Using a minimally invasive treatment for venous reflux

This paper describes endoluminal thermal ablation, which is used in the treatment of varicose veins and offers a less invasive treatment of venous reflux in patients with venous leg ulcers.

METHOD

The varicose saphenous vein is punctured at the most distal site of insufficiency. Using ultrasound and local anaesthetic techniques, the catheter with a heat-delivering tip is introduced into the vein and placed a small distance from the sapheno-femoral or sapheno-popliteal junction and slowly pulled back.

Various catheters can be used to administer appropriate energy doses to the wall of the varicose vein. Lasers act as the energy source (for example a 980nm diode laser) and produce a temperature at the fibre tip of >1100°C, while radiofrequency catheters work with temperatures of 85°C to 90°C. An alternative system based on water steam as the energy medium has also been developed by René Milleret and colleagues.

Directly after applying heat to the wall of the saphenous vein, the vascular structures shrink and the blood flow ceases. This can lead to successful closure of the vein in around 100% of cases[2] [3]. These results can be achieved by means of various laser wavelengths[9]. Higher energy dosages appear to result in higher closure rates after one year[9].

CONCLUSION

Endoluminal thermal ablation has been used for treatment of venous reflux in patients with varicose veins and can provide long-term occlusion of the vein. This minimally invasive procedure has also been shown to be effective in the management of venous leg ulcers in combination with compression therapy.

REFERENCES


 author: Michael Jünger