



A 61-year-old male with persistent left-sided chest pain

Case report

A 61-year-old male was referred to the outpatient clinic at the Llandough Hospital (Penarth, UK) with persistent left-sided chest pain and a pleural effusion. Apart from mild exertional dyspnoea, he had no other respiratory symptoms of note. He had a past history of ulcerative colitis and had undergone a total colectomy 10 years previously after a severe exacerbation failed to settle with medical therapy. During the operation, there was significant peritoneal soiling after a sealed perforation in the transverse colon gave way. The patient spent an eventful post-operative course in the intensive care unit, where he required further laparotomies for drainage of subphrenic, subhepatic and pelvic collections. A chest drain was also inserted to treat a left-sided empyema. The patient's condition slowly improved, and he was eventually discharged from hospital 8 weeks later.

During the 6 years prior to his current consultation, the patient had been admitted to hospital on a number of occasions, with episodes of pyrexia, rigors and shortness of breath. Each episode was diagnosed as pneumonia and was successfully treated with third-generation parenteral cephalosporins. On each occasion, he was noted to have a left-sided pleural effusion, which was never sampled by thoracentesis.

On clinical examination, he was found to have a dull percussion note at the left base with reduced breath sounds. A chest radiograph revealed a collection at the left base.

Task 1

What further diagnostic investigations would you suggest?

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Answer 1

The following investigations could be performed: computerised tomography (CT) scan of the thorax and upper abdomen; magnetic resonance imaging (MRI) scan of the thorax and upper abdomen; and white cell scan.

CT and MRI scans of the thorax and abdomen confirmed the presence of a thick-walled cavity lying above the left hemidiaphragm. Further investigations included a white cell scan that demonstrated little activity in this area, and a diagnosis of an inactive empyema was made.

Further surgical treatment was discussed with the cardiothoracic surgeons; however, neither they nor the patient wanted to progress with any further interventions. He remained under follow-up, but continued to suffer episodes of pyrexia and rigors. During his last admission, whilst being treated for septicaemia, he underwent a repeat CT scan of his abdomen and thorax with oral contrast (figure 1).

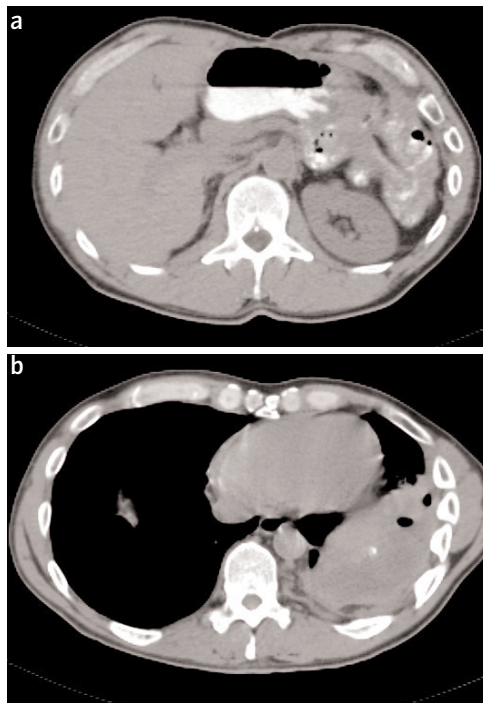


Figure 1
CT scans of the a) abdomen and b) thorax.

Task 2

Interpret the CT scans.

Answer 2

In figure 1a, there is a tract originating in the jejunum. Oral contrast can be seen in both the stomach and small intestine. In figure 1b, there is a thick-walled cavity containing two tracts at the left base. Contrast media can also be seen in the cavity.

Task 3

Suggest a unifying diagnosis.

Task 4

What therapeutic intervention would you suggest?

Answer 3

Enteropleural fistula.

Answer 4

Removal of enteropleural tract, decortication and washout of the left lower lobe.

Discussion

A fistula is defined anatomically as an abnormal communication between a hollow viscus and some other organ or epithelial surface. To be classified as a fistula, the communication must remain open long enough to present a clinical problem. Fistulae can be classified according to the following: sites of origin and termination; whether they are external or internal; and, finally, according to their output. Internal fistulae are usually a result of a local perforation of diseased bowel, with abscess formation that affects an adjacent structure. In this case, it is believed that the initiating process for fistula formation occurred during the post-operative period when the patient developed a left-sided subphrenic abscess and a left-sided empyema. Abdominal surgery for inflammatory bowel disease is a common cause of fistula formation, accounting for more than half of all postoperative fistulae [1].

The use of oral contrast media in conjunction with CT (also known as a fistulogram) provided the diagnosis in this case. It may seem surprising that the diagnosis was missed on previous CT and MRI scans of the thorax and abdomen performed without oral contrast. However, it has been shown that the use of hyperdense oral contrast media with CT scanning is superior in the detection of fistulae [2], since it accurately differentiates between intraluminal and extraluminal structures.

The definitive treatment of fistulae that do not close spontaneously is surgical resection. In this patient's case, removal of the fistula was necessary as it was the source of septicaemia on each occasion. The procedure involves removal of the segment of the jejunum from which the fistula originates, with end-to-end anastomosis. The sutured bowel will need to be placed in an area not affected by inflammation or any other abnormality. In addition, the fistula will need to be dissected distally, which will involve a thoracotomy, decortication and washout.

Origins of pleural fistulae that have been documented include the bronchus [3], oesophagus [4], pancreas [5], biliary system [6], stomach [7], colon [8] and subarachnoid space [9]. Surprisingly, there has been no previous documentation of an enteropleural fistula.

References

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