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Reversal of Superficial Venous Insufficiency Following ASVAL Surgery

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INTRODUCTION

Superficial venous insufficiency (SVI) has been traditionally treated by removing the incompetent great saphenous vein (GSV) by surgical stripping or more recently by thermal as well as non-thermal endovenous techniques (1). ASVAL procedure builds on an ascending theory for SVI and aims to preserve the GSV by limiting the treatment to varicose tributaries(2,3).

AIM

We will present 2 selected cases of patients presenting a superficial venous insufficiency who were treated with an ASVAL procedure instead of removing their incompetent GSV. ASVAL technique relies on a minimally invasive microsurgical technique performed on carefully selected patients While aiming to preserve the GSV and reverse the course of the disease.

Materials and Methods

Patient A

A 53 year old man presented for bulging varicose veins in his left lower limb going back to many years associated with heaviness sensation and edema. He exercised regularly and had no cardiovascular risk factors apart from smoking.

GSV presented a competent terminal valve and a truncal reflux of the thigh and leg segments that spared the lower third of the thigh and upper third of the leg. Mean GSV diameter was around 7.5mm at thigh level and leg level but noticeably smaller in the supra and infra genicular area.

The posterior thigh collateral measured 9.7mm and formed a closed loop with the GSV. At the leg level, GSV drained in a continent perforator vein measuring 4mm and a posterior calf collateral measuring 5.8mm of maximal diameter. A schematic illustration can be seen in figure 1. Manual compression of the closed loop collateral lead to abolishment of truncal reflux at the thigh level.

Fig. 1: Ultrasonographic mapping of patient A

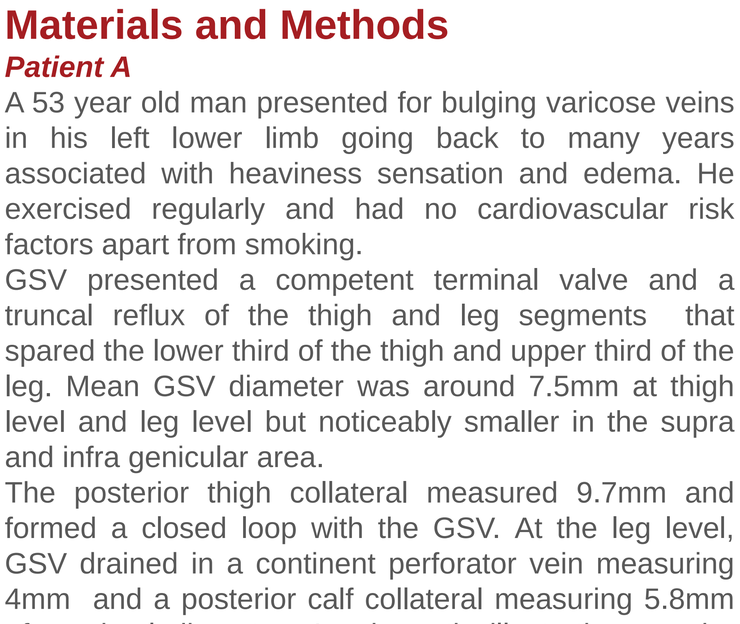
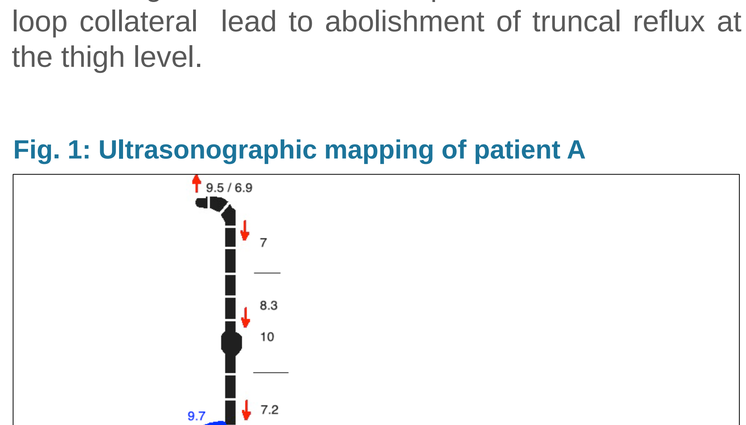


Fig. 4: Operative view of ASVAL procedure performed on patient A



Patient B

A 45 year old man with no cardiovascular risk factors presented for bulging varicose veins in his left lower limb (Fig. 2M). He complained occasionally of leg heaviness and nocturnal cramps and exercised regularly.

The GSV presented a terminal reflux extending to the thigh segment. At the genicular level, reflux was shorter than 0.5s while no reflux was noted at the leg level.

GSV measured around 6mm at the thigh level and 4.6mm distal to the supra-genicular varicose collateral. The varicose collateral measured 10.7mm of maximal diameter. A schematic illustration figures in figure 2(L). Manual compression of this collateral during the ultrasonography exam lead to abolishment of the reflux (Fig. 3b)

Fig. 2: Resected vein segments in Patient B (R) and their preoperative sonographic mapping (L) and clinical appearance (M)

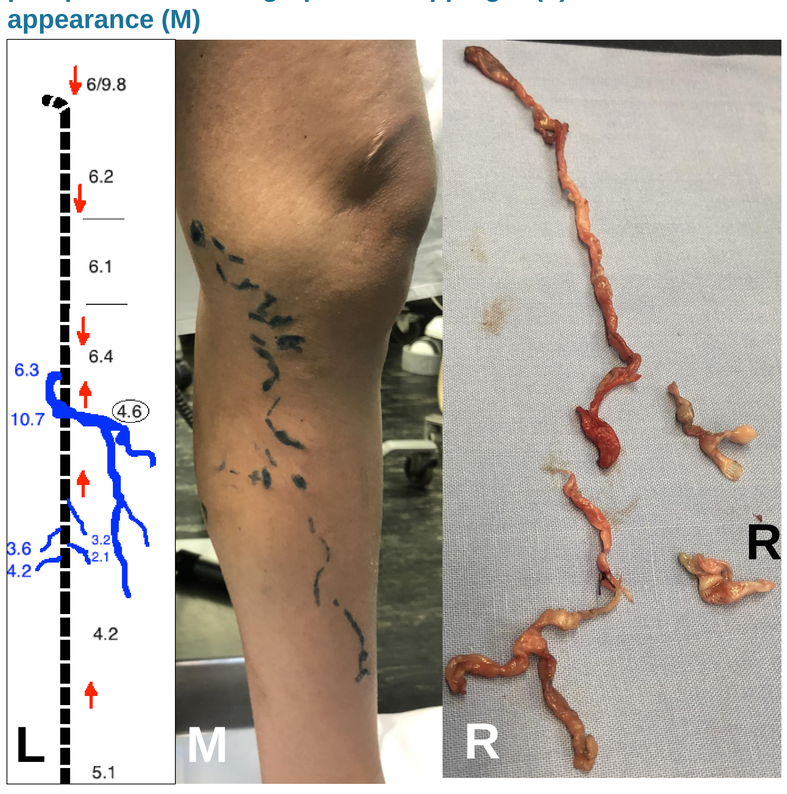
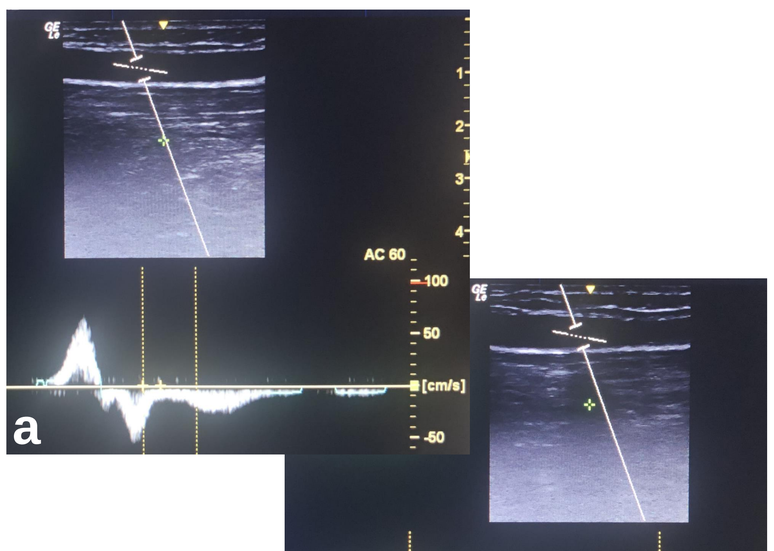


Fig. 3: Patient B ultrasonographic exam at the proximally to the thigh posterior varicose collateral showing the elongated reflux pattern in (a) and the abolishment of the reflux during suppression test by manual compression of the collateral



Technique

Both patients underwent a selective ablation of their varicose collaterals under local anesthesia through holes made by 18-gauge needles and preservation of GSV (Fig. 2, Fig. 4). No stitches were placed on the skin.

RESULTS

Patient A

Patient A was discharged from the hospital the same day and returned to work on day 3. No pain killers were used during the week end.

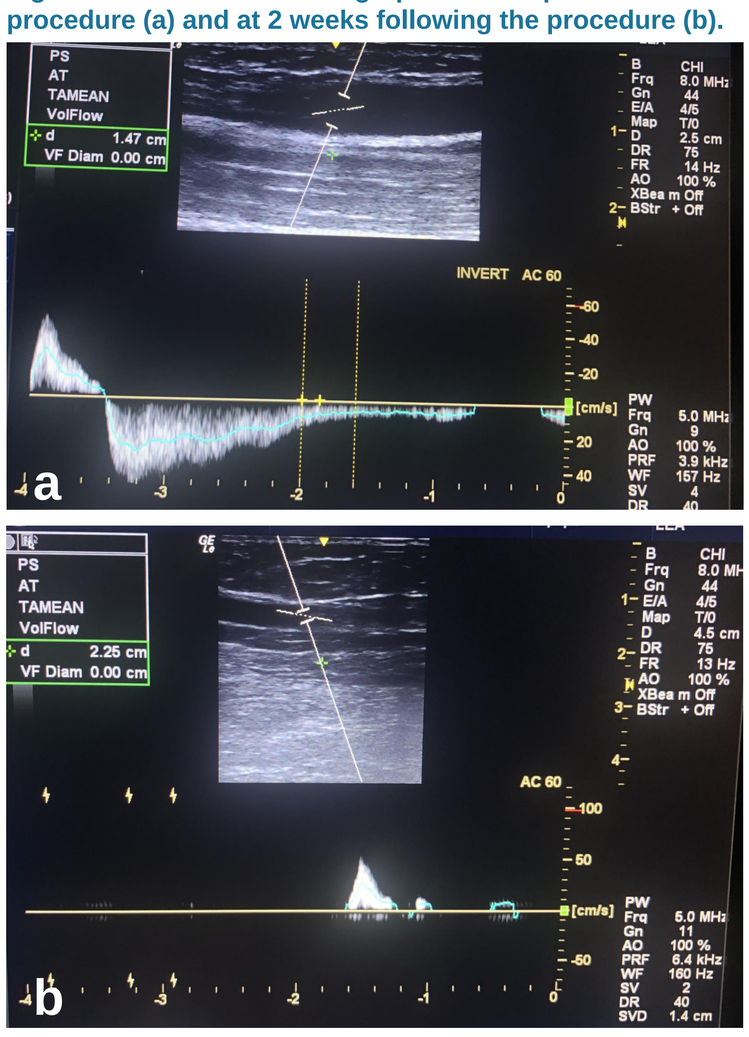
At 2 weeks following surgery, an ultrasound exam showed a complete reversal of GSV incompetency (Fig. 5b). A reduction in vein diameter was noted, the GSV measuring 5.9mm at thigh level and 4.9mm at leg level.

Patient B

He was discharged from the hospital the same day, needed no pain killers in the postoperative course and resumed work the next morning.

At 2 weeks following surgery, an ultrasonographic exam showed a reversal of GSV incompetency and a reduction in thigh vein diameter down to 5.2mm.

Fig. 5: Patient A ultrasonographic exam prior to ASVAL procedure (a) and at 2 weeks following the procedure (b).



CONCLUSIONS

Further than its highly appreciated esthetic result, simple post operative course and immediate return to work possibility, restoration of GSV competency is a main gain following ASVAL technique, giving it a major advantage over other techniques in well selected patients. ASVAL technique should be considered a plausible option in the therapeutic alternatives offered to patients. Prospective studies following standardized selection and follow up criteria are needed.

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