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IMAGES IN CARDIOLOGY

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Stent angioplasty in aortic arch interruption

A 33-year-old man was referred to our unit for clinical evaluation of severe systemic arterial hypertension (180/110 mm Hg). At clinical examination, signs of severe aortic coarctation (that is, soft murmurs over the intercostal spaces without any murmur at the interscapular level, weak and delayed femoral pulses) were found but echo-Doppler evaluation failed to image any aortic isthmus stenosis or significant pressure gradient (< 25 mm Hg without diastolic run-off). At confirmatory cardiac catheterisation, a complete aortic arch interruption distal to the subclavian artery take-off was imaged using a simultaneous approach from the right brachial artery and femoral artery (panels A and B). Then the occlusion was perforated antegradely using the stiff end of a 0.014 inch coronary guidewire that was snared from the femoral entry. Over an artero-arterial loop performed using an exchange 0.035 inch extra-stiff guidewire, the stenosis was then

crossed with a trans-septal long-sheath (Cook Europe, Bjaeverskov, Denmark) and successfully relieved by a 34 mm long covered Cheatham Platinum (CP) stent (NuMED Inc, Nicholville, New York, USA) progressively dilated to 14 mm (panel C). Post-procedure peak pressure gradient was 0 mm Hg.

Aortic arch interruption may cause “idiopathic” severe systemic arterial hypertension in otherwise asymptomatic young patients. In this setting, primary stent angioplasty using covered, dedicated endovascular stents may be a safe and effective therapeutic option.

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Aortic angiography in postero-anterior view from brachial artery (A) and femoral artery (B) imaging a complete interruption of the aortic isthmus. (C) Aortogram in lateral view after stent implantation, showing complete relief of the vessel stenosis.