

Acute Appendagitis Presenting with Features of Appendicitis: Value of Abdominal CT Evaluation

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Key Words

Appendagitis · Appendicitis · CT scan

Abstract

We report a case of acute appendagitis in a patient who presented initially with typical features of acute appendicitis. The diagnosis of acute appendagitis was made on pathognomonic signs on computed tomography (CT) scan. Abdominal pain is a common surgical emergency. CT is not always done if there are clear features of acute appendicitis. The rare but important differential diagnosis of acute appendagitis must be borne in mind when dealing with patients with suspected acute appendicitis. A CT scan of the abdomen may avoid unnecessary surgery in these patients.

Introduction

Acute appendicitis is one of the most common causes of abdominal pain presenting to emergency medicine departments. In the clinical evaluation of abdominal pain it is important that the complete spectrum of differential diagnoses are properly considered. The main such differentials that are often considered include acute cholecystitis, ureteric colic, pancreatitis, diverticulitis, urinary tract infections including cystitis, lymphadenitis, bowel ischaemia and subacute bowel obstruction.

We describe a patient whose symptoms initially suggested appendicitis. However there were some atypical features in the clinical presentation and therefore a CT scan of the abdomen was arranged which led to the rare diagnosis of acute appendagitis.

Case Report

A 57-year-old female presented with severe abdominal pain in the right iliac fossa for two days. She had not experienced any circum-umbilical pain. She had not experienced any change in bowel habit, vomiting, dysuria or back pain. She had been in good health previously and was taking no medication at the time. She was married with children and her menstruation had stopped a few years previously. She did not smoke and was a social drinker.

On examination the patient was not dehydrated, pulse rate was 90 bpm, blood pressure 130/80 mm Hg and respiratory rate was normal. Abdominal examination revealed right upper and lower quadrant tenderness. The patient was admitted for observation and developed fever and tachycardia with a pulse rate of 100 bpm. Blood tests showed a mild neutropenia and raised CRP, an ultrasound of the abdomen was normal with no evidence of gallstones.

A clinical diagnosis of possible retrocaecal appendicitis was made in view of the right upper quadrant tenderness in addition to the relatively mild lower quadrant tenderness and a CT scan of the abdomen was arranged. The CT scan showed typical evidence of acute appendagitis as evidenced by an oval lesion with a rim of hyperattenuation and a central area of hyperattenuation ('target lesion') (fig. 1, fig. 2, fig. 3) and accordingly the patient was treated conservatively with intravenous cefuroxime and metronidazole and went on to make a complete recovery.

Discussion

Epiploic appendices (appendices epiploicae) are small (0.5–5.0 cm long) pouches of peritoneum, each of which is supplied by one or two arterioles and a venule, that protrude from the external serosal surface of the colon into the peritoneum. They occur in the rectosigmoid junction (57%), ileocaecal region (26%), ascending colon (9%), transverse colon (6%) and descending colon (2%) [1].

Appendices epiploicae normally originate in anterior and posterior rows parallel to the external surface of the three longitudinal bands of muscle in the colon known as taenia coli. They were first described by Vesalius in 1543. The pedunculated shape, free range of movement and tortuous nature of their blood supply makes appendices epiploicae vulnerable to torsion or ischaemic changes [2].

Primary epiploic appendagitis is a rare, inflammatory process that results from a disturbance in the vasculature such as torsion or venous thrombosis of the epiploic appendage involved [2]. The areas of the colon that are most commonly affected by acute appendagitis are (in decreasing order of frequency) the sigmoid colon, caecum, descending colon and ascending colon [3, 4].

Appendagitis tends to be benign and self-limiting in nature; since most patients tend to present with localised abdominal pain, non-specific clinical symptoms and because of the infrequent incidence of this disease, there is a greater margin for misdiagnosis. Despite this it has been reported, and our case history demonstrates, that epiploic appendagitis does have a characteristic CT and ultrasound presentation that would allow definitive diagnoses to be made [5, 6].

Oval pericolonic fatty nodules with a hyperdense ring and surrounding inflammation are the common features seen on CT scan in this condition. Symptoms of bowel obstruction, pancreatitis, cholecystitis, biliary pain, pyelonephritis and gastroesophageal reflux disease are also common presenting complaints and causes of abdominal pain.

Occasionally this condition may be diagnosed on ultrasound where a solid hyperechoic noncompressible ovoid mass surrounded by a hypoechoic ring is seen adherent to colonic wall. This is however a difficult diagnosis to make on ultrasound and CT scans are more

reliable. A CT scan also helps to visualise normal appendix and thereby rules out acute appendicitis as shown in our case.

The pathognomonic CT features of acute appendagitis include a ‘target lesion’ with a central region of hyperattenuation in a fat density lesion of around 2–4 cm with an oval shape and a rim of hyperattenuation due to surrounding inflammation. The diameter of the colonic wall is mostly regular without signs of thickening. The differential diagnosis of the CT appearance of acute appendagitis includes acute omental infarction, sclerosing mesenteritis, fat containing tumour, diverticulitis and appendicitis [7]. The CT features of omental infarction include well circumscribed triangular or oval heterogenous fatty mass with a whorled pattern of concentric linear fat stranding. Additionally the lesion in omental infarction will be nonenhancing with heterogenous attenuation.

In our patient there were no features to suggest a tumour such as liposarcoma or angiomyolipoma. Liposarcoma is often retroperitoneal and angiomyolipoma often arises in the kidney. Additionally the biochemical parameters studied suggested acute inflammation rather than tumour.

Sclerosing mesenteritis is another differential diagnosis for acute appendagitis on CT scan. Acute appendagitis is a small focal lesion and does not involve the mesentery of the small intestine. Sclerosing mesenteritis would appear as a larger lesion most commonly located at the root of the small intestinal mesentery that does not abut the colon. In addition, clinically, sclerosing mesenteritis does not present with acute abdominal pain. There will also be no hyperattenuated ring or central focal region of hyperattenuation. In sclerosing mesenteritis there is some degree of fibrosis, chronic inflammation and fat necrosis. Unlike in tumours these lesions do not invade blood vessels but surround mesenteric vessels, giving a characteristic radiological appearance referred to as the ‘fat ring sign’.

Distinguishing acute appendagitis from diverticulitis is normally unchallenging as diverticulitis would result in thickening of a segment of colonic wall and extraluminal air may be present. In addition, diverticulae tend to be multiple and other diverticulae would be evident.

With such imaging modalities available, unnecessary surgery, with obvious risks to the patient, is easily avoided. In most cases noninvasive investigations and a conservative line of treatment with appropriate analgesia is the best management protocol that leads to complete recovery. On extremely rare occasions, pericolonic abscess or severe haemorrhagic necrosis may complicate acute appendagitis and patients must be kept in hospital until resolution of symptoms.

In patients with indeterminate findings on CT scan a diagnostic laparoscopy would be useful [8–10]. Such an approach would be helpful even if the appearances reflect complicated appendicitis [11]. On laparoscopy the actual torsion itself is seldom seen. During laparoscopy the inflamed epiploic appendage is normally excised after simple ligation [11].

Fig. 1. CT scan of abdomen.

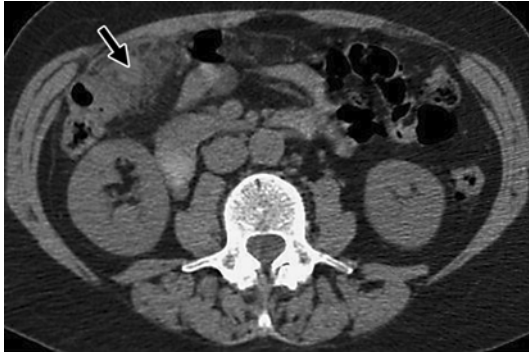


Fig. 2. CT scan of abdomen.

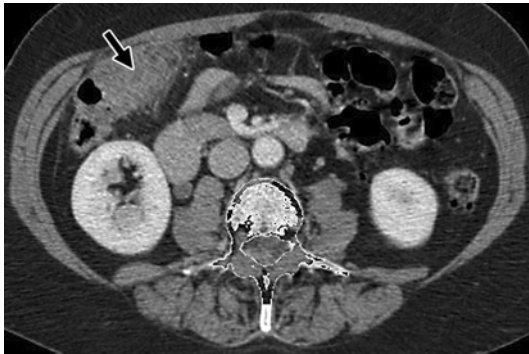


Fig. 3. CT scan of abdomen.



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