



Surgical management of a large postoperative vulvar haematoma following vulvar phlebectomy and ovarian vein embolization for vulvar varicose veins: A case report

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ABSTRACT

Vulvar varicose veins (VVs) are seen in 4% of women, most of them secondary to pregnancy and usually regressing spontaneously. The treatment of choice during pregnancy is conservative and symptomatic. Management of vulvar varicosities in non-pregnant women consists of various techniques, including phlebectomy, endovascular embolization or surgical ligation of contributing veins, sclerotherapy and, recently, conservative treatment with the venoactive agent MPFF (micronized purified flavonoid fraction). We report an unusual case of a large hematoma of the right labium majus following bilateral vulvar phlebectomy and embolization of the left ovarian vein. The patient was a non-pregnant woman, who underwent incision and drainage of this rare complication. At follow-up almost a year after this procedure the patient reported comfort and cosmetic satisfaction regarding her vulvar symptoms. A multidisciplinary team approach to vulvar varicosities is important, with the involvement of gynecologists, angiologists, interventional radiologists and vascular surgeons.

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1. Introduction

Vulvar hematomas, especially nonpuerperal, are uncommon and often result from direct or blunt trauma. There have been case reports of vulvar hematomas as a postoperative complication of laparoscopic adnexal surgery, indicating vascular injury of the abdominal wall or the pelvis [1,2]. A rare case of a vulvar hematoma caused by a ruptured pseudoaneurysm of the pudendal artery in a 14-year-old girl was successfully treated with embolization and surgical drainage [3].

We discuss the case of a patient who presented with a large hematoma of the right labium majus following bilateral vulvar phlebectomy and embolization of the left ovarian vein. Factors that may have contributed to the appearance of this complication include the large size of the patient's vulvar varicosities, and the technical difficulty of applying compression bandages to the vulvo-perineal area postoperatively. Our patient underwent surgical evacuation of this hematoma within 24 h of the first procedure.

To our knowledge, after reviewing the literature, no such complication has previously been described. In fact, no complication other than treatment failure and recurrence of symptoms has been described after any kind of management of vulvar varicose veins (VVs).

2. Case report

The patient was a 31-year-old woman, otherwise fit and well, gravida 2 para 2; her two children, 5 and 3 years old, were both born via uncomplicated spontaneous vaginal delivery. Her lower-limb and vulvar VVs had worsened since her last pregnancy, and did not regress spontaneously. She had already undergone lower-limb varicose vein (LLV) stripping, and later that same year she was scheduled for embolization under catheter-directed pelvi-perineal venography, as well as bilateral vulvar phlebectomy.

The procedure took place at an institution other than ours. Under spinal anesthesia, she underwent catheterization of the median basilic vein of the right arm in order to gain access to the iliac veins. The vascular surgeon proceeded to embolization of a tributary of the right obturator vein that was found to be incompetent. Venography confirmed the absence of reflux after the embolization. He then proceeded with catheterization of the left renal vein and observed an important bundle of varicosities at the distal end of the ovarian vein, which he also treated

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with embolization. Finally, local excision of vulvar VV was carried out through several ministab incisions. The varicosities were more significant in the right vulvar area and involved voluminous venous phlebectasias. Closure of some of the incisions was necessary with Monocryl 4-0 and inverted intradermic suture. Surgical skin glue (Dermabond) was applied on the remaining incisions. At the end of the intervention, manual compression was applied with an elastic compression bandage. The immediate postoperative course was normal, and the patient was dismissed a few hours after the operation.

She presented to our emergency department on the same night in an ambulance, with an extremely painful mass in her right vulvar area. She reported 3–4 h of urinary retention. She was hemodynamically stable, and upon physical examination we came across a significantly distorted anatomy of the vulva due to a tense large hematoma on the right labium majus (Fig. 1).

An ultrasound scan confirmed that the hematoma was approximately 12 cm × 15 cm. A superficial skin laceration that extended along the entire vertical dimension of the hematoma had been formed spontaneously due to the extreme tension of the underlying mass. The patient was admitted for an immediate incision and drainage of the hematoma under general anesthesia. A linear incision along the local skin lines was made and a large quantity of blood clots was manually evacuated. A redon suction drainage system was left in place for 2 days, after which time the patient was discharged. A follow-up consultation 10 days later confirmed a favorable evolution of the wound (Fig. 2). The patient remained asymptomatic and afebrile. At follow-up almost a year after the procedure the patient reported comfort and cosmetic satisfaction regarding her vulvar symptoms.

3. Discussion

3.1. Anatomy, physiology and clinical presentation

Vulvar VVs are a complex and multifactorial disease. The pelvic venous drainage system combines three routes, the femoral vein, the internal iliac vein, and the inferior vena cava, as well as numerous connections between the three. It is remarkably complex regarding its valvular anatomy, number of trunks and venous valves [4,5].

Vulvar VVs are particularly prominent during pregnancy, due to physiological and anatomical changes that result in pelvic venous congestion. Hodgkinson [6] suggested that there can be up to a 60-fold increase of blood flow in the pelvis during pregnancy, resulting in dilation of the ovarian veins. The hormonal influence of pregnancy



Fig. 2. Examination of the wound 10 days later confirmed proper healing and relief of symptoms, with no signs of disease or complication recurrence.

also appears to play a major role, since estrogen and progesterone have a lytic action on elastic tissues, and cause further vasodilation. Vulvar varicosities in nulliparous women are caused by local venous insufficiency, with genetic predisposition likely playing a role.

When symptomatic, women might complain of discomfort, swelling, pruritus with skin maceration or pressure in the vulvar area, especially with prolonged standing, at the end of the day, during or after intercourse (dyspareunia), or just before the onset of menses [7,8].

A matter that should be addressed when diagnosing vulvar VVs is their possible and common association with other pelvic venous disorders, such as pelvic congestion syndrome. Gavrilov et al. [9] found that pelvic VVs were associated with vulvar varicosities in 32% of cases. Scultetus et al. [10] described four main types of pelvic venous circulation disorders: vulvar varicosities alone, without symptoms of pelvic congestion; isolated insufficiency of the hypogastric vein and its tributaries; predominant gonadal venous insufficiency; and obstruction to the gonadal outflow by meso-aortic compression of the left renal vein (nutcracker syndrome).

3.2. Treatment

Pelvic venous disorders were formerly an indication for hysterectomy with ligation of the ovarian veins. This option was eventually replaced by laparoscopic ligation of the ovarian veins. The most commonly performed technique today is embolization of the



Fig. 1. Examination in lithotomy position reveals the presence of a large hematoma under tension concerning the entire right labium majus area. The anatomy is completely distorted, explaining the obstructive urinary retention. Note the vertical superficial skin laceration due to the underlying tension.

varicosities using interventional radiology. This is a minimally invasive technique with clinical success rates of up to 95% and minimal patient discomfort [11]. Local excision of VVs and sclerotherapy have also been reported to be sufficient in patients with local disease [10].

Gavrilov et al. [9] suggested extraperitoneal resection or endovascular embolization of the ovarian veins, alongside phlebectomy in the perineum, for cases of symptomatic pelvic venous congestion with evidence of incompetent ovarian veins. On the other hand, for asymptomatic vulvar varicosities and pelvic VVs, those authors proposed an isolated phlebectomy in the perineum. They also performed sclerotherapy of the vulvar varicosities in 12 patients. Complications secondary to sclerotherapy, such as skin alterations, allergic reactions, pelvic vein thrombosis, or pulmonary embolism, were not observed. Venoactive drugs (ex. micronized purified flavonoid fraction or MPFF, Detralex®) formed the basis of treatment for the pregnant patients. Other treatments for symptomatic relief of pruritus included H1 histamine-receptor blockers, zinc oxide paste, and tight elastic compression underwear.

In a retrospective study of 44 patients with ovarian vein insufficiency [12], the most significant clinical result after coil embolization was observed with regard to vulvar VVs, which disappeared after coil embolization of the insufficient ovarian vein in 88% of patients.

In a series of 25 patients with vulvar VVs [11], trans-jugular descending pelvic venography was useful in detecting the source of venous reflux in 92% of patients with vulvo-perineal or posterior thigh VVs. Left ovarian venous reflux was found responsible for 60% of all cases. Successful response to treatment was confirmed in 78.3% of patients after embolization with multiple coils.

M.I. Aslam et al. [13] reported an atypical presentation of pelvic congestion syndrome, where vulvar VVs were found on computed pelvic venography to be linked to an incompetent superficial external pudendal vein. After ruling out involvement of the sapheno-femoral junction (SFJ) and sapheno-popliteal junction, the superficial external pudendal vein was embolized and coiled under fluoroscopic guidance.

A case of large vulvar VVs managed successfully by combination of surgery and sclerotherapy was presented by Adbullah M Al Wahbi [14]. After confirming severe reflux in the saphenofemoral junction (SFJ) with Duplex ultrasound, they performed surgical ligation of the latter alongside excision of the VVs. Treatment was completed by ultrasound-guided injections of polidocanol foam six weeks after surgery. The patient was symptom free at the 12-week follow-up.

4. Conclusion

Diagnosis and treatment of vulvar VVs have progressed, likely due to better access to specialized health professionals, development of interventional radiology techniques, and patient awareness and education. However, there is a lack of consensus on approach and management. Gavrilov et al. [9] attempted to address this matter, and provided a thorough diagnostic and treatment algorithm. What remains challenging are the complexity and variations of the pelvipereineal vascular system. Precise investigation of the incompetent vein responsible allows a customized approach to treatment. In order to optimize this individualized treatment, we recommend a multidisciplinary team approach to vulvar varicosities, consisting of gynecologists, angiologists, interventional radiologists and vascular surgeons.

Contributors

Georgia Theodorou drafted the manuscript.
Fathi Khomsy reviewed the manuscript.

Bouzerda-Brahmi Kawthar reviewed the manuscript.

Jean Bouquet de Jolinière reviewed the manuscript and supervised the review of the literature.

Anis Feki supervised the review of the literature and guaranteed ethical aspects of the case report.

Declaration of Competing Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Patient consent

Written informed consent for the case to be published (including images, case history and data) was obtained from the patient for publication of this case report, including accompanying images. After consulting our local ethical committee (Commission cantonale d'éthique de la recherche sur l'être humain, CER-VD), we confirmed that further IRB approval was not required, given that our article is a single retrospective case report.

Provenance and peer review

This case report was peer reviewed.

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