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Abstract:

**BACKGROUND:** In obese patients with end stage renal disease, puncturing matured arteriovenous fistulas (AVF) that run deep under the skin surface may prove difficult. To achieve reliable puncturability, there are several surgical solutions. Superficialization with mobilization is common. With some newer options (lipectomy and liposuction) subcutaneous adipose tissue is surgically reduced. There are only a few authors who have published their experience with liposuction and we want to add our own results.

**PATIENTS AND METHODS:** We report our experience with ultrasound-guided liposuction (USGL). We introduce liposuction cannulas via small incisions to reduce the subcutaneous adipose tissue overlying the planned cannulation zones under ultrasound control using tumescent anaesthesia till the prospective needle access segments become easily palpable. So far, we have used this technique for cephalic forearm and upper arm fistulas only. Furthermore, we review the relevant literature.

**RESULTS:** From February 2014 through November 2016, six patients were treated using USGL. Their body mass indices ranged from 30.8 to 53.8 kg/m<sup>2</sup> (mean 37.6). The mean depths of the AVFs beneath the skin surface were 13.3 (8-20) mm before and 5.1 (3.5-6) mm after surgery. The mean time of the procedure was 15 minutes. There were no postoperative complications. In five patients, the AVFs could reliably be punctured after three weeks. One patient is not yet on dialysis. During the follow-up period of 24 (11-43) months, all six AVFs remained primarily patent. In the literature, we found nine reports on altogether 81 patients undergoing USGL. Almost all noteworthy complications occurred only after ultrasound-powered liquefaction of adipose tissue, which was only used by a single investigator.

**CONCLUSIONS:** USGL is a method that can be learned easily, is minimally invasive, seems to be safe, and requires only short operation times.

Reference:

Cs Nagy, G., Verwiebe, R. and Wunsch, M. (2018) Staged ultrasound-guided liposuction for hidden arteriovenous fistulas in obese patients. VASA. July 19th. .

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