflammatory process compatible with colovesical fistula and colovesical fistula with diverticulitis, respectively. No malignant lesion was identified.

In post-operative recovery, the patient evolved painless, with a Foley catheter with discreet pieces of a white-yellow colored mass from the bladder. The intervention was nicely tolerable by the patient and he was discharged 12 days after surgery and oriented to remove the catheter in twenty-first day post-surgery. He was referred to a specialized service for gastrointestinal tract reconstruction, which was performed about five months later. In once a month follow-up, he evolved with absence of pneumaturia and fecaluria.

3. Discussion

The presence of an abnormal communication between two different cavities is called fistula and when it involves the colon tract and the urinary bladder is defined as a colovesical fistula [1,2]. This type of fistula is usually related to inflammatory processes or neoplasm conditions. Diverticulosis is the main inflammatory condition causing colovesical fistulas and is considered relatively rare [5,6].
4. Conclusion

Colovesical fistula is rare in young adults and it is mainly related to diverticulosis. This condition may present with a variance of symptoms, especially pneumaturia and fecaluria. Although CT presents high accuracy in its diagnosis, it may not detect small fistulas. Most of the cases are surgically treated through intestinal reanastomosis and bladder reconstruction. High suspicious and proper investigation are required in the existence of pneumaturia and fecaluria to diagnose colovesical fistula.

4.1. Patient perspective

The patient reported in the follow-up he was grateful for the problem solution after surgery and that he could go back to his teaching activities without any of previous difficulties.

Declaration of competing interests

All authors declare no conflict of interests.

Ethical approval

This study was exempt from ethical approval.

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Author contribution

Francisco Marcos da Silva Barroso: study concept, data collection, writing the paper. Carolina Augusta Dorgam Mauá: study concept and data collection. José Paulo Guedes Saint Clair: study concept and data collection. Renato da Silva Galvão: study concept and data analysis. Gustavo Lopes de Castro: study concept, data collection, writing the paper and design. Laura Ribeiro Aref Kzam: writing the paper and design.

Registration of research studies

1. Name of the registry: 
2. Unique Identifying number or registration ID: 
3. Hyperlink to your specific registration (must be publicly accessible and will be checked): 

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Provenance and peer review

Not commissioned, externally peer reviewed.

Declaration of competing interest

Each named author has no conflict of interest, financial or otherwise.

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