CASE REPORT

Reconstruction of Venous Outflow After Inadvertent Stripping of the Femoral Vein

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Introduction

Stripping of the great saphenous vein is a relatively safe and widely used method in the surgical treatment of varicose veins, but iatrogenic lesions of the femoral vein during stripping may occur. A case of inadvertent stripping of the femoral vein with two stage reconstruction is presented.

Case report

A 36-year-old man with varicose veins of the right lower extremity underwent stripping of the great saphenous vein by an experienced senior general surgeon. After the procedure was performed, a profuse haemorrhage occurred. As bleeding could not be controlled, a vascular surgeon was called. Inspection of the femoral region revealed a divided and ligated junction of the femoral vein with a ligated and divided deep femoral vein and great saphenous vein. Ten thousand units of heparin were immediately given and the junction between the femoral vein, deep femoral vein and great saphenous vein. Ten thousand units of heparin were immediately given and the junction between the femoral vein, deep femoral vein and great saphenous vein was partially repaired. The remaining stump of the femoral vein, distal to the junction, was ligated. Abundant distal bleeding was stopped by compression bandaging. After the operation, the right lower extremity was elevated but 24 h after the operation a massive swelling with severe venous congestion of the

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Fig. 1. Ascending phlebogram after first operation. The arrow denotes the ruptured popliteal vein.
right lower extremity below the knee developed with paralysis of the extensor abductor muscles of the foot. Phlebograms showed a sharp division of the popliteal vein (Fig. 1). Reoperation was immediately performed using a portion of the great saphenous vein from the supramalleolar region of the left leg. This was interposed between the tibial and the existing saphenous vein (laterolateral anastomosis). After the second operation the swelling immediately dissapeared. After 12 months of follow-up the reconstruction remains patent (Fig. 2), however, paralysis of the peroneal nerve has not improved.

Discussion

A major emergency related to varicose vein surgery is accidental division of the femoral vein. The injury, however has been regarded as rare, probably one in 10000 operations. In the presented case we were faced with an inadvertent removal of the complete femoral vein and injury of popliteal vein. In some reports serious venous injuries during the stripping of the great saphenous vein were caused by young surgeons without enough experience. Nevertheless, they may occur even in the most experienced hands.

The stripper must have passed from the great saphenous vein into the femoral vein. It was the first operation for the patient and there were no anatomical variations at the saphenous opening. The surgeon failed to identify correctly the anatomical structures before division and ligation of veins were performed. The technique used, namely ankle upwards stripping, might have been a contributory factor, as the direction of perforating veins could have made the described inadvertent route more likely. The lower part of the great saphenous vein up to the upper third of the calf was torn out but the rest remained intact. The femoral vein was torn out along its whole length.

Reconstruction of such an extensive injury is extremely demanding. We could find no case similar to the presented iatrogenic injury reported to date. The venous junction below the inguinal ligament was reconstructed immediately after the injury. The deep femoral vein and great saphenous vein were reanastomosed with the proximal part of the femoral vein. It was believed that the described reconstruction would be sufficient to allow a satisfactory venous outflow. The massive postoperative swelling below the knee made it obvious that the real extent of the injury was not properly assessed and that a second operation was needed. The swelling resolved after the interposition graft between the popliteal vein and the remaining proximal great saphenous vein had been performed.

In conclusion, inadvertent stripping of the femoral vein is potentially disastrous. When the saphenous vein remains intact venous outflow may be restored by reconstruction of the femoral junction below the inguinal ligament and surgical connection between the deep and superficial venous system below the knee. In this case the interposition vein graft between deep and superficial venous system proved to be sufficient to restore venous outflow from the affected calf.

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References

Reconstruction of the femoral vein


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