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**Case Report**

# Low grade serous ovarian carcinoma presenting with monoparesis due to deep vein thrombosis: a case report

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## ABSTRACT

Low-grade serous ovarian carcinoma (LGSOC) is a rare and indolent form of ovarian cancer. While it commonly presents with abdominal symptoms, unusual manifestations such as neurological deficits are less frequent. This case report explores an atypical presentation of LGSOC associated with deep vein thrombosis (DVT) leading to monoparesis. A 45-year-old multiparous female, regular menstrual cycles presented with sudden onset of swelling and pain in her left lower limb. Physical examination revealed tender and swollen left lower limb with Homan's sign, with imaging confirming DVT in multiple lower limb veins. Further investigation, including pelvic imaging, revealed an ovarian mass. DVT was managed conservatively and patient had total abdominal hysterectomy with bilateral salpingo oophorectomy. Biopsy revealed LGSOC with external iliac vein thrombosis. The tumor was initially asymptomatic, and the neurological symptoms were attributed to paraneoplastic syndrome secondary to the DVT rather than direct tumor invasion. This case highlights an atypical presentation of LGSOC where DVT complicated by monoparesis was the primary symptom. It underscores the importance of considering underlying malignancies in patients with unexplained neurological symptoms and venous thromboembolism (VTE). Early recognition and comprehensive evaluation are crucial for appropriate diagnosis and management. LGSOC can present with unusual neurological symptoms, particularly when complicated by DVT. Clinicians should be vigilant for potential malignancies in patients with unexplained monoparesis and thromboembolic events to ensure timely and effective treatment.

**Keywords:** Low-grade serous ovarian carcinoma, Deep vein thrombosis, Monoparesis, Venous thromboembolism, Atypical presentation

## INTRODUCTION

Epithelial ovarian cancers are the most common ovarian malignancies with an incidence of 90-95%.[1,2] Epithelial ovarian cancers can be classified based on histology into the following subtypes: serous, mucinous, endometroid, clear-cell, brenner, undifferentiated. Among these, serous ovarian cancer is the MOST common, accounting for up to 60-75% of epithelial ovarian cancer.[1,2]

Serous ovarian cancers can be broadly divided into high-grade serous carcinoma (HGSC) and low-grade serous carcinoma (LGSC).[3] LGSC is relatively rare, constituting only 5% of serous ovarian cancer and 2% of overall epithelial ovarian cancer.[4]

VTE stands as a significant cause of illness and death among cancer patients. Around 20% of these patients will experience thromboembolic events[5], and similarly, about 20% of those who suffer from thromboembolism will have an underlying cancer diagnosis.[6] For patients with cancer who are hospitalized, up to 4.1% may be affected by venous thromboembolic events.[7] Thrombosis is recognized as a major cause of death in this population.[7]

The actual frequency of these events is likely higher than reported since thrombotic incidents can be asymptomatic, and venous thrombosis is found in up to half of cancer patients during post-mortem examinations.[8] Ovarian cancers, among solid tumours, is linked to one of the highest rates of venous thrombosis[7] and associated with a VTE risk of 7.2% by 2 years from diagnosis.[9]

This case has an unusual presentation. Low grade serous ovarian carcinoma is a type of ovarian cancer that typically presents with abdominal symptoms like bloating, pain or changes in bowel habits. Monoparesis, which is the weakness or partial paralysis of one limb, is an uncommon presentation for ovarian cancer, making this case particularly noteworthy. It indicates a neurological involvement that is not typically associated with ovarian cancer. DVT usually manifests with symptoms like sweeling, pain and redness in the affected limb. The development of monoparesis due to DVT is rare because DVT generally does not directly cause neurological deficits. The monoparesis in this case might suggest an unusual complication, such as a paradoxical embolism or a clot extending into veins that drain into the spinal cord or brain, causing the neurological deficit, or it may be due to mass effect or compression of nearby structures, including nerves, which could lead to weakness of the quadriceps muscle, manifesting as monoparesis in the leg.

## CASE REPORT

A 45-year-old multiparous woman ($P_{5+0}$) with regular menstrual cycles presented with sudden onset of swelling and pain in her left lower limb, exacerbated while standing and/or walking. Physical examination revealed tender and swollen left lower limb with Homan's sign positive (Figure 1). Patient developed monoparesis of the left lower limb within a few hours of her presentation. Her weight was 55 kg with a BMI of 21 kg/m$^2$. Her past history and family history were not otherwise significant. Ultrasound with Doppler study of bilateral lower limbs revealed DVT of left lower limb involving the following veins: left common femoral vein, sapheno-femoral vein, deep femoral vein, popliteal vein and external iliac vein. Abdominal examination incidentally found an abdomino-pelvic mass of around 28-weeks size which was non-tender and immobile (Figure 2). Tumour markers were deranged: CA125 was 350 U/ml, CA 19.9 was >700 U/ml, CEA was 72.94 ng/ml. Ultrasound (US) of abdomen showed a cystic lesion involving the lower abdomen and pelvis, measuring 15×10×18 cm in dimension. MRI and CT scan reports corroborated the ultrasound findings and a provisional diagnosis of ovarian neoplasm was made.

In the initial stage, the DVT was managed conservatively in consultation with the cardiothoracic and vascular surgery (CTVS) and gynaecological oncology specialties. Patient was put on Inj. LMWH (low molecular weight heparin) 1 mg/kg twice daily for six days and tablet acenocoumarol 1mg daily for 2 weeks. She was monitored via coagulation profile done on alternate days.

Patient underwent laparotomy followed by total abdominal hysterectomy with bilateral salpingo-oophorectomy and infracolic omentectomy with pelvic lymph node dissection, two months after the correction of her DVT. Intraoperative findings were a right adnexal mass with thrombosis of left external iliac vein (Figure 3).

Post operatively, patient was put on short-term thromboprophylaxis with Inj. low molecular weight heparin 0.5 mg/kg twice daily for 10days followed by long-term thromboprophylaxis with tablet acenocoumarol 0.5mg daily. She was discharged on 5$^{th}$ post op day. Biopsy reporting was low grade serous carcinoma of right ovary.

**Figure 1: Tender and swollen left lower limb.**

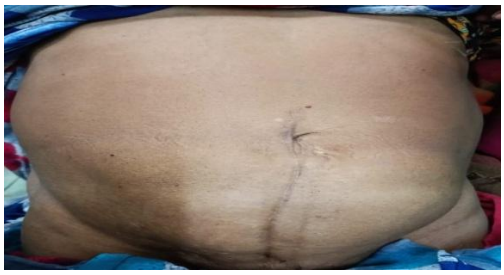

**Figure 2: Abdomino-pelvic mass of 28 weeks size.**

**Figure 3: Specimen of total abdominal hysterectomy with bilateral salpingo-oophorectomy with infracolic omentectomy in a case of right ovarian carcinoma.**

## DISCUSSION

VTE is a well-recognized complication of cancer, occurring in up to 20% of patients, with ovarian cancer among the malignancies carrying the highest risk.[5,7,8] Khorana et al noted that thrombosis in hospitalized cancer

patients often correlates with disease burden and poorer outcomes.[7] However, most studies describe this association in aggressive tumors, particularly HGSC. In contrast, our patient had LGSOC, an indolent subtype that is rarely linked to extensive thrombosis, making this presentation unusual.

Metcalf et al reported that ovarian cancer patients with thrombosis tend to have advanced disease and poor performance status.[10] Our patient, who lacked risk factors and had early-stage LGSOC with favorable postoperative recovery, does not follow this pattern. This suggests that thrombosis can occasionally precede diagnosis even in biologically less aggressive tumors.

Neurological deficits such as monoparesis are rarely associated with ovarian cancer. Most documented cases involve metastatic plexopathy rather than vascular causes. The likely mechanism in our case was neurovascular compromise from extensive iliac and femoral vein thrombosis. Although reports of such presentations are scarce, the varied thrombotic manifestations of malignancy have been highlighted in earlier work.[6] Prompt anticoagulation and surgery resulted in full recovery, consistent with findings by Lee et al on improved outcomes with timely management of cancer-associated thrombosis.[5]

### *Limitations*

This is a single case report, limiting generalizability. Neurophysiological studies were not performed, which could have clarified the exact cause of monoparesis. Long-term follow-up beyond one year is still pending. More cases are needed to better understand atypical thrombo-neurological presentations in ovarian cancer.

## CONCLUSION

This case highlights a rare presentation of LGSOC with monoparesis secondary to extensive DVT. It emphasizes the need to suspect underlying malignancy in patients with unexplained neurological deficits and thrombotic events. Early anticoagulation and comprehensive evaluation can lead to favorable outcomes. This report adds to the limited literature on atypical presentations of LGSOC and reinforces the importance of vigilance in similar clinical scenarios.

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