

Fibromuscular dysplasia: a cause of secondary hypertension

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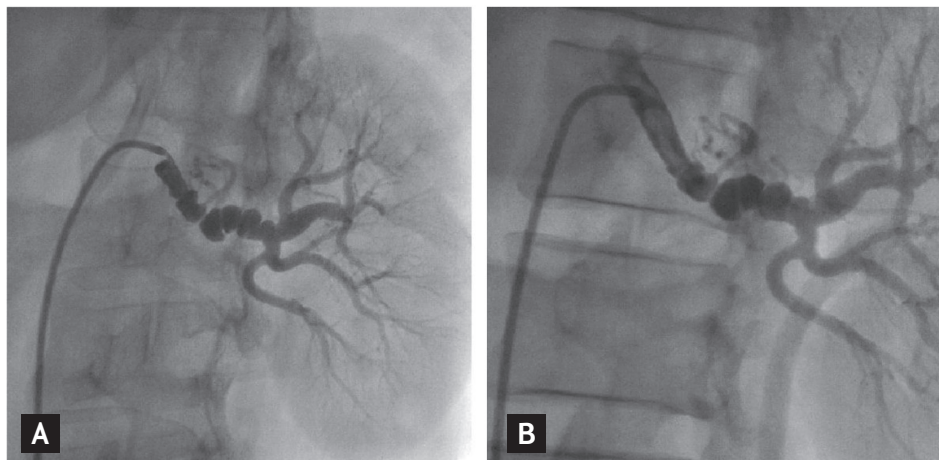
A 38-year-old female presented to us with a history of fluctuating blood pressure. On physical examination, her blood pressure in the right arm was 180/110 mmHg. Physical examination revealed no other abnormalities. Her laboratory parameters were within normal limits. Renal artery duplex ultrasound was suggestive of significant stenosis in the left renal artery.

Subsequent renal angiography demonstrated a classical “string of beads” appearance of both the renal arteries (saccular dilatations and constrictions) that spared the ostium; this was suggestive of fibromuscular dysplasia. The left renal artery also exhibited short-segment web-like stenosis (70% to 80%) in the mid-segment with a significant gradient across it (Fig. 1). Angioplasty of the stenotic segment was performed using an angioplasty balloon at a pressure of

10 atmospheres with good results (Fig. 2). After angioplasty, the patient’s blood pressure normalized and she was discharged without any antihypertensive medications. At the 6-month follow-up, her blood pressure remained normal and she required no antihypertensive medications.

Fibromuscular dysplasia is a noninflammatory, nonatherosclerotic vascular disease that commonly involves the renal and internal carotid arteries; however, it can involve any arterial bed. Renal fibromuscular dysplasia usually affects females from 15 to 50 years of age and accounts for around 10% of cases of renal artery stenosis. Renal fibromuscular dysplasia is classified based on the predominant arterial layer involved: intima, media, or adventitia. Involvement of the media is further subdivided into medial, perimedial, and hyperplastic

Figure 1. (A) Renal angiography showing the classical “string of beads” appearance of the left renal artery with stenosis in the mid segment. (B) Renal angiography (higher resolution) showing the classical “string of beads” appearance of the left renal artery with stenosis in the mid segment.



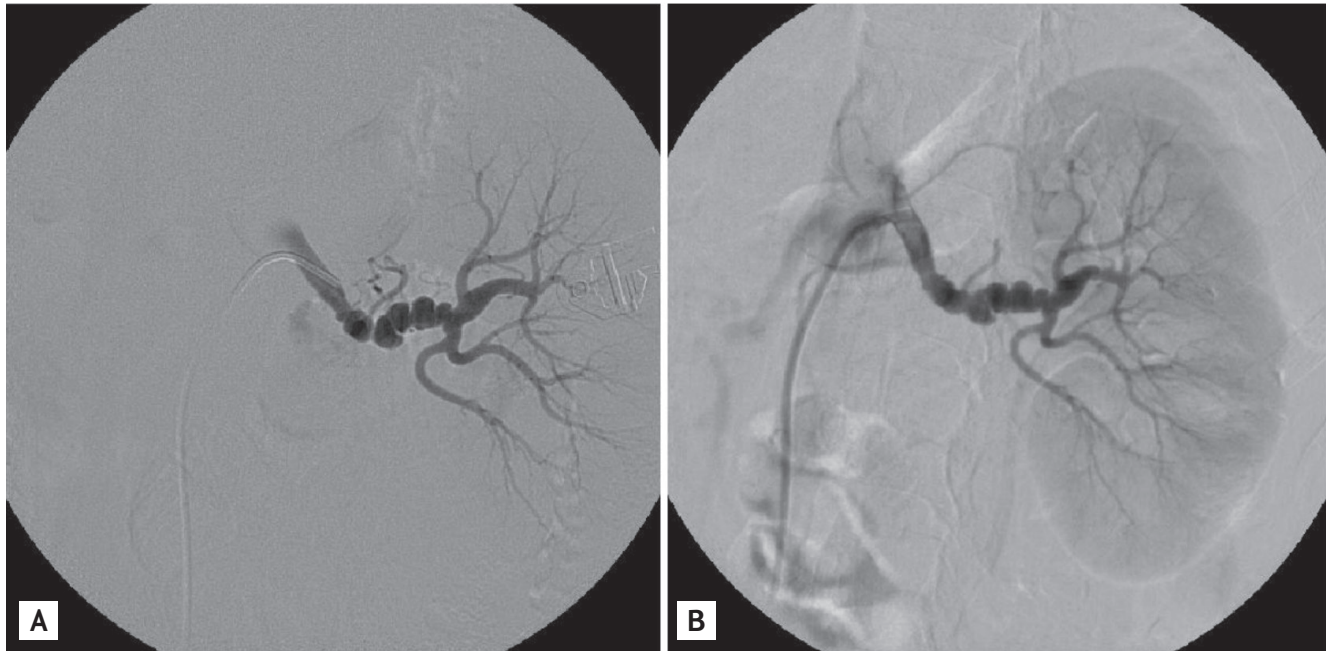


Figure 2. (A) Digital subtraction angiography showing the classical “string of beads” appearance of the left renal artery with stenosis in the mid segment. (B) Digital subtraction angiography showing good dilatation of the stenosed segment-postangioplasty.

medial fibromuscular dysplasia. The three most common and classically described subtypes include medial (70% of cases), perimedial (15% to 25%), and intimal fibrodysplasias (1% to 2%). The classical angiographic “string of beads” appearance is seen in medial and perimedial fibromuscular dysplasias. It is characterized by alternating stenoses and aneurysms and frequently involves the

bilateral renal arteries.

The most accurate method for diagnosis of fibromuscular dysplasia remains catheter-based angiography.

Conflict of interest

No potential conflict of interest relevant to this article was reported.