CASE REPORT

Ischaemic diverticular disease may mimic acute appendicitis

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SUMMARY

An 81-year-old man with a medical history significant for diverticulosis and irritable bowel syndrome presented to the emergency department with a 1-day history of periumbilical pain that woke him from sleep and ultimately localised to his right lower quadrant. He reported nausea, anorexia and chills but denied vomiting, diarrhoea, melena, hematochezia or fever. His physical exam was notable for focal tenderness at McBurney's point. Diagnostic information included a normal white blood cell count and an abdominal CT scan that demonstrated a normal appendix with no other pathology noted. The patient opted to proceed with laparoscopy where a normal appendix was found. The caecum, however, contained a large ischaemic diverticulum not noted on CT scan. Following laparoscopic ileocectomy, pathology demonstrated haemorrhage, inflammation, oedema and full thickness necrosis of the caecal wall. Recovery was uneventful; the patient was discharged from the hospital 3 days following surgery.

BACKGROUND

In a patient presenting with the classic signs and symptoms of appendicitis, the CT scan documented a normal appearing appendix. Our admitting team and consulting surgeon faced the dilemma of trusting consistent physical examination findings or the results of a reliable imaging modality. In modern medicine, imaging often trumps the history and physical examination. Physicians must make decisions about management when clinical findings suggest pathology not evidenced by imaging. This case highlights the importance of retaining a strong suspicion for disease and responding appropriately even when an imaging modality does not corroborate a particular diagnosis.

CASE PRESENTATION

An 81-year-old man with a medical history significant for diverticulosis and irritable bowel syndrome presented to the local emergency department with a 1 day history of abdominal pain. The pain began in the periumbilical area and woke him from sleep. Over the course of several hours, the pain localised to his right lower quadrant. A bowel movement of firm stool did not relieve his pain. He reported nausea, anorexia and chills but denied diarrhoea, vomiting, melena, hematochezia, recent weight loss or fever. Four years ago, the patient underwent a colonoscopy that revealed diverticulosis, haemorrhoids and benign polyps. Prior to the onset of abdominal pain, he was in his usual state of

health. The patient did not report any family history of gastrointestinal issues, denied tobacco use and exercised daily.

On examination, he had a temperature of 98.9°F and 100% oxygen saturation on room air. His initial blood pressure was 170/66 mm Hg. On abdominal exam, the patient consistently reported localised tenderness to palpation at McBurney's point. His abdomen was flat, soft, with normal bowel sounds, no rebound tenderness and no voluntary guarding. No masses or hernias were palpable.

Laboratory data demonstrated a normal white blood cell count of 6900/mm³ along with an otherwise normal complete blood count. A metabolic panel showed normal electrolytes with the exception of a mildly elevated glucose of 211 mg/dL. A CT scan of the abdomen and pelvis with contrast demonstrated a normal appearing appendix without evidence of acute appendicitis. Diverticulosis without diverticulitis was documented.

While in the emergency department, the patient received intravenous morphine and ondansetron which dulled but did not eliminate the pain.

DIFFERENTIAL DIAGNOSIS

On the basis of the patient's complaint of abdominal pain with associated nausea and anorexia, as well as McBurney's point tenderness, our admitting team retained our strong clinical suspicion for appendicitis.

TREATMENT

The consulting surgeon gave the patient the option of watchful waiting with serial examinations versus immediate diagnostic laparoscopy. The patient opted for the latter and underwent surgery that evening where a normal-appearing appendix was found. The caecum, however, contained a large, purplish, ischaemic diverticulum, which was believed to be the source of the pain.

OUTCOME AND FOLLOW-UP

Following the laparoscopic ileocectomy, pathology confirmed haemorrhage, inflammation, oedema and full thickness necrosis of the caecal wall. The patient had no postoperative complications and was discharged from the hospital 3 days after surgery. On outpatient follow-up with his primary care physician, the surgical incision site was healing well without signs of infection.

DISCUSSION

Approximately 10–20% of those affected with diverticulosis (a disease increasing in prevalence

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Learning points

- ▶ Physical examination findings remain as important as imaging in determining the next step in diagnosis and treatment.
- ▶ Typical presentations of known diseases can mimic presentation of a similar, but independent disease process.
- ▶ Acute caecal diverticulitis resembles acute diverticulitis in presentation and examination findings and should be considered in the differential diagnosis of right lower quadrant pain.

with age) suffer from diverticulitis.¹ Less than 5% of all cases of diverticulitis affect the right colon.² However, as early as 1947, the medical literature contained over 100 cases of caecal diverticulitis preoperatively diagnosed as acute appendicitis.³ Prior to availability of ultrasound (US) and CT scan, the correct diagnosis could only be made postoperatively. Even with these imaging modalities, preoperative diagnosis of caecal diverticulitis remains difficult because its signs and symptoms closely mimic those of appendicitis. In 2008, *The World Journal of Emergency Surgery* published four cases preoperatively diagnosed as appendicitis but later intraoperatively diagnosed as caecal diverticulitis. The CT scan, used in only one of the four cases, revealed a caecal mass with surrounding inflammation; the US images were normal in both of the two cases in which it was used.⁴ On the basis of a small retrospective study, radiologists were more likely to differentiate between usual acute appendicitis and

appendiceal diverticulitis on CT scan after discussion about radiographic differences between the distinct disease entities.⁵ CT findings suggesting caecal diverticulitis include circumferential thickening of the caecal wall, pericolic inflammation and evidence of diverticula.⁶ Ischaemic necrosis should be considered when these same CT findings are present without evidence of diverticula.⁶ A heightened awareness of this rare but real disease process may allow for more preoperative diagnoses. This proves clinically significant if physicians choose antibiotics instead of surgery as initial management in early onset caecal diverticulitis.

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