

Emergent endovascular repair in a spontaneous isolated ruptured common iliac aneurysm: an important diagnosis to remember

Enoch Yeung , Adeolu Adeboye, Luke Dombert, Silviu Marica

Surgery, Guthrie Robert Packer Hospital, Sayre, Pennsylvania, USA

Correspondence to
Dr Enoch Yeung;
enot_2001@yahoo.com

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DESCRIPTION

A 67-year-old man, with a history of hypertension, presented with sudden onset of persistent, diffuse abdominal pain and haemorrhagic shock. The pain was described as a sharp, 7–8 out of 10 pain. There was no other associated symptom. On evaluation, his vital signs were as follows: blood pressure 81/50 mmHg on 15 mcg/kg/min dopamine, pulse rate 38 bpm, respiratory rate 24 breaths/min, SpO₂ 98% and body temperature 97.0°F. On physical examination, the abdomen was softly distended and tender without guarding or rebound tenderness. Bilateral pedal pulses were equally palpable. The patient did not have any specific clinical or physical signs suggestive of connective tissue diseases such as Ehler-Danlos syndrome. Laboratory data showed haemoglobin of 7.5 g/dL (13.7–17.5 g/dL), haematocrit 28.8% (N: 40.1%–51%), creatinine 1.5 mg/dL (0.8–1.5 mg/dL), blood urea nitrogen (BUN) 17 mg/dL (9–20 mg/dL) and lactate 5.6 mmol/L. Contrast-enhanced CT angiography revealed a ruptured left common iliac artery (figure 1). The patient was taken to the operating room immediately for emergent endovascular repair.

Spontaneous rupture of an isolated common iliac artery aneurysm (ICIAA) is a rare vascular pathology; however, it is associated with high mortality of up to 60%.¹ As endovascular intervention evolves, primary elective repair for the ICIAA has been reported.² In this case, the patient presented with a ruptured ICIAA with associated haemodynamic instability. Due to the deep pelvic location of the iliac artery, an open surgical approach can be challenging. Given the haemodynamic instability of the patient, an endovascular approach was

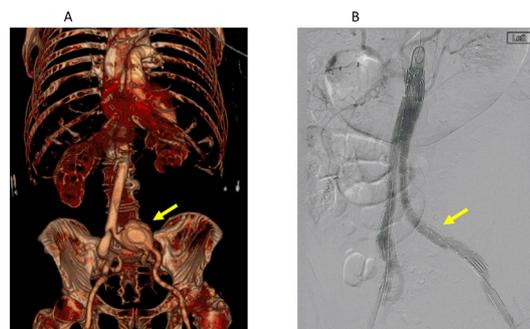


Figure 2 (A) Pretreatment three-dimensional CT. (B) Post endovascular stent graft repair fluoroscopy. There is no extravasation of the contrast outside the endovascular stent graft (yellow arrow).

used to minimise the potential complications from open surgical repair, which would have required general anaesthesia. The intraoperative course was unremarkable using intravenous sedation with monitored anaesthesia care until the ruptured iliac aneurysm has been sealed. A modular bifurcated prosthesis cook zenith graft with two docking stations, which included main body graft, left iliac limb and right iliac limb, was placed. A distal extension limb was then placed to the left external iliac artery (figure 2).

Postoperatively, the patient was transferred to the intensive care unit for close monitoring. His recovery course was unremarkable. He remained neurovascularly intact until the time of discharge on postoperative day 6.

Endovascular repair of ICIAA has been investigated in the recent years. Buck *et al* demonstrated that endovascular repair has significantly lower in-hospital mortality, length of stay and complication rate compared with the open approach.³ The endovascular treatment for common iliac artery aneurysm, which is located at more than 2 cm from

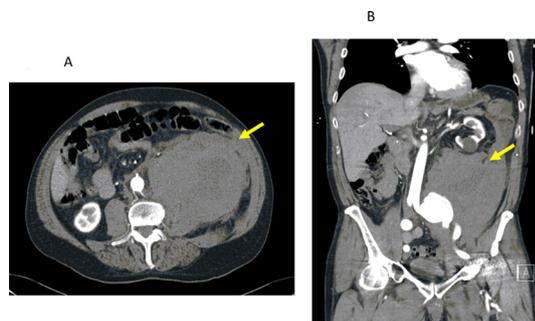


Figure 1 Preoperative CT images. The consecutive haematoma from the ruptured left isolated common iliac artery aneurysm was shown (yellow arrow): (A) Axial view. (B) Coronal view.

Patient's perspective

The surgical team worked into the early morning to save my life. I laid conscious through much of the procedure, it was clear that their preparedness and teamwork were critical to getting me through this unprecedented time. Going past Hammond Lake, coming up to my house and seeing my children and grandchildren, I realized how great a gift the team had given me. The gift of time to witness life pass.



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Learning points

- ▶ Differential diagnosis of acute onset of abdominal pain in the setting of shock includes ruptured aortic abdominal aneurysm, hollow viscus rupture and common iliac artery aneurysm rupture.
- ▶ Endovascular approach is an option for isolated common iliac artery aneurysm rupture if expertise is available.
- ▶ Long-term regular follow-up for endoleak is needed after endovascular stent graft treatment.

the aortoiliac bifurcation, is suggested to be treated with endovascular stent graft placement in the ipsilateral common with stent graft placement or embolisation of the internal iliac artery to avoid type 2 endoleak which is retrograde flow to the aneurysms.^{4,5} A 10-year follow-up after endovascular stent graft was reported to be safe.⁶ In this article, we reported an uncommon but possibly fatal pathology which was treated with endovascular surgical repair with an optimal outcome. We will closely follow-up the patient on a regular basis for surveillance of endoleak.

Contributors SM led the patient care. SM, AA, LD and EY were involved in the patient care. All were involved in conception and planning of the manuscript. EY led

the writing, data collection and literature review. SM, AA, LD and EY reviewed and contributed to the manuscript.

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ORCID iD

Enoch Yeung <http://orcid.org/0000-0003-3238-4240>

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