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TITLE: [Type B Dissection in patient with aberrant right subclavian artery: Root cause treatment is better than damage control approach.](#)

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ABSTRACT BODY:

Case Study: A 72 y.o. lady presented with acute central chest pain with initial CT incorrectly diagnosed type A dissection. She underwent sternotomy and was found to have Type B Aortic dissection, with aneurysm of Kommerell at the origin of the aberrant right subclavian artery. She had a flap sutured into proximal aorta and was referred for medical management. Four days later she developed pain and paralysis of both the lower limbs with urinary incontinence. She had a repeat CT scan that showed progression of the dissection inferiorly, extension of the false lumen with compression of the true lumen causing left renal and bilateral lower limb ischaemia (fig 1).

She underwent bilateral iliac stent placement using 12mm x 60mm and 12mm x 80mm right and 10mm x 60mm and 10mm x 80mm left Bard Luminexx ®(Bard Peripheral Vascular, AZ, USA) vascular stents and left axillary bi-femoral bypass to perfuse her lower limbs and provide retrograde flow to her visceral aortic segment (fig 2). The primary tear was not treated. The ischaemia resolved.

Several days later the symptoms recurred and follow up CT scan showed crushing of the iliac stents due to compression of the true lumen (fig 3). She underwent a hybrid procedure of redo sternotomy with bilateral aorto-carotid bypass. Simultaneously, she also underwent stenting of thoracic type B dissection, laparotomy for removal of bilateral iliac stents and replacement of the aortic bifurcation (fig 4). She had a long postoperative recovery requiring cardio-respiratory support in the ITU. She was discharged after a few weeks and her follow up showed good response to treatment with good technical success.

DISCUSSION:

Complications of type B dissections are rare but are an indication for endovascular or surgical treatment. The general principle is to depressurize the false lumen by covering the primary tear with a thoracic aortic stent graft. If this does not restore flow to the ischaemic end organs then further procedures may be necessary.

Due to the inexperience of the endo-vascular operator the primary problem was not treated. Bilateral iliac stents temporarily re-perfused the iliac arteries but over several days the stents were crushed by the pressurized false lumen. The patient then underwent more definitive surgery to treat the primary tear. This required extra-anatomical bypass of the arch vessels. The crush stents were removed significantly adding to the complication of the surgery.

Although it is tempting to treat only the underlying ischaemic organ(s) by stenting open the true lumen this will often fail due to the high forces/pressures that occur in the false lumen. Treating the underlying primary intimal tear is the most reliable way to reduce false lumen pressures and restore blood flow to the true lumen. This should always be considered even if it involves adjunctive bypass surgery to the arch vessels.



Fig 1: CT Angiogram showing progression of the Type B dissection inferiorly with extension of the false lumen and compression of the true lumen.

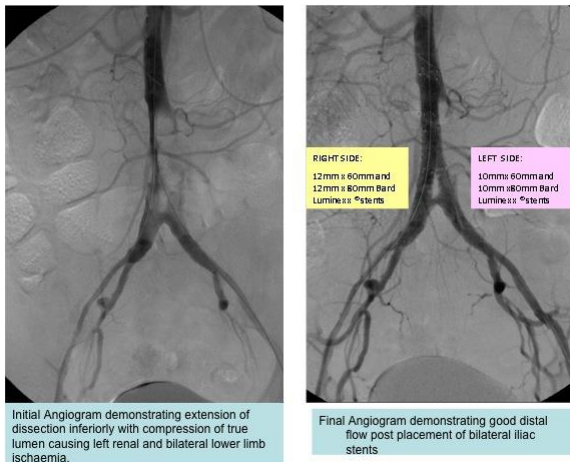


Fig 2: Initial and final angiogram after successful placement of bilateral iliac stents with left axillary bi-femoral bypass, demonstrating initial good perfusion of bilateral lower limbs and retrograde visceral aortic segment flow.

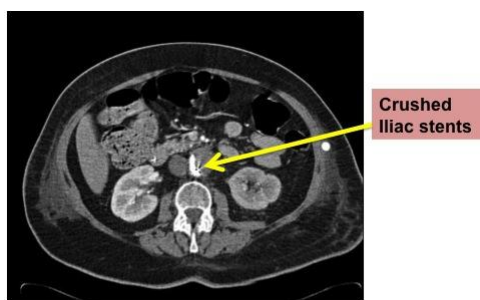


Fig 3: Follow up CT angiogram showing crushed bilateral iliac stents due to compression of the true lumen from increase in false lumen pressure.



Fig 4: Final angiogram after hybrid procedure involving bilateral aorto-carotid bypass, stenting of thoracic type B dissection and replacement of aortic bifurcation, demonstrating good technical success.