

Surgical management of bilateral huge varicose veins of a morbidly obese patient who underwent Bentall procedure thirteen years ago

Management of a morbidly obese patient with varicose veins

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Abstract

This case presents the management of a morbidly obese risky patient operated for extensive aneurysmatic varicose veins with a history of Bentall procedure for giant ascending aortic aneurysm of 14 cm. The patient had complaints of swelling, discoloration, heaviness, and night cramps in both legs. Physical examination revealed bilateral huge aneurysmatic varicose veins extending medially to knee level, prominent in the anteromedial aspect of both thighs which causes sagging of skin. The patient was using warfarin, and continuous reflux was revealed on left great saphenous vein. No reflux was revealed on the right side. Sequential surgery of legs was performed with 6-month interval starting from the right side. Following an in-hospital preparation period, extensive aneurysmatic dilatations were removed from the skin of both legs, and plastic reconstruction was performed to close the skin incisions. High-risk patients considered inoperable due to comorbidities can be treated with detailed preoperative evaluation, good surgical planning and close postoperative follow-up strategy.

Keywords

Obesity, Morbid, Varicose Veins, Warfarin, Aortic Aneurysm

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Introduction

Chronic venous insufficiency (CVI) and varicose veins affect a significant part of the population and are encountered by 10-20% of men and 25-33% of women [1]. Varicose veins represent a significant portion of the disease and can notably impact the quality of life by causing a variety of symptoms.

Under normal circumstances, interventions for varicose veins can be safely performed with low risk. In recent years, these interventions have evolved to incorporate minimally invasive methods, eliminating the need for extensive incisions. However, certain patient populations, such as morbidly obese individuals, those with advanced lymphedema, concurrent deep vein thrombosis, patients on anticoagulant therapy, and those experiencing vital organ failures, present an elevated risk of morbidity regardless of the type of intervention performed. Notably, in cases involving widespread and significantly enlarged varicose veins, minimally invasive procedures may not be feasible.

This case presents the management of a morbidly obese patient who was operated for extensive aneurysmatic varicose veins with a medical history of the Bentall procedure operation for a giant ascending aortic aneurysm with a diameter of 14 cm.

Case Report

A morbidly obese, 48-year-old male patient was admitted with complaints of swelling, discoloration, feeling of heaviness, and night cramps in both legs. Thirteen years ago, we performed a Bentall procedure operation for a giant ascending aortic aneurysm with a diameter of 14 cm in our clinic [2]. Therefore, the patient was using warfarin, and the INR level was 2.8 within the therapeutic range. Physical examination revealed bilateral CEAP C4 venous insufficiency with severe aneurysmatic varicose veins of both legs extending medially to the knee level, prominent in the anteromedial aspect of both thighs which causes sagging of the skin (Figure 1(a)). A venous Doppler ultrasound revealed bilateral diffuse aneurysmatic dilatations, no reflux on the right distal extremity and continuous reflux of the left great saphenous vein (GSV). Abdominal ultrasonography didn't reveal compression or another pathology. The patient was followed up with medical treatment and compression in previous admittance, as the surgery was considered risky. A surgical management decision was taken based on the patient's current clinical condition. Sequential surgery of legs was planned starting from the right one. The patient was hospitalized preoperatively, warfarin was stopped and low molecular weight heparin (LMWH) was started. Preoperative consultations of cardiology, chest diseases and anesthesia were performed with the preparation of blood and blood products in case of requirement for transfusion. INR levels were measured regularly. The operation was intended to remove the aneurysmatic venous dilatations from the right and left thighs with the skin because of the huge amount of extensive varicose veins and plastic reconstruction of the skin. Also, performing the excision of below knee aneurysmatic venous dilatations via intermittent incisions was planned. Preoperative LMWH treatment was continued until the morning of the operation, and mapping was performed before the operation (Figure 1(a),(b)). The Patient was taken to the operating room with an



Figure 1. Preoperative image of right leg; (a) huge varicose veins cause sagging of skin, (b) mapping procedure before operation and (c) one month control view after operation



Figure 2. Preoperative image of left leg; (a) huge varicose veins causes sagging of skin, (b) and (c) mapping procedure before operation



Figure 3. Control view of the patient after 12 months from the first operation and the view of skin reconstruction of the left leg

INR level of below 2.

The patient was operated on general anesthesia. The extensive aneurysmatic venous dilatations of the right thigh which cause sagging of the skin tissue were removed from, and the plastic reconstruction was performed. After careful bleeding control, the layers were closed on the anatomical plane without placing a hemovac drain, which was not deemed necessary. Severe aneurysmatic varicose veins below the knee were completely removed to prevent thrombosis. LMWH and warfarin were started postoperatively. Hematoma, bleeding or infection was not observed in the early period. The patient was discharged with an INR>2. The patient's complaints were improved one month later (Figure 1(c)).

The left leg's surgery was performed 6 months later as planned with the same skin incision approach for huge varicose veins (Figure 2 (a), (b)). Following the preoperative mapping of left leg (Figure 2 (b), (c)), the patient was operated with same skin incision and plastic reconstruction technique. Additionally, we performed junctional ligation and division of GSV due to continuous reflux. Below and above-knee aneurysmatic venous dilatations were excised via intermittent incisions. The patient had no complaints with contentment after 12 months follow up from the first surgery, and both legs edema were improved (Figure 3 (a), (b)).

Discussion

CVI and varicose veins involve a wide spectrum of symptoms, and several treatment choices exist for management. Any of these choices is considered correct and applicable [3]. The recommendations for managing symptomatic varicose veins have obviously changed due to the increase of minimally invasive endovascular techniques in the last decade [4]. However, varicose vein disease with or without GSV reflux may have certain differences in the progress and severity, therefore treatment should be specified for the patient [5]. Hence, tailored management should be performed for some complicated cases with multiple comorbidities as in our patient. Superficial venous reflux of this patient treated with conventional junctional ligation and division of GSV and intermittent incisions used for truncal varicose vein treatment. Moreover, extensive aneurysmatic venous dilatations of both thighs which cause sagging of the skin tissue were removed together with skin and plastic reconstruction of skin was performed for both.

This patient and surgeons have avoided a varicose vein surgery for years due to multiple comorbid conditions. As a result, the patient had huge aneurysmatic dilatation of veins, which caused sagging of the skin. Besides the surgical planning, preoperative management of this patient due to multiple comorbidities is also important. Preoperative evaluation should be made in detail and relevant departments should be consulted. INR monitoring should be done regularly until the day of surgery and surgery should be performed in appropriate conditions. Additionally, it is essential to take the necessary precautions to prevent infection, bleeding, and venous thrombosis in the postoperative period.

In patients with markedly enlarged varicose veins and advanced obesity, the skin experiences stretching due to the expansion of venous vessels. Particularly notable is the occurrence of subcutaneous spaces and skin sagging upon the removal of

these enlarged veins, giving rise to potential complications such as infection, hematoma, and cosmetic issues. Consequently, in such instances, the prudent approach involves the removal of superficial veins concomitantly with the skin, employing meticulous planning and suturing techniques to ensure closure without inducing tension.

In this extreme case, the patient exhibited skin sagging attributable to previous overweight conditions and weakened skin associated with enlarged varicose veins. The affected veins were excised in conjunction with the subcutaneous tissues, followed by careful suturing of the subcutaneous and skin layers. Notably, the postoperative period transpired without any discernible complications.

In recent years, minimally invasive methods and mini-phlebectomy have gained popularity and preference in the treatment of varicose veins [1]. However, this approach may not be feasible for certain patients. Particularly in cases involving advanced varicose veins, these enlarged veins need to be excised through specific incisions, and the remaining vessels should be ligated. In a patient who is receiving anticoagulants, as in our case, we effectively managed bleeding by making appropriate incisions and ligating the remaining vessels during operation. We encountered no issues related to bleeding or hematoma during the postoperative period.

Conclusion

Patients with chronic venous insufficiency who are at high risk of intervention due to comorbidity and who are considered inoperable can be treated with low morbidity and mortality with detailed preoperative evaluation, good surgical planning and close postoperative follow-up strategy.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflict of interest

The authors declare that there is no conflict of interest.

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