

## INVITED COMMENTARY

## Liposuction Is Not Just an Aesthetic Surgery Procedure

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The rising prevalence of obesity is a well known global problem, as is the relationship between obesity and end stage renal disease (ESRD). Even though the best treatment for ESRD is kidney transplantation, haemodialysis, which depends on vascular access, is a key element in the management of ESRD. The first line haemodialysis option with the best short and long term results is the creation of native arteriovenous access (arteriovenous fistula, AVF). Unfortunately, obese patients with ESRD are higher risk of unsuccessful AVF creation due to maturation problems associated with deep veins.<sup>1</sup> For this reason, vascular access surgeons often use prosthetic grafts in obese patients in preference over autologous veins. Moreover, long term fistula patency is worse in the obese than in the non-obese population, with a higher secondary failure rate resulting in cannulation related complications.<sup>2</sup>

Even though the current ESVS guidelines don't strictly define a level of body mass index that is a contraindication to fistula creation, a primary or secondary surgical procedure to facilitate cannulation has been advocated by the European Society for Vascular Surgery.<sup>3</sup> Invasive surgical procedures include elevation or transposition of the arterialised vein or lipectomy. All the aforementioned techniques need long skin incisions, venous dissection, ligation of venous tributaries, and are associated with a higher risk of wound complications.

The new concept of a mini-invasive approach has been presented by Zeindler *et al.* in the paper "Endoscopic superficialisation of haemodialysis arteriovenous fistulas in obese patients – safety, feasibility and outcomes".<sup>4</sup> The paper is an extension of a previously described case report when endoscopic superficialisation (ES) was first described by the same authors.<sup>5</sup> They present endoscopically performed liposuction over the matured venous arm of the AVF. Even though this is a small case series, the excellent results may focus the attention of vascular access surgeons. In this paper, ES was performed as a second stage procedure in 12 obese patients (mean body mass index of 33.5 kg/m<sup>2</sup>, mean age 63 years) with a mean venous depth of 10.1 mm. For uncomplicated cannulation, 6 mm of depth is the maximum. The majority of procedures were undertaken with locoregional anaesthesia (67%). There were seven

radiocephalic and five brachiocephalic AVFs. Post-operative ultrasound imaging showed a decreasing depth of the cephalic vein to 4.3 mm ( $\pm 0.8$ ) with successful haemodialysis using the superficialised vein reported in 11 (92%) patients.

The main advantage of ES over the other "superficialisation" procedures is the minimally invasive approach, smaller incisions, and potential for reduced wound complications. Moreover, direct endoscopic visualisation during liposuction allows the opportunity of clipping venous tributaries and thus increasing fistula flow. Finally, using locoregional anaesthesia in the majority of obese ESRD patients is a major advantage. However, the results of the paper must be interpreted in the context of its limitations. The study is retrospective in nature, without a comparator group, and there is a risk of selection bias. For this reason, the general recommendation that all obese patients with deeply located AVF venous arms should undergo ES cannot yet be stated. A randomised trial to confirm the advantages of ES would be a welcome addition to the literature. Finally, for the ES procedure, skill in endoscopic surgery is mandatory, but is not commonly considered to be in the armamentarium of many vascular surgeons.

In conclusion, it is fascinating to consider how liposuction, a frequent procedure in aesthetic surgery, has found a potentially important place in vascular access surgery. The trend towards minimally invasive procedures in surgery in general is now becoming apparent in vascular access surgery. In the future, it is speculated that percutaneously created fistulas with endoscopic superficialisation could become a reality for obese patients with ESRD.

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