CASE REPORT

GIANT HIGH-FLOW RENAL ARTERIOVENOUS FISTULA TREATED BY PERCUTANEOUS EMBOLIZATION

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ABSTRACT

We report the case of a giant renal arteriovenous fistula after renal biopsy in a 30-year-old man with hematuria and hypertension. We performed percutaneous endovascular embolization using microcoils to occlude the fistula. The patient made an uneventful recovery with no further hematuria and progressive reduction of blood pressure. Follow up by digital subtraction angiography (DSA) at 6 months showed complete occlusion of the fistula with no evidence of renal parenchymal infarction. Although giant renal arteriovenous fistulas are generally treated by nephrectomy, this case shows that embolization is a reasonable alternative to surgery. UROLOGY 61: 857–857III, 2003. © 2003 Elsevier Science Inc.

Renal arteriovenous fistulas are anomalous connections between the arterial and the venous system. They may be congenital or acquired, but acquired lesions occur more frequently (70% to 80%).[1] Their incidence has increased in recent years because of an increase in the number of biopsy procedures.[2] Several reports about their management have been published, but it is still controversial whether a giant high-flow fistula is best treated by surgery or by percutaneous embolization.[3]

We present a case of a giant renal arteriovenous fistula after biopsy, which was treated by coil embolization. Although high-flow lesions are usually treated by surgery, the present case demonstrates that excellent results may be achieved with percutaneous management, using large steel coils.

CASE REPORT

A 30-year-old man presented with a bruit in the right flank, hypertension, and hematuria, which had developed over the previous 10 days. The patient also had a progressive increase in blood pressure from a normal value to 150/100 mm Hg over the previous 2 months, which was resistant to pharmacologic treatment. There was no history of flank trauma or surgery, but ultrasound-guided renal biopsy had been performed 4 months earlier. The biopsy was performed using a 14-gauge core-biopsy needle (Bio Cut, Sherwood, Rho/Milano, Italy) because of persistent proteinuria over the previous 6 months, with no evidence of other disease. No renal parenchymal abnormalities were identified. Spontaneous resolution of the proteinuria occurred in the subsequent 3 months. Both the hypertension and hematuria postdated the biopsy.

On admission, renal color Doppler ultrasound showed an arteriovenous shunt at the right lower renal pole.

Magnetic resonance (MR) angiography performed the next day demonstrated a large, high-flow fistula with dilation of the arterial feeding trunk and a large draining vein (Fig. 1). Early opacification of the inferior vena cava was also noted. Two days later digital subtraction angiography (DSA) confirmed the ultrasound and MR findings. After informed consent the patient was treated by percutaneous embolization.

Under local anesthesia, a 110-cm-long Simmons 2 catheter (Terumo, Tokyo) was advanced over a 0.035-inch guidewire through the arterial feeding trunk of the fistula. Three 0.035-inch, 15-cm-long, 0.1-cm-thick Gianturco steel coils (Cook, Bloomington, Ind) were released into the arterial inflow before the fistula (Fig. 2). After embolization, an angiogram showed reduced blood flow into the fistula. Follow up MR angiography per-

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