CASE REPORT

Isolated abdominal aortic dissection

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tangserene@gmail.com**SUMMARY**

Isolated acute abdominal aortic dissection is a rare condition, accounting for 1.3% of all aortic dissections.¹ It may be classified as iatrogenic, traumatic or spontaneous.² To date, only 92 patients have been reported in western literature. All the reports were based on the Caucasian population, and the mean age according to the International Registry of Acute abdominal aortic dissection (IRAD) was 67.7 ± 13.3 years.¹ We report a case of an isolated infrarenal abdominal aortic dissection in a middle age Asian man, and our subsequent management.

BACKGROUND

This case was written up as isolated abdominal aortic dissections are rare, and encounters with management of this condition is less common as compared with thoracic dissections, which are seen more commonly.

CASE PRESENTATION

A 42-year-old man with a medical history of hyperlipidaemia and cholelithiasis presented to the emergency department with a 1-week history of epigastric and back pain. He had a blood pressure of 126/80 mm Hg and a heart rate of 61 bpm. There was epigastric tenderness, with voluntary guarding, but no palpable abdominal mass. There was no evidence of critical ischaemia of the lower limbs.

INVESTIGATIONS

A CT scan of his abdomen and pelvis was performed for persistent abdominal pain, revealing an infrarenal abdominal aortic dissection, extending 8.6 cm from the level of the coeliac axis to the aortic bifurcation. The maximal aortic diameter inclusive of the false lumen was 1.8 cm. The lower thoracic as well as the proximal abdominal aorta showed eccentric thrombus within. All the major branches of the abdominal aorta revealed normal opacification. There was no associated abdominal aortic aneurysm noted (figure 1).

TREATMENT

The patient remained haemodynamically stable, neurologically and lower limb vascularity intact. He was managed conservatively, and one dose of atenolol was administered. The patient was discharged well 5 days later.

OUTCOME AND FOLLOW-UP

A CT aortogram performed 1 month later again revealed isolated abdominal aortic dissection, 8.4 cm in length and a maximal aortic diameter of 1.9 cm. The inferior mesenteric artery originated

from the false lumen but there was no evidence of bowel ischaemia.

DISCUSSION

Spontaneous isolated abdominal aortic dissection is rare. Demographics of the reported patients show a male predominance, with a mean age of 67.7 ± 13.3 years.¹ Hypertension is also commonly associated with isolated acute abdominal aortic dissection (IAAD).

In this instance, the patient was 42 years old, with no personal history of hypertension. However, during his admission, his systolic blood pressure ranged from 110 to 180 mm Hg. Regardless of a history of hypertension, β -blockers can be given for better control of blood pressure.

A pre-existing abdominal aortic aneurysm is present in 42% of cases with IAAD.² Our patient did not have a concomitant aortic aneurysm. His dissection flap originated infrarenally, in keeping with pre-existing studies showing origins below or at the level of the renal arteries, and rarely, suprarenally.³ The length of the dissection for our patient was 8.6 cm, as compared with a mean dissection length of 59 ± 16 mm reported by Jonker and colleagues.²

Various management options have been employed, with a case series reporting major complications for open, endovascular and conservative approach^{1–5} being 13%, 5% and 4%, respectively.² The INSTEAD XL trial⁷ published this year on uncomplicated type B thoracic aortic dissections looked primarily at the 5-year outcome of thoracic endovascular aortic repair (TEVAR) versus that of optimal medical therapy (OMT). Results showed no statistical difference in terms of outcome within the first 2 years (survival probability of $88.9 \pm 3.7\%$ with TEVAR and $95.6 \pm 2.5\%$ with OMT)⁶ and associated excess early mortality with pre-emptive TEVAR attributed to periprocedural hazards. At the 5-year mark, however, overall survival rate was improved in TEVAR patients, with all-cause mortality (11.1% vs 19.3%; $p=0.13$), aorta-specific mortality (6.9% vs 19.3%; $p=0.04$) and progression (27.0% vs 46.1%; $p=0.04$).⁷ While IAAD may be anatomically different from type B thoracic aortic dissections, both may involve the abdominal aorta, and valuable insight can still be obtained from the trial.

In IAAD patients who remain haemodynamically stable with little clinical signs and complications, there is a role for OMT with careful surveillance of their condition. If there is a persistent expansion in aortic diameter, as demonstrated in the INSTEAD XL trial on type B aortic dissection patients, endovascular aortic repair should be considered. Further studies on the long-term outcome of IAAD patients who were placed on conservative management would help elucidate management.

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To cite: Tang ELS, Chong CS, Narayanan S. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-203097

Figure 1 CT of the abdomen and pelvis at the time of presentation: Abdominal aortic dissection 8.6 cm from the level of the coeliac axis to the level of the aortic bifurcation with a maximum diameter of 1.8 cm. Proximal eccentric aortic thrombus noted.

Learning points

- ▶ Hypertension is associated with isolated abdominal aortic dissection.
- ▶ Abdominal aortic aneurysms are present in 42% of patients with isolated abdominal aortic dissections.
- ▶ In cases where patients remain haemodynamically stable with no complications from isolated abdominal aortic dissections, conservative approach can be considered, with careful surveillance.
- ▶ Blood pressure control may be important even if there is no established history of hypertension.
- ▶ Endovascular stenting can be considered in patients with persistent increase in size of aortic diameter.

Contributors ELST reviewed the patient's case, including his medical notes and scans, and drafted the article. CSC saw the patient when the diagnosis was first made, and also revised the draft article. SN revised the draft article.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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