Recanalization of Thrombosed Hemodialysis Shunt by Venous Transposition

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Dear Sir,

Thrombosis is the most common complication leading to vascular shunt failure in hemodialysis patients. A 48-year-old woman affected by end-stage renal disease (ESRD) caused by chronic glomerulonephritis and treated with hemodialysis for 8 years, was observed to accuse vascular access complications as edema, pain and swelling of the arm. The patient was affected by severe hypotension, her systolic blood pressure (BP) at the beginning of every hemodialysis treatment was 60 mm Hg, intra-access venous pressure (VP) was 100 mmHg.

During the eighth year of hemodialysis, she suffered various vascular access failures: hypotension and insufficient vascular hemodynamics for tortuous vessels may have played an important role in the pathogenesis of her venous occlusions. If $VP/BP > 0.4$, probably a vascular access complication exists; concurring with others [1] we investigated the radiocephalic dialysis access with angiography, that evidenced a 2.5-cm venous occlusion approximatively starting in the in-flow site of venepuncture. Angioplasty suddenly performed was unsuccessful, so we decided for a surgical procedure under brachial block: the basilic vein was exposed, transposed and anastomosed end-to-end with the cephalic venous tract proximal to the arterovenous fistula (fig. 1). After recanalization, the basilic vein was transposed and superficialized subcutaneously for a 10-cm tract, to facilitate the venepuncture.

After 1 year the patient is still treated on hemodialysis by the functioning recanalized shunt; she is still hypotensive, with no signs or symptoms of steal syndrome, or problems with swelling. Measurement of $VP/BP > 0.4$, verified in every treatment, revealed significant improvement of the hemodynamic outflow. The successful recanalization of the thrombosed hemodialysis shunt by basilic vein transposition was confirmed by subtractive digital angiography and by Doppler flow study performed at 6 months and at 1 year.

The transposition of basilic vein in a thrombosed hemodialysis shunt, when possible, may be a helpful and durable surgical procedure in severe hypotensive long-treated ESRD patients with a history of vascular and loop graft failure.

Reference

Besarad A, Moritz M, Sullivan K, Dorrell S, Price JJ: Venous access pressures and the detection of intra-access stenosis. *ASAIO J* 1992;38:M519.

Fig. 1. End-to-end anastomosis between the cephalic venous tract of the radiocephalic shunt and the transposed basilic vein.

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