Renal Autotransplant and Percutaneous Transluminal Angioplast

Combined Treatment in the Management of Renovascular Hypertension – First Report of Two Successful Cases

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Dear Sir,

Various therapeutic approaches to renovascular hypertension have been used, the most important being reconstructive or ablative surgery, percutaneous transluminal dilatation (PTD) and antihypertensive drugs, but renal autotransplant (RAT) has seldom been reported [1, 2]. Nevertheless, RAT and PTA as combined treatment in patients with bilateral renal arterial stenosis has not been reported.

We want to present two patients with renovascular hypertension and bilateral renal arterial stenosis, in whom PTA was successful in one artery but failed in the opposite side, and a RAT was performed with excellent clinical results after 6 and 12 months of follow-up.

Case Report

Case 1

A 14-year-old boy was admitted with a 3-month history of severe hypertension which required high doses of antihypertensive drugs for an inadequate blood pressure control. On physical examination an upper-quadrant bruit was audible. Intravenous pyelogram and radionuclide studies showed moderate functional renal asymmetry. Serum creatinine concentration was 75 $\mu\text{mol/l}$ and the captopril test was positive. Digital subtraction angiography (DSA) showed a right (70% stenosis) and left (90% stenosis with a prestenotic dilatation) renal artery stenosis. He underwent successful PTA of the right renal artery, but catheterization of the left renal artery was not possible. A left kidney RAT with artery reconstruction was performed. The blood pressure immediately fell to 90/60 mm Hg and remains in the normal range without antihypertensive medication 1 year following RAT and PTA.

Case 2

A 32-year-old white male was referred with a 6-month history of hypertension (250/150 mm Hg) referring increasing doses of four agents for partial control of his blood pressure. Abdominal ultrasound exploration and radionuclide studies (renogram and TC DMCA gammagraphy) showed renal asymmetry with a small right kidney. A captopril test was positive and showed high plasma renin levels (6.76 ng/ml/h in the inferior vena cava, 12.32 ng/ml/h in the right renal vein and 8.17 ng/ml/h in the left renal vein). DSA showed multiple arterial stenoses affecting both renal arteries, aorta distal to renal arteries and right iliac artery. PTA of the offending segmental stricture the lumen of the aorta (kissing catheter technique), right iliac artery and the left renal artery were performed but it was not possible on the right side. Several days after PTA blood pressure persisted without control. RAT of the right kidney into the left iliac fossa was performed and blood pressure immediately fell to normal. The patient remains normotensive with low-dose antihypertensive drugs. A flush abdominal aortogram 6 months later showed no arterial stenoses and normal vessels in the autotransplanted kidney. We believe that renovascular hypertension due to bilateral renal stenosis can be treated successfully with combined RAT and PTA in selected cases in whom PTA fails in one renal artery. RAT in such cases can be used with bench microsurgery and can yield better results than traditional reconstructive surgery.

References

Rodriguez, A.; Caravia, I.; Nuviola, Bias; Martinez, A.: Die Nierenautotransplantation. Z. Urol. Nephrol. 80: 203–207 (1987).