

Unusual Intra- and Extra-Corporeal Connections for Vascular Access

R L LAWTON and R M FREEMAN

Veterans Administration Hospital, Iowa City, Iowa, USA

Many surgical problems are encountered in dialysis patients (Lawton et al, 1968) and vascular access is a frequent one. Displacement of arterial segments to sub-dermal location allows 'needle' access. The femoral artery below the profunda branch can be isolated and displaced by sewing the deep fascia beneath it. Overlying subcutaneous tissue is de-fatted. The surgical approach should be planned to avoid a scar over the vessel.

Arterio-arterial teflon silastic shunt can be placed in the superficial femoral artery (Figure 1). A distance of 10-12 cm between arteriotomies should be

Arterio-Arterial Shunt

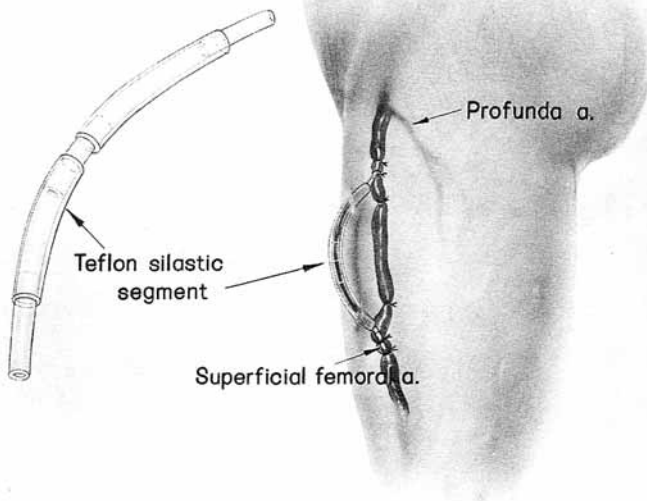


Figure 1. Transverse incisions used

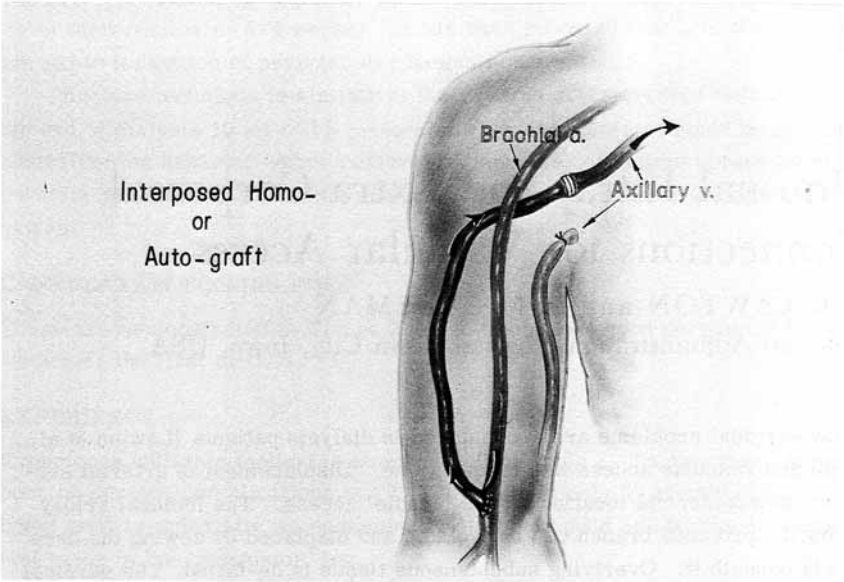


Figure 2. Graft placed laterally

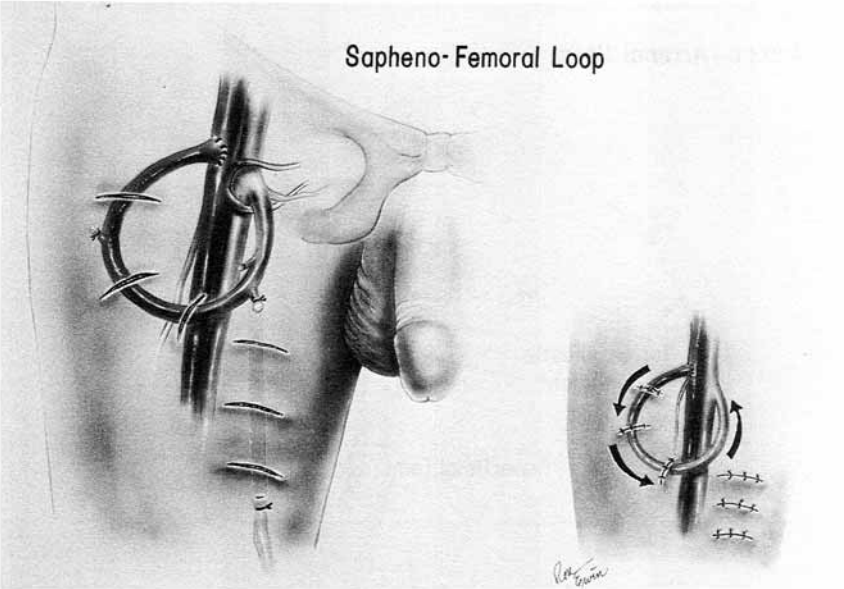


Figure 3. Full length of saphenous vein used

allowed. The distal placement is deep, and portions of muscle may be cut to allow direct surgical approach. This 'straight' shunt should be anchored securely in the deep tissues. Vascular sufficiency can be tested by temporary clamping during surgery. No tissue loss has been noted on follow-up.

Homologous and autologous vein grafts are placed in the arm (Figure 2). When necessary, homografts are secured from patients with varicose veins. No local or systemic reaction has been observed. The sub-dermal channel is made with a blunt instrument.

Sapheno-femoral loop requires only one anastomosis (Figure 3). The sub-dermal placement of the vein requires care to avoid twisting. Accurate placement can be obtained by multiple small incisions. Full length of the vein should be secured, all branches ligated, and competence tested before forming the 'loop'.

Experience with end-to-end 'stapled' fistula indicates that occasional failure results from subcutaneous angulation of the 'rings'. This can be avoided by selecting a deep position for the rings before they are applied (Lawton & Gulesserian, 1969). The buried fistula minimises infection, and simplifies post transplant management. End-to-end fistula with 'staples' controls the size of the communication.

REFERENCES

- Lawton, R. L., Gulesserian, H. P. and Rossi, N. P. (1968) Archives of Surgery, 97, 283
Lawton, R. L. and Gulesserian, H. P. (1969) Archives of Surgery, 99, 410