

Case report

A Case of Life-threatening Hemorrhagic Shock Due to Spontaneous Rupture of a Leg Varicose Vein

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Abstract

We report a case of massive, life-threatening from a varicose lesion of the right lower extremity. An 81-year-old lady was brought to the emergency room at our hospital because of massive bleeding from her right leg. She had had high ligation of the right saphenous vein at another hospital 2 years ago. After hemostat and transfusion, she recovered from hemorrhagic shock. Three-dimensional enhanced computed tomography angiography revealed a residual right great saphenous vein and recurrent varicose lesion. We performed high ligation of the great saphenous vein and closed all of the residual perforators. The patient was discharged hospital 10 days after the surgery and experienced no bleeding episodes within 8 months after the surgery. Certain high ligation and elimination of perforators of the great saphenous vein in surgery for varicose vein of leg is necessary to prevent lethal bleeding.

Key words: varicose vein, leg, bleeding, shock

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Introduction

Bleeding from ulceration of varicose lesions of the leg is not rare¹⁾ and is sometimes lethal^{2, 3)}. Case reports illustrate the importance of first aid and surgical intervention in preventing rupture^{2–5)}. Here we report a case of massive bleeding from a varicose leg lesion in spite of surgical intervention; we found no such case previously reported.

There is no established guideline for managing advanced varicose veins of the leg. An initial approach of high ligation of the great saphenous vein with complete ligation of branches and closure of perforators can prevent bleeding.

Case Report

An 81-year-old Japanese woman in hemorrhagic shock was transported by ambulance to our hospital's emergency room. She was semicomatose with massive bleeding from her right leg. Soon after her leg was elevated and fluid was infused, she recovered from shock and regained consciousness. There were 2 old surgical scars at the groin and medial side of the knee. She had had high ligation of the right saphenous vein at another hospital 2 years ago. Her sudden onset of bleeding occurred while she was washing her body in a hotel's public bath. She informed us that she was taking clopidogrel for cerebral artery stenosis and that she had had high ligation of the right saphenous vein at another hospital 2 years ago. Her hemoglobin was 6.2 g/dl, and she was given a transfusion.

One hour of pressure hemostasis, however, did not control the bleeding, which originated from a pinhole in an anterior tibial varicose vein. We ligated the bleeding vessel by inserting 2 U-stay sutures of 2-0 Nylon through the skin at the proximal and distal site of the pinhole, and the bleeding stopped.

A three-dimensional enhanced computed tomography angiography done the next day showed the entire residual great saphenous vein of the thigh (Figure 1, arrow A). The great saphenous vein had been ligated at the knee level in a previous surgery (Figure 1, arrow B), but the distal portion of the vein remained. The blood supply was from the perforator of the anterior tibial vein, which showed a varicose lesion (Figure 1, arrow C) up to the spontaneous rupture.

A magnetic resonance angiogram of the carotid and cerebral arteries revealed no significant stenosis, and an enhanced CT scan revealed no stenosis of the leg arteries. Thus, we started compression stocking therapy with no clopidogrel. One week after admission, we undertook high ligation of the residual saphenous vein and ligated all of the varicose vein and its perforators under tumescent local anesthesia. We did a careful and complete ligation of the

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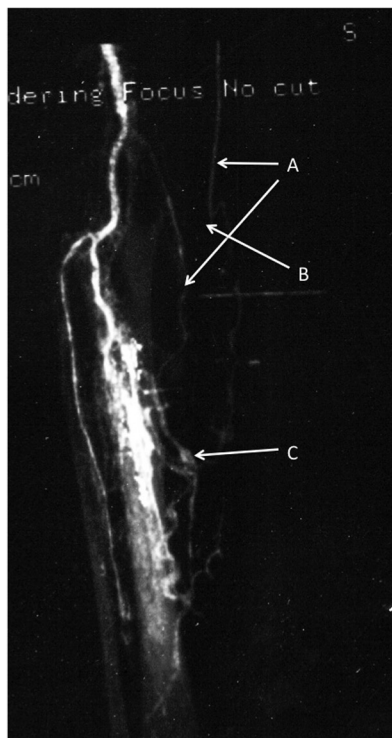


Figure 1 Three-dimensional enhanced computed tomography angiography of the right leg. Arrow A indicates the residual great saphenous vein, arrow B indicates the part of the vein ligated during the initial surgery, and arrow C indicates the recurrent varicose lesion that ruptured.

branches around the saphenofemoral vein junction. There was an stump at the femoral vein that may have been the saphenous vein ligated in the initial surgery.

The patient recovered without incident and was discharged 10 days after the surgery. There have been no bleeding episodes during 10 months of follow-up.

Discussion

Hemorrhaging after high ligation of varicose veins has not been previously reported, and we can think of 2 possibilities to account for the case we describe here: the surgeon who did the first procedure may have ligated the wrong branch, or the patient may have a double great saphenous vein system. Either way, the current high ligation (complete ligation of branches around the saphenofemoral junction) should prevent recurrence of a varicose lesion and an ensuing bleeding episode.

Skin ulcers are commonly associated with bleeding leg varicose vein lesions¹⁻³, but in this case we found only a pinhole skin wound, and the patient did not notice any skin

injury prior to admission. It is possible that she scratched her leg in the process of washing in the hotel's public bath and that the clopidogrel she was taking contributed to the massive bleeding that followed. Her survival may have been made possible by the hotel guests' around her helping her to restrict blood flow near the wound and calling an ambulance.

No guidelines exist for treating varicose veins of the leg⁷, and it is especially difficult to determine the appropriate treatment for advanced cases. Endovenous laser treatment is becoming common⁶, and while our institute is authorized by the Japanese Society of Phlebology to use that technique, our standard technique consists of high ligation, entire removal of enlarged lesions of the great and minor saphenous vein, and ligation of perforators under tumescent local anesthesia. Laser surgery, which has better cosmetic outcomes, may be as effective as high ligation⁶, but it is contraindicated in most of the cases our institute handles. The most common contraindication in our patient population is enlarged vein size and concomitant femoral lesions. One of the reasons we see so many advanced cases is that our hospital serves a rural area where many patients are aged and have worked hard over their lifetime as farmers, fishermen, and foresters. We are in the process of preparing a precise analysis of the outcomes of our cases, which number over five hundred. We believe that our surgical technique was appropriate for the case presented here.

References

1. Evans GA, Seal RME, Evans DMD, *et al.* Spontaneous fatal hemorrhage caused by varicose veins. *Lancet* 1973; 302: 1359–1362. [CrossRef]
2. Hejna P. A case of fatal spontaneous varicose vein rupture—an example of incorrect first aid. *J Forensic Sci* 2009; 54: 1146–1148. [Medline] [CrossRef]
3. du Toit DF, Knott-Craig C, Laker L. Bleeding from varicose veins—still potentially fatal. A case report. *S Afr Med J* 1985; 67: 303. [Medline]
4. Ampanozi G, Preiss U, Hatch GM, *et al.* Fatal lower extremity varicose vein rupture. *Leg Med (Tokyo)* 2011; 13: 87–90. [Medline] [CrossRef]
5. Byard RW, Veldhoen D, Manock C, *et al.* Blood stain pattern interpretation in cases of fatal haemorrhage from ruptured varicose veins. *J Forensic Leg Med* 2007; 14: 155–158. [Medline] [CrossRef]
6. Chan CY, Chen TC, Hsieh YK, *et al.* Retrospective comparison of clinical outcomes between endovenous laser and saphenous vein-sparing surgery for treatment of varicose veins. *World J Surg* 2011; 35: 1679–1686. [Medline] [CrossRef]
7. O'Donnell TF Jr, Balk EM. The need for an Intersociety Consensus Guideline for venous ulcer. *J Vasc Surg* 2011; 54(6 Suppl): 83S–90S. [Medline] [CrossRef]