


Fatal pulmonary thromboembolism caused by idiopathic ovarian vein thrombosis

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Keywords

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Introduction

Ovarian vein thrombosis (OVT) is occasionally diagnosed during the postpartum period or in patients with ovarian malignancy [1,2]. Few cases of pulmonary thromboembolism (PTE) caused by OVT have been reported previously [3,4]. We report the case of a 67-year-old woman who presented with PTE due to OVT during hospitalization for cerebral infarction. Her left ovary showed no tumorous appearance. This is an extremely rare case of fatal PTE caused by idiopathic OVT.

Case Report

A 67-year-old woman with sudden-onset right hemiplegia was urgently referred to the neurosurgery department of our hospital. Magnetic resonance angiography revealed an embolic occlusion of the left middle cerebral artery. An emergent endovascular thrombectomy was performed, and recanalization of the culprit lesion was achieved. On follow-up examination, haemorrhage was detected around the cerebral infarction. Her right hemiplegia remained, and she underwent daily rehabilitation. While on bed rest, she received intermittent pneumatic compressions on both crura to prevent deep vein thrombosis (DVT) in her lower

Abstract

Ovarian vein thrombosis (OVT) is observed in the field of obstetrics and gynaecology. It is occasionally diagnosed during the postpartum period or in patients with ovarian malignancy. Few cases of pulmonary thromboembolism (PTE) caused by OVT have been reported previously. We report the case of a 67-year-old woman who presented with fatal PTE due to left OVT during hospitalization for cerebral infarction. The left ovary of the postmenopausal elderly patient showed no tumorous appearance. This case of OVT is extremely rare because of its idiopathic nature and fatal result.

extremities; however, prophylactic intravenous anti-coagulation therapy for DVT was not initiated because of haemorrhagic cerebral infarction. No signs of leg swelling were observed.

On the 10th hospital day, she complained of chest pain and dyspnoea, and a circulatory collapse immediately followed. After successful cardiopulmonary resuscitation, enhanced computed tomography (CT) revealed a massive bilateral PTE, which caused the sudden cardiac arrest. A subsequent whole-body CT was performed to search for the origin of the thrombus, and no DVT was found in both lower extremities, including the crura. However, a dilated and thrombosed left ovarian vein was detected. The left ovary of our postmenopausal elderly patient showed no tumorous appearance. Furthermore, there were no findings suggestive of malignant diseases in other organs. CT also showed no intracardiac thrombus, and echocardiography performed later showed no intracardiac shunt. Finally, blood tests showed thrombophilia, such as antiphospholipid syndrome. Therefore, left OVT was confirmed as idiopathic and the cause of PTE (Fig. 1).

Owing to the status of our patient with haemorrhagic cerebral infarction, intravenous heparinization therapy was the only suitable treatment for the PTE. However, she died of respiratory failure and severe post-resuscitation

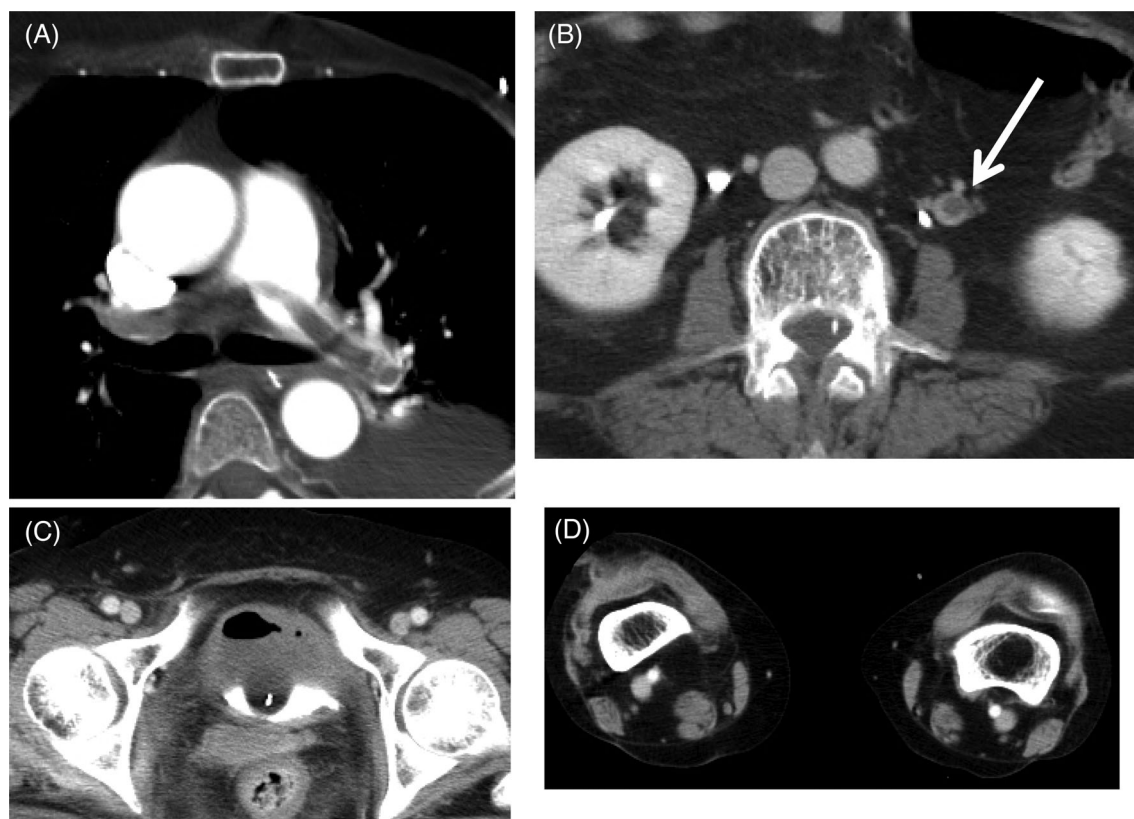


Figure 1. Computed tomography image showing deep vein thrombosis–pulmonary thromboembolism (PTE) protocol findings. (A) massive bilateral PTE. (B, arrow) Dilated and thrombosed left ovarian vein. No thrombus can be found in the proximal sites of the femoral veins (C) and popliteal vein (D).

encephalopathy on the 12th hospital day. Post-mortem examination was declined by the family.

Discussion

PTE is a life-threatening disease and may occur in patients out of hospital; however, hospitalization is recognized as an especially important risk factor of PTE [5]. Surgery, immobilization, and malignancy are well-known risk factors of PTE. A dislodged thrombus from the deep vein, especially from the deep vein of the lower extremities, is the most common cause of PTE. Huge gynaecological tumours are known to be associated with iliac vein thrombosis, which may cause PTE [3].

OVT is observed in the field of obstetrics and gynaecology, and occasionally diagnosed during the postpartum period or in patients with ovarian malignancy [2]. The common symptoms in patients with OVT are fever and abdominal pain [1]. Few cases of PTE caused by OVT have been reported, most of which occurring after

gynaecological surgery or malignant diseases [3,4]. In the present case, the left ovary of the postmenopausal elderly patient showed no tumorous appearance. Therefore, a diagnosis of idiopathic left OVT was made, which is extremely rare owing to its idiopathic nature and fatal result. In this case, no source of PTE embolization was found other than OVT. However, DVT was present in her lower extremities, which is the most common cause of PTE, and it is possible that all thrombi had dislodged.

Disclosure Statement

Appropriate written informed consent was obtained for publication of this case report and accompanying images.

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Author Contribution Statement

Masanori Ogiwara revised and completed the manuscript as well as reviewed the literature. Masahiko Ozaki, Yoshifumi Nishino, and Takuya Miyahara collected all clinical materials and images. All authors reviewed and approved the final version of the manuscript.

References

1. Labropoulos N, Malgor RD, Comito M, et al. 2015. The natural history and treatment outcomes of symptomatic ovarian vein thrombosis. *J. Vasc. Surg. Venous Lymphat. Disord.* 3:42–47.
2. Trang N, Kalluri M, Bajaj T, et al. 2020. Idiopathic left ovarian vein thrombosis. *J. Investig. Med. High Impact Case Rep.* 8:1–3.
3. Fernandes FLA, Dinardo CL, and Terra-Filho M. 2014. Uterine myoma as a cause of iliac vein thrombosis and pulmonary embolism: common disease, rare complication. *Respirol. Case Rep.* 2:132–134.
4. Verde F, and Johnson PT. 2012. One not to miss: one not to miss: ovarian vein thrombosis causing pulmonary embolism with literature review. *J. Radiol. Case Rep.* 6: 23–28.
5. Goldhaber SZ, and Bounameaux H. 2012. Pulmonary embolism and deep vein thrombosis. *Lancet* 379:1835–1846.