A rare case of brachial artery fibromuscular dysplasia (FMD)

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Clinical presentation

A 65-year-old lady was referred to vascular clinic with bilateral upper limb pain during activities such as vacuuming, washing and hanging clothes. She did not have any symptoms of ischaemic rest pain or neurological symptoms. She is a non-smoker and did not have any of the usual cardiovascular risk factors. On examination, it was difficult to palpate her radial pulses, but her hands were warm with normal capillary refill. A duplex ultrasound of both arms showed 70–75% stenosis of her proximal brachial arteries.

She eventually chose to proceed with percutaneous balloon angioplasty as treatment. Upon reviewing her angiographic findings, a smooth stenosis of the axillary artery and an unusual appearance of the left profunda brachii artery were identified. It has a “string of beads” appearance, which is indicative of fibromuscular dysplasia (Figure 1). It was suggested that FMD might be the underlying cause of her bilateral brachial stenosis.

Figure 1. "String of beads" appearance of profunda brachii (circled) and narrowing of proximal brachial artery are evident.

Discussion

Fibromuscular dysplasia (FMD) is a non-atherosclerotic and non-inflammatory vascular condition that causes arterial stenosis. It is most commonly seen in renal arteries, and to a lesser extent in internal carotid arteries and subclavian arteries.1 Brachial artery involvement is relatively rare. To date, there are only five known cases of bilateral brachial artery stenosis.1–5 Ninety percent of patients with FMD are female.1 The aetiology of FMD is uncertain. Definitive diagnosis of FMD is by
histological examination. However the typical “string of beads” appearance makes diagnosis with angiography highly accurate.

In this case the strictures in the brachial arteries were smooth, raising the possibility of FMD of the intimal type, which does not give the string of beads appearance. As our patient had no risk factors for atherosclerosis, no history of radiation treatment or inflammatory markers to suggest arteritis, and given the bilateral symmetrical distribution in a site unusual for atherosclerosis, a possibly unifying diagnosis of FMD was suggested.

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Reference: