TJVS Turkish Journal of Vascular Surgery

Turk J Vasc Surg 2024;33(2):115-7
DOI: 10.9739/tjvs.2024.02.011

Available online at www.turkishjournalofvascularsurgery.org

Case Report

Deep vein thrombosis secondary to an ovarian tumor – approach in low resource settings: A case report

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Received: March 04, 2024 Accepted: April 18, 2024 Published online: June 28, 2024

Abstract

We present a case of a 37-year-old woman who exhibited symptomatic acute deep vein thrombosis (DVT) due to extrinsic compression from a giant ovarian cyst, detected during clinical examination. Doppler ultrasound confirmed a thrombus in the left iliac vein. Although surgery was initially planned to insert a vena cava filter, the absence of this resource during her 14-day hospital stay led to the decision to proceed without it. The surgery was carried out without complications, and she was discharged on the second postoperative day. A 3-month follow-up indicated favorable recovery.

Keywords: Ovarian tumor, deep vein thrombosis, vascular surgery

INTRODUCTION

Ovarian cysts can develop at any life stage, though they are more prevalent during the reproductive years. They are often asymptomatic, sometimes only identified as incidental findings during unrelated medical examinations. However, large or giant cysts exceeding 10 cm in diameter can cause symptoms due to their impact on nearby pelvic structures, as evidenced in this patient's case regarding vascular involvement.

CASE REPORT

We report the case of a 37-year-old woman with a history of prolonged oral hormonal contraceptive use. She presented with a progressively enlarging diameter of her left lower extremity over the past 12 hours, accompanied by painless redness.

Physical examination revealed a 5 cm diameter difference between the right and left lower limbs and skin of the left limb exhibited erythema without any tenderness upon palpation. Additionally, a palpable abdominal mass was found in the lower abdominal quadrants.

Further investigations, including a contrast-enhanced computed tomography scan seen in Figure 1, revealed a sizable tumor originating from the left ovary, measuring approximately 28x20 cm. This mass exerted significant compressive effects on both the left iliac artery and vein. No other abnormalities were identified in the laboratory tests.

Doppler ultrasonography diagnosed thrombosis in the inferior iliac vein, consistent with a subacute, partial thrombus occupying over 90% of the lumen in the external iliac vein, common femoral vein, and femoral vein.

A request for an inferior vena cava filter was made prior to a planned surgery to remove the intraabdominal tumor mass, and anticoagulant therapy with low molecular weight heparin (1mg/kg twice daily) was initiated since day one of hospital admission. Due to resource constraints to purchase and place the filter, surgery was decided upon after 14 days of hospitalization.

A right adnexal tumor measuring 26.2x21.5x10 cm and weighing 4100 grams was identified as in Figure 2. The left common iliac vein was directly visualized, revealing a palpable

CITATION
López KAH, Garcia DFP, Arellano AG, Alcala ADN. Deep vein thrombosis secondary to an ovarian tumor – approach in low resource settings: A case report. Turk J Vasc Surg. 2024;33(2):115-7.

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DOI: 10.9739/tjvs.2024.02.011

thrombus located 2 cm from the vena cava. Notably, after tumor removal, no vena cava involvement or extrinsic compression of the iliac vessels was observed. Histopathological examination confirmed the diagnosis of serous cystadenoma, with no signs of malignancy. The postoperative course was uneventful, oral anticoagulation at discharge was established as treatment for the Deep vein thrombosis (DVT) and seen with no complications in follow-up consultations.

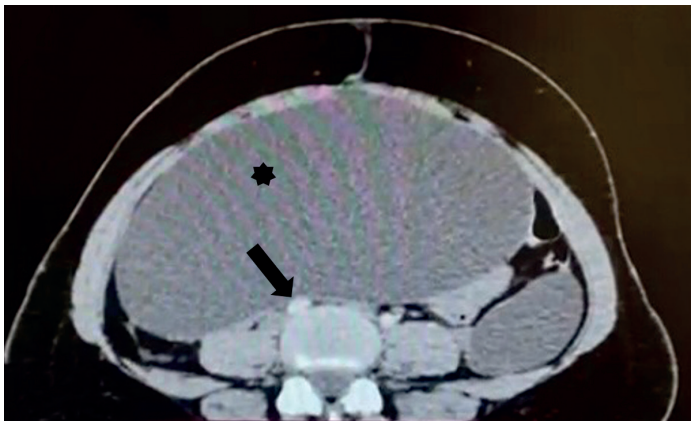

Figure 1. Contrast-enhanced computed tomography scan, showing on an axial view a tumoral mass from 28x20cm generating a vascular compression of the iliac artery (Arrow signaling right iliac artery, * pointing at ovarian mass)

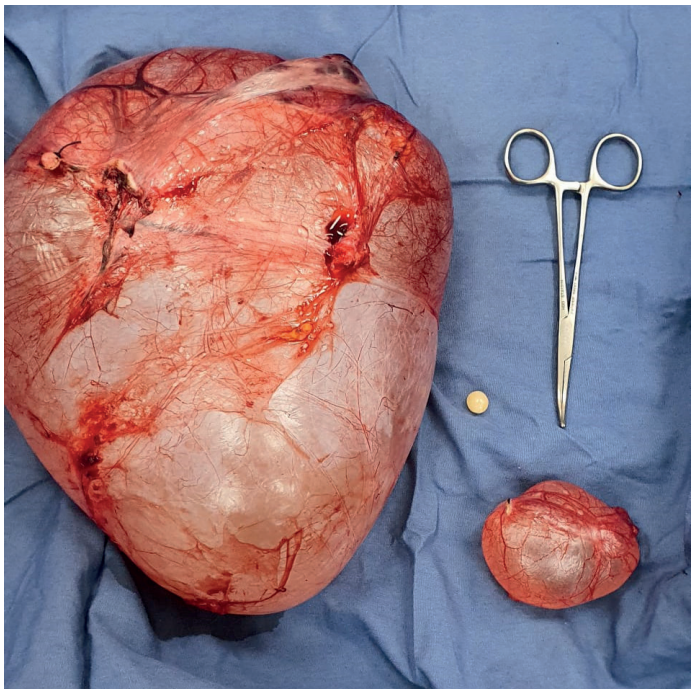

Figure 2. Depicted is an extracted ovarian cyst, prominently vascularized and displaying a reddish hue, with a smooth and congestive surface; The cyst mass weighs approximately 4,100gr and measures 26x21.5x10cm. Its intact capsular status and the remnants of salpinge, measuring 16.5x3cm, are evident (indicated by an arrow); Adjacent on the right, there's a smaller cyst mass weighing around 100gr; The microscopic elements are consistent with ovarian serous cystoadenoma

DISCUSSION

Interestingly, the patient's predominant clinical feature was not the progressively enlarging, asymptomatic abdominal distension, which she perceived as routine, it was the sudden enlargement of her left lower limb, accompanied by skin discoloration, that prompted her to seek medical attention. Socio-economic and educational factors appear to have influenced her prior interactions with the healthcare system.

The prevalence of ovarian cysts varies with age, ranging from 3.8% to 31.3%, peaking at around 15 years [1]. These cysts should not be misdiagnosed, as they can grow over time. On average, giant cysts typically present around the age of 50 [2]. While many ovarian cysts remain clinically silent and are incidentally discovered on imaging studies, symptoms can range from abdominal pain and menstrual disturbances to physical manifestations like an enlarged abdomen. Rarely, they may be associated with caval thrombosis or lower limb DVT, as demonstrated in our patient.

There is accumulating evidence suggesting that the presence of a neoplasm underscores the significance of therapeutic decisions. The risk of pulmonary embolism escalates by 4 to 7 times, with embolic events reported in up to 20% of even benign ovarian neoplasms [3]. A previous case report by Perera D, et al. has also described a giant cyst associated with contralateral DVT, akin to our patient's presentation.

DVT remains a global concern. However, over recent decades, advancements in therapeutic management have decreased both incidence and mortality rates from 12.8 to 6.5 per 100,000 individuals [4]. The aggregate of predisposing factors directly correlates with the risk of development. The severity of each factor should be judiciously assessed. Notably, the 2019 ESC Guidelines, developed in conjunction with the European Respiratory Society, enumerate severe risk factors, emphasizing the importance of early prophylaxis strategies in cases with severe risk factors.

In anticipation of the surgical intervention, there was a proposal for the placement of a caval vein filter to thwart potential pulmonary thromboembolic events. A subsequent removal plan, acknowledging associated procedural risks, was also considered. Given the prevailing circumstances, the constraints in resources of the healthcare system and the non-possibility for reference to a higher level hospital treatment, the decision to proceed with the surgery was substantiated by findings from Young T. and Sriram KB in the Cochrane library. Their research found no discernible advantage of filter placement over sole anticoagulation in the outcomes related to pulmonary thromboembolism, DVT, mortality, or bleeding at three and six months [5]. Fortunately, the surgery was executed without postoperative complications, and the patient's recovery was favorable.

CONCLUSION

The management of a giant ovarian cyst causing compression of vascular structures necessitates thorough preparation ahead of surgical intervention. A comprehensive assessment encompassing hospital facility, patient status, and available resources is paramount to formulate an optimal treatment plan. In this particular case, our approach was influenced by several factors: the patient's anticoagulation status, the absence of systemic organ impairment, the lack of a floating thrombus, and the unavailability of resources for the placement of a caval vein filter. These collectively guided our decision towards surgery. This case underscores the need for continued research, particularly into the utility of caval vein filters in instances of DVT linked to benign tumors exerting compressive effects on vascular structures.

Patient Consent for Publication: Previous risks and benefits were reviewed and explained, the patient signed authorization for surgery and after follow-up consult, consent for its publication was authorized by the patient.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: All authors contributed equally to the article.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

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