

## Notes de cas

clear. Corticosteroid therapy and collagen disease, either singly or together, seem to provide suitable conditions for rupture.<sup>3</sup> As yet it is impossible to predict which patients with SLE will develop this problem,<sup>3</sup> and still unknown whether a recent exacerbation of SLE disposes tendons to rupture.<sup>5</sup> Patellar tendon rupture is increasingly recognized, with many spontaneous ruptures in patients with SLE reported.<sup>1-5</sup> Bilateral patellar<sup>5</sup> and simultaneous patellar and quadriceps tendon ruptures<sup>5</sup> have been described.

To our knowledge, this is the first case in the literature of a patient with SLE who developed laxity of the patellar ten-

don and was managed surgically before it went on to rupture. The new surgical technique we described was very successful, and the patient returned to his regular, unrestricted activities.

**Competing interests:** None declared.

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# Combined trauma laparotomy and endovascular repair of thoracic aortic injury

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Proximal thoracic aortic injuries from blunt chest-trauma can be fatal soon after the injury or during or after attempts at open repair.<sup>1</sup> Recently, several centres have described excellent results from endovascular repair of these injuries through a transfemoral route.<sup>2-5</sup> Here we describe the unique combination of trauma laparotomy preceding endovascular repair of a thoracic aortic injury by means of the abdominal aorta to successfully treat 2 life-threatening injuries from a motor-vehicle accident.

### Case report

An 81-year-old woman, a belted driver, sustained serious injuries to her chest, abdomen and lower extremities in a traffic collision was transferred to our trauma centre. Contrast-enhanced CT (Fig. 1) showed a tear in her proximal descending thoracic aorta, just distal to the origin of

the left subclavian artery, with a large pseudoaneurysm, mediastinal hematoma and a splenic fracture with active contrast extravasation. CT imaging also revealed evidence of notable aortoiliac occlusive disease and the presence of a stent in the right common iliac artery.

A trauma laparotomy was performed and ongoing intra-abdominal bleeding was controlled with a splenectomy. With the patient hemodynamically stable, we exposed the infrarenal aorta as a route of access for endovascular repair of the thoracic aortic injury. An 18 × 9 mm bifurcated Dacron graft was anastomosed in an end-to-side fashion to the infrarenal aorta to act as a conduit for stent-graft delivery. Using portable C-arm fluoroscopy, a guidewire and catheter were introduced through the conduit into the aortic arch. An arch aortogram confirmed the position of the injury as just distal to the left subclavian artery. Measurements

had been taken from the preoperative CT image; a Talent endograft (Medtronic AVE, Santa Rosa, Calif.) with 15 mm of proximal bare wire and 115 mm of fabric (proximal and distal diameters, 32 mm) was selected. The 22 French delivery system was introduced via the conduit through the infrarenal aorta and into the aortic arch. Controlled hypotension allowed for accurate deployment of the endograft just distal to the left-common-carotid-artery origin with deliberate covering of the left subclavian artery. An intraoperative aortogram (Fig. 2) and postoperative CT confirmed successful exclusion of the thoracic aortic injury and pseudoaneurysm.

### Discussion

Development of an endovascular treatment for traumatic thoracic aortic injuries is one of the most important recent ad-

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FIG. 1. Contrast-enhanced computed tomography reveals a tear and pseudoaneurysm of the proximal descending thoracic aorta just distal to the left subclavian artery.



FIG. 2. This intraoperative completion aortogram shows successful exclusion of the thoracic aortic injury. Stent-graft fabric deliberately covers the origin of the left subclavian artery.

vances in trauma care. Prior to this, these injuries were treated with an open alternative with immoderate risk of mortality and paraplegia.<sup>1</sup> Treatment was often delayed in multiply injured patients whose condition was too unstable to undergo thoracotomy, the trade-off being an ongoing risk of aortic rupture. The endovascular approach provides a less invasive alternative that can be safely performed earlier in the course of treatment.

Endovascular repair of traumatic thoracic injuries has become the preferred treatment at our trauma centre over the last several years.<sup>2</sup> Our experience now encompasses 10 patients with no mortality or paraplegia. As with this case, most previous patients underwent deliberate coverage of the origin of the left subclavian artery, with only 1 patient requiring revascularization. Although we have used the common iliac artery for access when

the femoral and external iliac arteries were of insufficient calibre, this represents the first instance where we have used the abdominal aorta as the access vessel in combination with a trauma laparotomy.

This case illustrates the progress that has been made in the care of these injuries, from a high-risk open procedure to a flexible endovascular approach with minimal risk of morbidity and mortality, which can be combined with other life-saving therapies.

**Competing interests:** None declared.

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