Unusual association of diseases/symptoms

Appendicitis and uterine abscess: presentation of an unusual fistula between the gynaecological and gastrointestinal tracts

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The authors present the case of a 65-year-old woman with clinical and radiological evidence of pelvic sepsis and a medical history of endometrial ablation 20 years previously. She underwent laparotomy after failing to settle with a course of intravenous antibiotics and her appendix was found to have perforated into the uterus with abscess formation which had not discharged vaginally presumably due to widespread intrauterine synechia following her endometrial ablation. She underwent appendectomy and hysterectomy and made a full recovery with no complications. Macroscopic and microscopic examination suggested the appearances are those of an abscess of the uterine fundus with part of the appendix incorporating into the abscess mass.

BACKGROUND

No cases of an appendicitis abscess relating to the uterine fundus have been reported in the literature to our knowledge. It is often thought that fistulae between the gastrointestinal and gynaecological tracts do not form in the presence of a uterus, however this case suggests that this is a possibility and this has implications for the investigation of patients presenting with offensive discharge per vaginum.

In addition, this patient had a previous endometrial ablation which may have had a significant effect on her presentation and management. As this procedure is becoming more widespread this has important implications.

CASE PRESENTATION

We present the case of a 65-year-old lady who presented with a 2 week history of constant lower abdominal pain, nausea and anorexia, with no change in bowel habit. She had no urinary or gynaecological symptoms of note. Her medical history includes hypertension, atrial fibrillation, left cerebellar infarct and her surgical history consists of a caesarean section and a seemingly uneventful endometrial ablation 20 years ago following which she was amenorrhoeic. She was taking regular warfarin, rampril and bendroflumethiazide and was a smoker. Examination on admission revealed a temperature of 37°C, heart rate of 93 beats per min, blood pressure of 154/68 mm Hg, respiratory rate of 14 breaths per min and saturations of 94% on air. Abdominal examination revealed tenderness in the lower abdomen with no guarding and bowel sounds present. Rectal examination was unremarkable.

INVESTIGATIONS

Routine investigations showed haemoglobin 17.1 g/dl, white cell count $20.6 \times 10^9/l$, neutrophils $16.6 \times 10^9/l$, platelet $353 \times 10^9/l$ and C reactive protein 279 mg/l. Her international normalised ratio was 4.1. All other biochemical investigations

were normal. Urinalysis showed protein, blood and ketones. Chest x-ray did not reveal any abnormality.

Initial CT scan showed an ill-defined mixed density in the midline of the pelvis, diverticular change was evident and the sigmoid colon showed diffuse wall thickening which could not be separated from the posterior aspect of the uterine fundus where there was altered density within the myometrium (figure 1). The appendix was noted to point medially and into the inflamed lesion, the proximal portion appeared normal. The report suggested it was most likely to represent a developing diverticular abscess with involvement of the uterine fundus but an appendix abscess could not be entirely excluded (figure 2).

DIFFERENTIAL DIAGNOSIS

The working diagnosis was diverticulitis with abscess formation. The differential included appendix abscess and least likely (from the CT information) was the possibility of a perforated sigmoid tumour with abscess formation.

Figure 1 Axial CT image demonstrating pelvic abscess in this case.

Figure 2 Coronal CT image demonstrating pelvic abscess in this case.

TREATMENT

She was started on intravenous antibiotics (amoxicillin, metronidazole, gentamicin) for presumed diverticulitis. Intravenous antibiotics were continued for a 9 day course however, her symptoms were ongoing and her inflammatory markers remained elevated (white cell count $18.2 \times 10^9/l$, neutrophils $14.4 \times 10^9/l$ and C reactive protein 171 mg/l) and a repeat CT scan was performed showing a slight increase in size of the central pelvic collection, again the proximal sigmoid colon was noted to be adjacent to the collection but not definitely originating from the colon. The collection was noted to abut the uterus and there was noted to be an increase in the degree of fluid seen within the superior aspect of the uterus. She was reviewed by the gynaecology team who noted no obvious gynaecology problem after history and examination. She continued on intravenous antibiotics and was taken to theatre 13 days after admission.

A joint procedure with the general surgeons and gynaecologists involved a laparotomy which revealed apparent appendicitis which seemed to have perforated into the uterine fundus. She underwent an appendicectomy, drainage of the abscess and total abdominal hysterectomy and bilateral salpingoophorectomy under the care of the colorectal surgeon and gynaecologist. She made a good postoperative recovery with no complications.

OUTCOME AND FOLLOW-UP

Macroscopic examination of the specimen showed that the entire serosa of the uterus was covered by haemorrhagic adhesions. The appendix protruded from the uterus. On sectioning of the uterus there was a large abscess cavity in the fundus. The appendix was identified as having a defect at the tip. Microscopic examination of the fundus showed an abscess cavity with suppuration and acute necrosis, adherent to the cavity was a small amount of appendiceal tissue which showed little in the way of acute inflammation. Focal adenomyosis in the myometrium and a benign endometrial polyp were seen. The endometrium

was noted to be inactive. The cervix was unremarkable. The appendix showed fibrous obliteration of the tip and mild active inflammation as well as a small sessile serrated lesion in the appendix, given the histological appearances a follow-up colonoscopy was advised. The appearances were those of an abscess of the uterine fundus with part of the appendix incorporated into this abscess mass. There was no malignancy. This histology report was interesting as the amount of appendiceal inflammation was less than might be expected raising the possibility of primary uterine sepsis. However, multi-disciplinary discussion has led us to conclude that appendicitis was indeed the most likely primary cause of the uterine abscess.

Clinical follow-up reveals that the patient remains well. She is awaiting a colonoscopy as advised due to the presence of the small serrated polyp in her appendix, but has no symptoms of change of bowel habit.

DISCUSSION

Appendicitis is a common condition with well-recognised complications including perforation and abscess formation. Perforation of appendicitis occurs in 18–35% and there are reports in the literature of perforated appendicitis causing abscess formation into other surrounding tissues including a tubo-ovarian abscess,¹ retroperitoneal abscess (including a case report of rectal perforation from retroperitoneal abscess),² through the abdominal wall,³ obstructing the ureter,⁴ thigh emphysema and osteomyelitis of hip,⁵ scrotum with patent processus vaginalis.⁶ However, to our knowledge no case of uterine abscess secondary to appendicitis has been reported. We believe the fact that the uterine cavity had been partially obliterated due to previous endometrial ablation may have prevented drainage at an earlier stage thereby changing the course of this patient's illness.

Endometrial ablation is generally considered to have few complications. Abscesses have been reported after treatment with endometrial ablation however, these have only been reported as presenting within the first few weeks after surgery.^{7–9} There is a risk of full thickness uterine damage after endometrial ablation and this may represent another mechanism for the association of appendicitis and uterine abscess in this case as there is the possibility the appendix adhered to the uterus at the time of the ablation procedure.

The uterus has always been considered a robust, thick-walled organ and it is generally assumed that fistulae between the gynaecological and gastrointestinal tract do not form in its presence. However endometrial ablation may attenuate the uterine wall and lead to altered pathological processes.

Learning points

- ▶ Although appendicitis is a very common condition it continues to present in novel ways.
- ▶ With the increase in endometrial ablation to try to reduce hysterectomy rates, uterine abscess as a consequence of other pelvic sepsis may become more frequent.
- ▶ Management of patients with uterine sepsis in the presence of previous endometrial ablation should take into account that spontaneous drainage is unlikely and early operative intervention may be warranted.

Competing interests None.

Patient consent Obtained.

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