Radiology Case Reports 18 (2023) 2359–2361

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journal homepage: www.elsevier.com/locate/radcr

Case Report

A rare case of ruptured appendiceal diverticulitis: A significant surgical pathology ☆

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ARTICLE INFO

Article history:
Received 2 February 2023
Revised 9 March 2023
Accepted 2 April 2023

Keywords:
Appendiceal diverticulitis
Perforated appendix
Phlegmon

ABSTRACT

Appendiceal diverticulitis is a rare pathology which is distinctly different to acute appendicitis and associated with higher rates of morbidity and mortality. Furthermore, diagnosis is often retrospective on histopathological analysis of appendicectomy specimens due to the atypical clinical and radiological features. Herein, we present a case of ruptured appendiceal diverticulitis in a young patient with atypical clinical features and a radiologically normal appearing appendix in close proximity to an inflammatory phlegmon. This case highlights the importance of maintaining a high clinical suspicion of surgical pathology and considering atypical diagnosis in patients with inflammatory changes in the right iliac fossa.

Introduction

Appendiceal diverticulosis is a rare pathology observed between 0.014% and 2.1% of appendicectomy specimens [1,2]. Despite this it is a clinically significant pathology with unclear etiology and pathogenesis. Due to the rarity and atypical clinical and radiological features, diagnosis is often challenging. We present a case of ruptured appendiceal diverticulitis causing inflammatory phlegmon and small bowel obstruction, however preoperative radiological findings demonstrated a normal appearing appendix. We highlight the significance of this pathology and the clinical challenges faced when managing patients with appendiceal diverticulosis.

Case report

A 51-year-old gentleman presented with acute right lower quadrant abdominal pain and vomiting, on a background of 2 months of intermittent right lower quadrant pain. His past medical history of unremarkable. Contrast enhanced computed tomography (CT) of the abdomen and pelvis demonstrated dilated loops of small bowel with gradual tapering toward the terminal ileum (TI) associated with phlegmonous change. The appendix appeared normal with the tip of the appendix noted to be near the phlegmon (Fig, 1). Terminal ileitis was the presumed diagnosis, and the patient was managed nonoperatively with bowel rest and intravenous antibi-

☆ Competing Interests: The authors have declared that no competing interests exist.

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https://doi.org/10.1016/j.radcr.2023.04.003

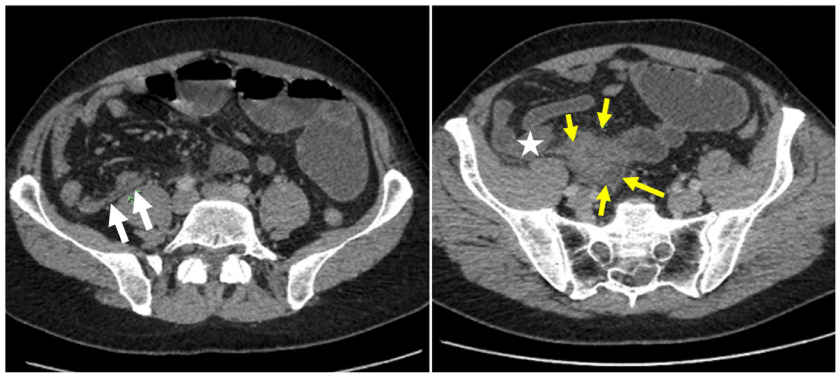

Fig. 1 – Axial images of the initial CT scan demonstrating an inflammatory phlegmon in the right iliac fossa (yellow arrows) and thickened TI (white star), the appendix is visualized (white arrows) and is normal in appearance however is situated near the phlegmon.

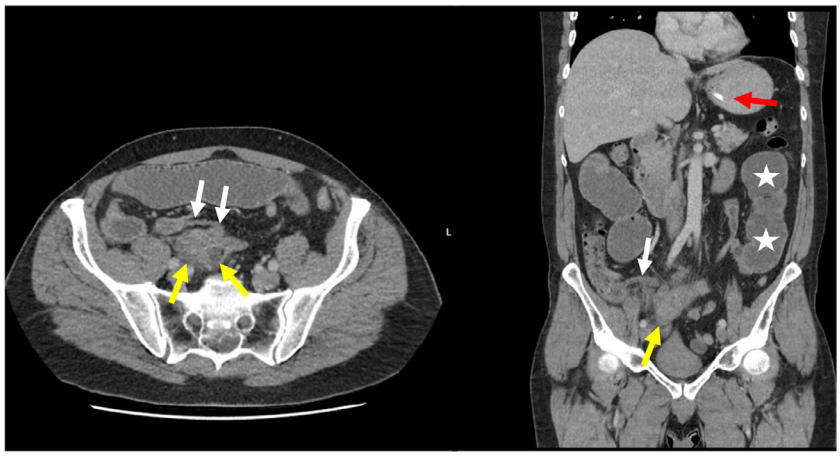

Fig. 2 – Axial and coronal views of a repeat CT scan demonstrating a collection in the right iliac fossa (yellow arrows), with a normal appearing appendix which appeared to communicate with the collection (white arrows). The small bowel is dilated (white star) and a nasogastric tube is seen in the stomach (red arrow).

otics. Stool cultures were taken to exclude an infectious etiology, with plans for an outpatient colonoscopy. On day 2 of admission, the patient developed vomiting, obstipation and low-grade fever. A repeat CT scan demonstrated a right iliac fossa collection associated with a small bowel obstruction, with the normal appearing appendix with its tip communicating with the collection (Fig. 2).

The patient proceeded to an exploratory laparotomy in which a small bowel obstruction was found secondary to inflammatory adhesions adjacent to an abscess cavity in the right iliac fossa involving the appendix. Mucinous discharge from the tip of the appendix into the abscess cavity was noted. There was no palpable lesion in the appendix itself or the caecum. There were no other intraperitoneal deposits of mucin and there was no peritoneal disease seen. Due to adherence of the small bowel serosa to the abscess cavity, with subsequent serosal tear on blunt dissection, a segmental small bowel resection and primary anastomosis was performed in addition to an open appendicectomy.

Histopathological analysis of the appendix demonstrated a ruptured appendiceal diverticulum and features consistent with chronic diverticulitis (Fig. 3). Extracellular mucin was observed however there were no features of low-grade appendiceal mucinous neoplasm (LAMN) or other malignancy. The small bowel specimen was normal. Postoperatively, the patient developed a small pelvic collection managed with antibiotic therapy. The patient recovered well and was followed up in the community with no ongoing symptoms.

Discussion

Appendiceal diverticulosis is clinically significant as it is associated with appendiceal neoplasm, increased rates of perforation and higher mortality than acute appendicitis [1–4]. Diagnosis is most often made retrospectively after appendicectomy is performed [4–6]. Despite this, appendiceal diverticulosis and diverticulitis are distinctly different pathological processes from acute appendicitis and often the clinical history is atypical for acute appendicitis [5,7]. Management of appendiceal diverticulitis includes appendicectomy, with la-

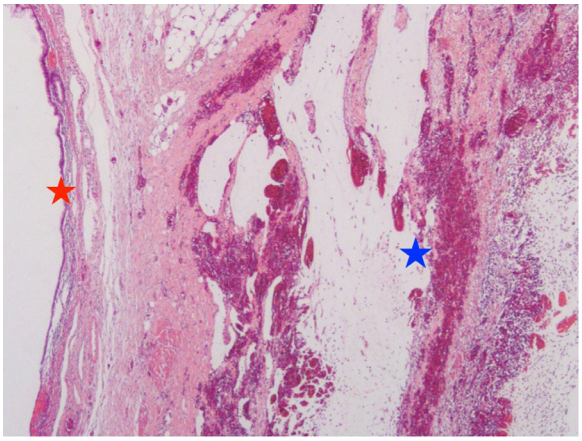

Fig. 3. – Hematoxylin and eosin stain demonstrating normal appearing appendix mucosa (red star), an appendiceal diverticulum with moderate-severe active inflammation and mucosal ulceration (blue star) (Photo taken with magnification 20X).

paroscopic approach considered safe in uncomplicated disease. Prophylactic appendicectomy for asymptomatic appendiceal diverticulosis has been advised due to the association with malignancy and perforation, however there is no consensus regarding this [4]. Thorough histopathological analysis is essential to exclude malignancy [1].

This case highlights the diagnostic difficulties associated with appendiceal diverticulitis. Recent retrospective reviews have identified features on CT which may be suggestive of appendiceal diverticulitis as opposed to acute appendicitis. Peri-appendiceal extraluminal fluid collections and periappendiceal fat stranding and the absence of appendicolith or intraluminal fluid levels are the most significant features indicative of appendiceal diverticulitis [8,9]. This is consistent with our case, in which a periappendiceal extra-luminal fluid collection was observed alongside an appendix without appendicolith or intraluminal fluid level.

Despite the rarity of appendiceal diverticulitis, the clinical significance renders it an importance differential diagnosis to consider [1,3,4]. Furthermore, as this case highlights, appendiceal diverticulitis and its sequelae can be observed in cases with a radiologically normal appearing appendix. Clinicians need to maintain a high index of suspicion of such pathologies, and a low threshold for surgical intervention, in patients with atypical clinical features and inflammatory changes in the right iliac fossa.

Patient consent

Written informed consent for publication of this case was obtained from the patient prior to writing or submitting this case for consideration of publication.

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