Massive haemobilia

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A 67-year-old woman who had been a past smoker and had hypertension controlled by medication, presented to her general practitioner complaining of intermittent upper abdominal pains over a two-month period, and a single episode of bright red rectal bleeding. Colonoscopy showed diverticular disease only, an upper abdominal ultrasound was normal, as was a computed tomography (CT) scan of the abdomen (figure 1). No further investigation or treatment was undertaken.

Six weeks later she was admitted to the emergency department. She had had upper abdominal pain for 24 hours, followed by repeated haematemesis of bright blood to a volume of approximately 1.5 l. On admission her systolic blood pressure was 75 mmHg and her haemoglobin was 6.9 g/dl. The results of her previous investigations were not available at the time of this emergency admission.

She was resuscitated, but because of signs of ongoing bleeding, she was taken to theatre where a gastroscopy was performed. Fresh blood was found in the stomach and duodenum, but a lesion or source of bleeding could not be seen. A laparotomy was undertaken. The gallbladder was found to be distended and containing blood clot and fresh blood. No abnormality was seen in the liver. A pyloroduodenotomy was performed which showed profuse bleeding from the common bile duct but no other lesion. The distension of the gallbladder was rapidly progressive suggesting the gallbladder as a possible site for the torrential haemobilia, hence a cholecystectomy was performed. Then the common bile duct was explored and washed out with saline, a T-tube was inserted and a pyloroplasty performed. At the end of the operation the bleeding appeared to have stopped.

From the time of the operation she remained haemodynamically stable. The following day the CT scan became available and is shown in figure 1.

Figure 1 CT scan of the upper abdomen after injection of intravenous contrast

Questions

- 1 What is the diagnosis?
- 2 How should this be treated?

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Answers

QUESTION 1

The CT scan shows a discrete 3 cm mass in the right lobe of the liver which enhances rapidly after injection of intravenous contrast. A subsequent angiogram confirmed this to be an hepatic artery aneurysm arising from a segmental branch of the right hepatic artery (figure 2).

QUESTION 2

This was successfully embolised radiologically using two wire coils (figure 3).

Discussion

The true incidence of hepatic artery aneurysms is unknown. It is believed, however, that when they occur, approximately 75% are extrahepatic and 25% intrahepatic.¹ Intrahepatic aneurysms have been reported to be the result of infectious processes, arteritis and trauma. Traumatic causes include blunt and penetrating trauma, or trauma from liver biopsy, percutaneous transhepatic cholangiography or

cholecystectomy.^{2,3} An intrahepatic aneurysm which appears to have occurred spontaneously is particularly unusual.

Hepatic artery aneurysms have been associated with major, often life-threatening, complications. These include high output arterio-venous fistula (with the portal venous system), rupture of the aneurysm into the liver or the peritoneal cavity and gastrointestinal bleeding from haemobilia.^{2,4} There are no reports of hepatic artery aneurysms as an incidental finding which have not led to a complication. It is pertinent therefore, that this patient had had a CT scan six weeks prior to her presentation with bleeding, where the aneurysm had not been correctly diagnosed, but was reported as an incidental haemangioma. An hepatic artery aneurysm can be recognised from a CT scan with intravenous contrast since there are specific radiological features which can be distinguished (a discrete hepatic mass which enhances strongly and rapidly after intravenous administration of contrast). Had the aneurysm been recognised at the time, we believe it should have been treated because of its potential for life-threatening complications.

The treatment of choice for intrahepatic aneurysms would now appear to be embolisation of the feeding artery using interventional radiological techniques. Previously, surgical techniques were required which involved ligation of the hepatic artery or hepatic resection, with significant morbidity and mortality. Since 1980, however, there have been a number of reports of successful embolisation of these aneurysms using radiological techniques with no mortality.²⁻⁵ These reports have further demonstrated that the hepatic artery or its major branches can be occluded without any adverse effect on the liver because of its extensive collateral arterial blood supply. In this case, selective cannulation of this artery was first attempted by approaching it from the right femoral artery. This failed, however, because an acute angle was created in the guidewire at the junction of the coeliac artery and the abdominal aorta. By approaching through the left brachial artery, the guidewire undertook a more direct route to the hepatic artery and selective cannulation of the segmental artery was then possible. The artery was occluded successfully with two wire coils and post-embolisation angiograms showed no filling of the aneurysm (figure 3).

Conclusion

This case demonstrates that intrahepatic artery aneurysms are an important clinical entity with potentially major complications. They can be treated successfully, however, with radiological techniques, without major morbidity or mortality. Intrahepatic artery aneurysms can be recognised on a CT scan with intravenous contrast and with the wider availability of CT scans, these aneurysms may be recognised more often. They should be treated because of their potential life-threatening complications.

Figure 2 Angiogram of the hepatic artery and the intrahepatic circulation demonstrating a 3 cm aneurysm arising from a segmental branch of the right hepatic artery

Figure 3 Angiogram after embolisation of the artery supplying the aneurysm showing complete occlusion of the vessel and failure to fill the aneurysm

Final diagnosis

Keywords: haemobilia, hepatic artery aneurysm

Haemobilia due to a ruptured intrahepatic artery aneurysm.

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Weight loss

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A 32-year-old Sudanese man presented with a three-month history of weight loss, night sweats and back pain. He also noticed an enlarging subcutaneous lump in the left loin. A plain chest X-ray is shown in figure 1.

Questions

- 1 What is the most likely diagnosis?
- 2 What radiological investigations would you perform next?

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Figure 1 Plain chest X-ray