

An 81 Year Old with Back Pain

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You see an 81-year-old man in the emergency department. He has been troubled by abdominal and back pain that has been worsening over the last two days. He has smoked 20 cigarettes a day for the last 60 years. On examination his heart rate is 110 beats per minute and his blood pressure is 130/80 mmHg. He is tender over the central abdomen and you feel a pulsatile mass above the umbilicus. You request a CT scan of the abdomen.

What do you think the most likely diagnosis is?

- A A left renal tumour
- B An abdominal aortic aneurysm
- C An aneurysm of the common iliac artery
- D Cancer of the head of the pancreas

Answer

The answer is B

The CT scan shows a calcified aortic wall. The antero-posterior diameter of the aorta is six centimetres. There is also a mural thrombus lining the aortic wall which is seen as grey in colour. There is no extravasation of contrast (leaking of the contrast into the abdominal cavity) which suggests that the aneurysm is not leaking.

This is why the following answers are incorrect

- A The left superior renal pole is seen on this CT with a normal pattern of parenchymal enhancement following the administration of intravenous contrast. The kidney is retroperitoneal like the aorta, but lies more posteriorly within the left flank.
- C The aorta bifurcates more caudally / distally into common iliac arteries.
- D Whilst the head of the pancreas is retroperitoneal like the aorta, the pancreas lies anterior to the aorta at the level of the origin of the coeliac trunk from the aorta (which is higher than this CT slice).

Learning Bite

Abdominal aortic aneurysms are usually due to degeneration in the media (the middle part) of the arterial wall. This leads

to gradual dilatation of the lumen of the vessel and weakness of the vessel wall leading to aneurysm rupture.

Risk factors associated with the development of an abdominal aortic aneurysm include¹:

1. Increasing age.
2. Smoking.
3. Hypertension.
4. Atherosclerosis (Male gender): Aneurysms are 4-fold more common in men than in women with a prevalence at 65 – 75 years of 16.9 % for men and 3.5 % for women.²
5. Family history: The risk of developing an abdominal aortic aneurysm is between 1–2% in the general population.³ In patients with at least one 1st degree relative the risk is between 13–32%. Aneurysms also occur at a younger age and are more likely rupture in patients with a family history the condition.
6. Syndromes and diseases associated with abnormal connective tissue and collagen production, such as Marfan's and Ehlers-Danlos syndromes.
7. Mycotic aneurysm : A rare phenomenon occurring either when a new aneurysm is produced by infection of the arterial wall, or when a pre-existing aneurysm becomes infected.

The UK pilot programme for screening of abdominal aortic aneurysm in men over 65 started in 2012. Men will be offered an ultrasound as part of the screening programme. The incidence of abdominal aortic aneurysm in women is too low to warrant population screening in this group. (www.aneurysmscreening.co.uk).

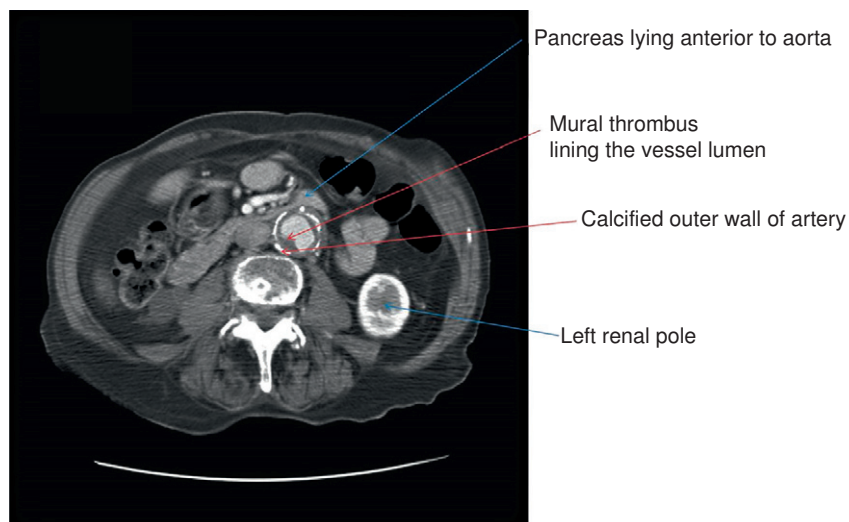


Fig 1. CT scan of the abdomen.

Take home message

The signs and symptoms of a ruptured abdominal aortic aneurysm can be subtle. The symptoms include:

1. Back pain, syncope, and vomiting.
2. You should examine for a palpable mass in all patients with abdominal pain.
3. However, only 25–50% of patients with a ruptured abdominal aortic aneurysm present with a pulsatile mass associated with hypotension, tachycardia.⁴ These three signs may be subtle because of retroperitoneal containment of the haematoma.
4. Expanding or dissecting aneurysms can cause flank and loin pain, which can be mistaken for renal colic.

Ethical approval

No ethical approval required for this study.

Conflicts of interest

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