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Images in vascular medicine

Renal arteriovenous fistula

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Kai-Uwe Eckardt¹ and Michael Uder³

Panel A

Panel B

A 46-year-old man presented with intermittent claudication of both legs and dyspnea on exertion. His pain-free walking distance was below 200 m. In 1979, a diagnosis of IgA-nephropathy was established following an open left-sided renal biopsy. His kidney disease was progressive and from 1984 until 1993 the patient underwent chronic hemodialysis. In 1993, he received a renal allograft into the right iliac fossa. His current serum creatinine is 1.28 mg/dl. Upon presentation pulses were palpable in both ankles. Blood pressure was 130/80 mmHg. The ankle-brachial index of the right and left leg were 0.80 and 0.85, respectively. Owing to his symptoms magnetic resonance angiography of the aorta and both legs was performed. Angiography revealed a large arteriovenous fistula of the left kidney (solid arrow) with rapid filling of the inferior vena cava (Panel A). In addition, a stenosis of the right external iliac artery proximal to the renal transplant was noted (dashed arrow, Panel A). The patient underwent coiling of the renal

arteriovenous fistula and balloon angioplasty of the stenosis. A follow-up magnetic resonance angiogram 3 months later revealed complete closure of the fistula and no

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evidence of restenosis of the iliac artery (Panel B). Symptoms of intermittent claudication had resolved, and the ankle-brachial index was 1.2 in both legs.

Given the long duration between the open renal biopsy and development of symptoms, it remains unknown whether the arteriovenous fistula was caused by the biopsy or developed spontaneously at a later time. Arteriovenous fistula is a frequent vascular complication of renal biopsy, with an estimated risk of approximately 10%.¹ In most

cases, iatrogenic arteriovenous fistulas disappear spontaneously and embolization is seldom necessary.

Reference

1. Schwarz A, Hiss M, Gwinner W, Becker T, Haller H, Keberle M. Course and relevance of arteriovenous fistulas after renal transplant biopsies. *Am J Transplant* 2008; 8: 826–831.

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