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Case Report

Not Every Right Iliac Fossa Pain Is Appendicitis: A Case Report of Solitary Caecal Diverticulitis

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Abstract

Caecal diverticulitis is an uncommon condition in western countries and is often confused with the diagnosis of acute appendicitis. A distinction between the two entities is almost made intraoperatively. The management of solitary inflamed caecal diverticulae is still controversial; it ranges from a conservative approach with antibiotics to a right hemicolectomy. We present a case of 27 year old female which presented to the emergency department with symptoms similar to acute appendicitis. However, a CT scan showed signs of perforated caecal diverticulitis, thus an ileocaecal resection was realized. Across our case and a literature review, we try to highlight the difficulty of a preoperative diagnosis of this rare clinical condition and to discuss essentially its surgical management.

Keywords: Caecal diverticulitis, appendicitis, laparoscopy.

INTRODUCTION

Colonic diverticulitis is a common condition in western countries, especially among the elderly population. It affects mainly the sigmoid colon and can be explained by the lack of dietary fibre and high luminal pressure in the colon. However, the right side diverticular disease is unusual in western societies with unknown causes. It represents 3.6% of all colonic diverticular disease and its frequency is estimated to 1 in every 300 appendectomies [1-3]

Solitary cecal diverticulitis is often misdiagnosed and confused with acute appendicitis or sometimes with a tumor of the cecal pole when it presents with a right iliac fossa mass in the elderly population [4, 5].

Case Report

A 32 year old woman presented to the emergency department with a 4 days history of right iliac fossa pain associated with fever and one vomiting episode. She denied any history of altered bowel habits or urinary symptoms and her menstrual periods were normal.

The physical exam found rebound tenderness in her right lower quadrant. Blood investigations showed a white cell count of 12300/mm3 with neutrophilia and CRP of 22. Other haematology and biochemical parameters were unremarkable.

An emergency computed tomography scan was performed to confirm a presumptive diagnosis of appendicitis. However, contrary to the expected results, the CT scan showed normal calibre of the appendix associated with a diverticulum on the medial side of the cecum with hyperdense stone in the lumen. It revealed also cecal wall thickening, pockets of gas and surrounding mesenteric fat stranding due to perforation (Figure-1).

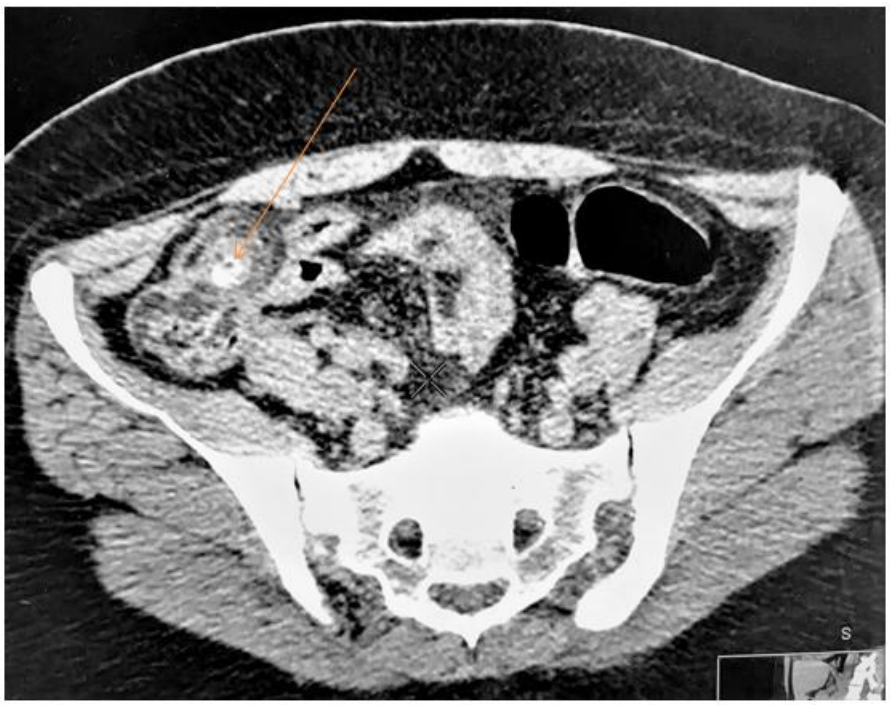

Fig-1:

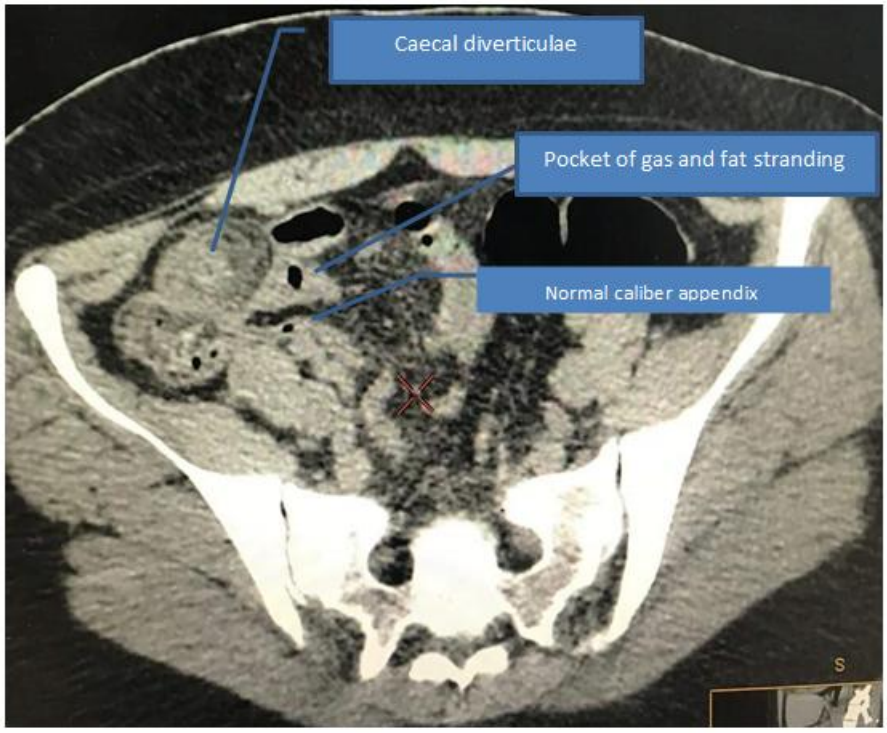

Fig-2:

Figure 1 and 2: Axial CT images demonstrating normal caliber of the appendix, cecal diverticulae, pocket of gas and surrounding mesenteric fat stranding due to perforation.

Surgical exploration, through a 4 cm Mac Burney incision, showed normal appendix and revealed a perforated diverticulum in the medial aspect of the cecum associated with a small amount of clear fluid. Therefore we decided to perform an ileocecal resection with manual end to end anastomosis between the terminal ileum and the ascending colon (Figure-3).

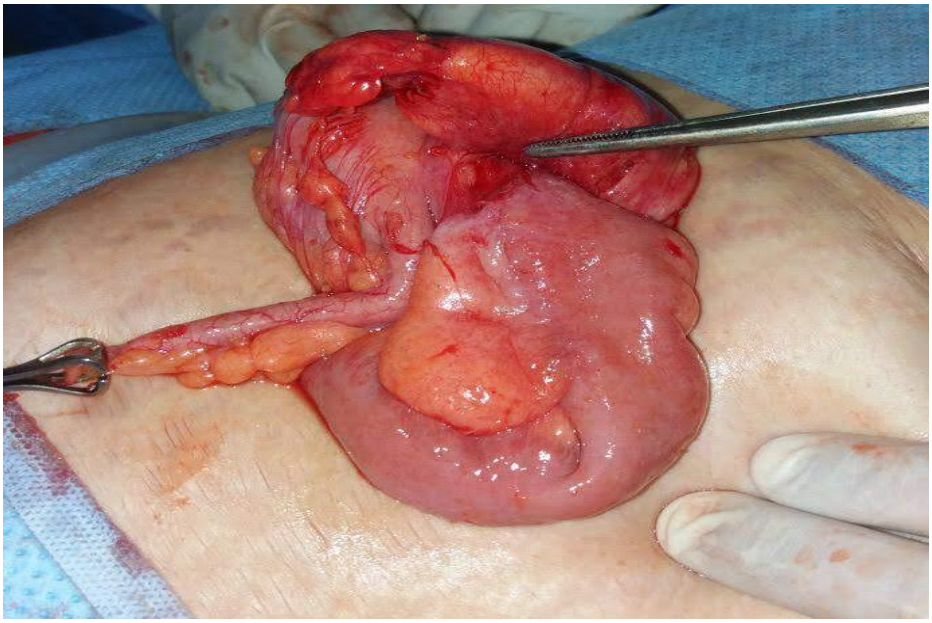

Fig-3:

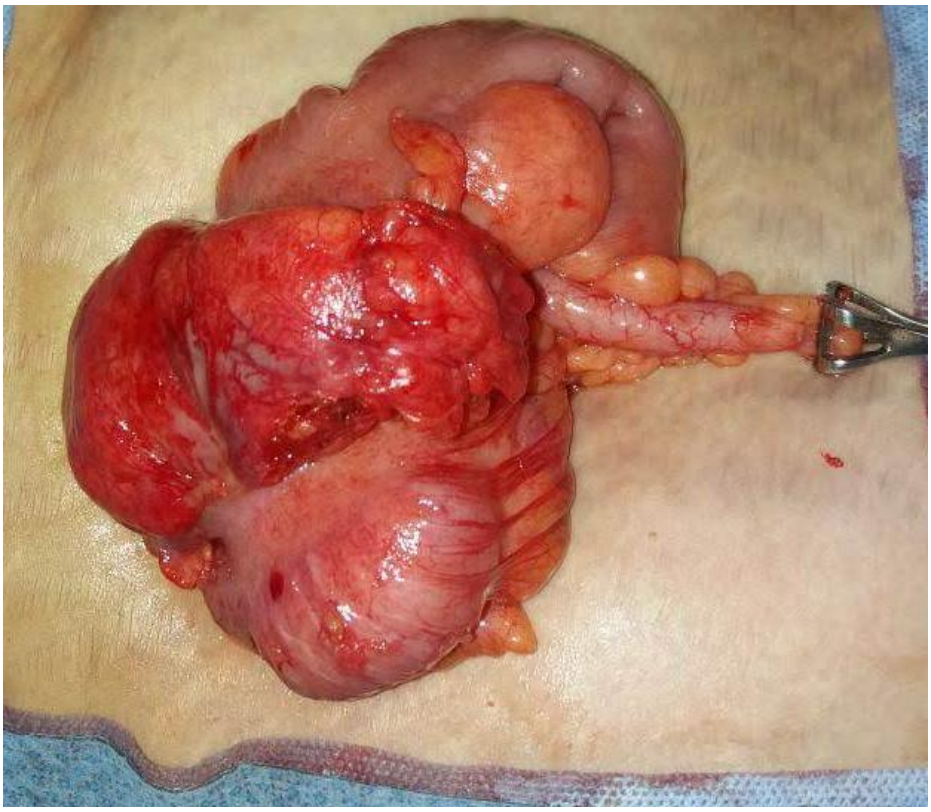

Fig-4:

Figure 3 and 4: operative view of inflamed caecal diverticulae and normal appendix

Histopathologic examination of the specimen revealed solitary diverticulum originating from the caecum with fecaloid material in the lumen. Microscopic Examination showed signs of local peritonitis with a normal appendix.

Post recovery was uneventful and the patient was discharged on the third postoperative day with a planned total colonoscopy in the next weeks to explore the rest of the colon.

DISCUSSION

Solitary cecal diverticulitis is uncommon in western countries where 85% of the diverticula occur in the descending and sigmoid colon [6]. A retrospective analysis of 632 patients, admitted in Queen Elizabeth

hospital for colonic diverticulitis, found that only 2.06% had a cecal diverticulitis [3]. this entity affects mainly patients in their fourth decade with a median age incidence of 44.5 and a male to female ratio of 3:2 [5, 10].

Since described by Poitier in 1912 [7, 8], the preoperative diagnosis of this condition remains a challenge mainly because of his clinical presentation similar to acute appendicitis. Consequently, more than 70% of patients were operated on with a presumed diagnosis of acute appendicitis and the reported frequency is approximately 1 in 300 appendicectomies [9, 1, 3]. However some studies report several atypical symptoms that can help to differentiate those two conditions. As it was for our patient, symptoms in cecal diverticulitis were prolonged for more than 4 days with low systemic toxicity and less frequent vomiting [5]. Diarrhea was also cited as an important distinguishing feature since it occurred in 38% of cases of confirmed cecal diverticulitis [3].

As noted previously, the majority of cecal diverticulitis is misdiagnosed preoperatively and patients are admitted to the operating room for eventual appendectomy. Therefore radiological investigations are essential to differentiate those two conditions and to decide how to manage cecal diverticulitis. Throw a prospective study that analyzed 934 cases with right lower quadrant pain; Chou *et al*., showed that ultrasonography (US) had a sensitivity of 91.3% and a specificity of 99.5% in the diagnosis of solitary cecal diverticulitis [11, 12]. Six major sonographic signs, as reported by Tse-Cheng Chiu *et al*., [13], can suspect the diagnosis: surrounding echogenic fat (50%) and diverticular wall thickening (50%), intradiverticular echogenic material (50%), followed by enlarged regional lymph node (21%). In our case, US was inconclusive and the use of Computed tomography (CT) seemed necessary. Findings with CT scan are similar to those with us and can include also signs of abscess formation or extraluminal air signifying perforation.

Given the low incidence and the absence of randomized clinical trials, the management of this condition still is controversial. According to the benign history of right colonic diverticulitis, many surgeons believe that aggressive treatment should be avoided for non-complicated diverticulitis and in most cases medical management would be more successful [14]. CT guided percutaneous drainage can be associated to antibiotics in case of peridiverticular abscesses larger than 4 cm [15].

On the other hand, some teams prefer aggressive methods, including right colectomy or ileocecal resection, in order to avoid recurrences [6]. Appendicectomy associated to diverticulectomy or to invagination of the diverticulum can be performed in case of less degree of inflammation or doubt of diagnosis [6, 9].

Despite the lack in the literature about the usefulness of Laparoscopy in the management of cecal diverticulitis, it is clear that it allows to differentiate this entity from acute appendicitis or other causes of right iliac fossa pain and to perform emergency resection [6].

CONCLUSION

Solitary caecal diverticulitis is a rare condition in western countries and is often confused with acute appendicitis. The frequent use of CT scan in case of febrile right iliac fossa pain can lead to pre-operative diagnosis and consequently helps surgeons to select the best way to manage it. If surgery is necessary, laparoscopy can confirm the diagnosis and allows surgeons to treat this entity with low morbidity and excellent outcomes.

Declarations

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Availability of data and supporting materials

Not applicable.

Authors' Contributions

MB was the principal investigator; RA, AB, and BA collected and analysed patient data; MB, AB, and BA wrote the report and all authors approved the report.

Competing Interests

The authors declare that they have no competing interests.

Ethics approval and consent to participate

Not applicable.

Consent for Publication

Written informed consent was obtained from patients for publication of this manuscript and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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