

A very rare entity; recurrent pulmonary embolism secondary to partially thrombosed saccular popliteal venous aneurysm

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Dear Editor,

A 66-year-old male patient who was under follow-up with INR measurements for chronic pulmonary thromboembolism presented to our emergency department with dyspnea, tachypnea, tachycardia, and pleuritic chest pain for 5 days. On physical examination, he had tachypnea. A plain chest film showed linear atelectasis but no other pathological appearance.

The patient had normal blood pressure and oxygen saturation levels. A slight ST elevation was noticed in the anterior leads on ECG. Troponin I level was normal but D-dimer was increased (1220 ng/ml). An echocardiogram was obtained, which showed normal wall motion with an ejection fraction of 60% or right ventricular loading. As D-dimer level was increased and a multislice thoracic computed tomographic angiography was performed to detect a possible new episode of pulmonary embolism. That examination revealed vascular filling defects in the subsegmental pulmonary arteries compatible with embolism (Figure 1a, b). Medical treatment was arranged accordingly. Protein C and protein S activity measured to exclude hematological causes of thrombophilia were within normal levels. According to the color Doppler sonographic evaluation of both lower extremity venous system, a saccular venous aneurysm of popliteal partially heterogeneous thrombi was detected (Figure 2a, b). The femoral vein also contained wall changes as a sequel of previous thrombotic episodes. An indirect computed tomographic venography also showed a saccular venous aneurysm of the popliteal vein, which was partially thrombosed (Figure 3a, b). The specific treatment approach of a PVA is surgical repair (1). An elective

neurysmectomy was planned for the partially thrombosed saccular popliteal venous aneurysm.

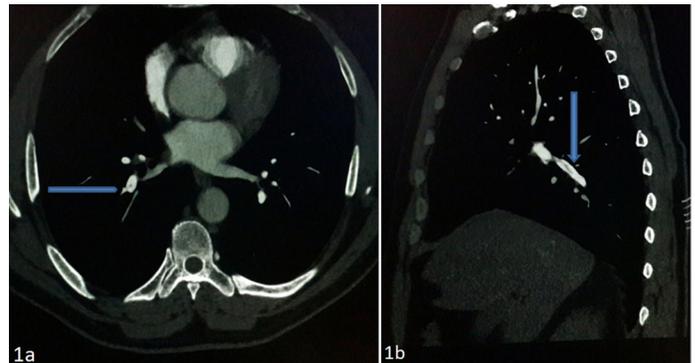


Figure 1a, b. Pulmonary CT angiographic examination showing hypodense linear thrombotic material causing filling-defects at the subsegmental level of the lobar branch of both main pulmonary arteries consistent with embolism (arrow)

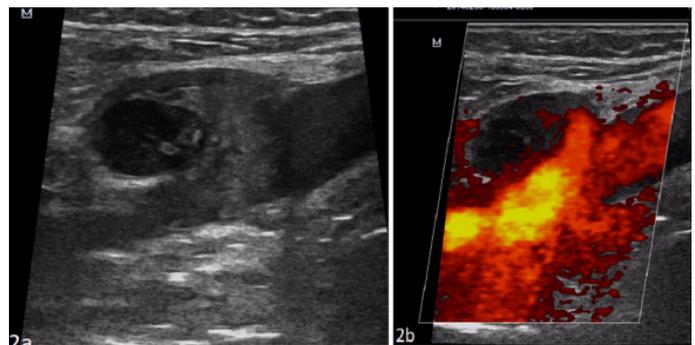


Figure 2a, b. Gray scale B-mode and Power Doppler examination showing a sacular aneurysmatic dilatation in the middle portion of the popliteal vein with partially echogenic thrombotic material causing a filling defect within the lumen

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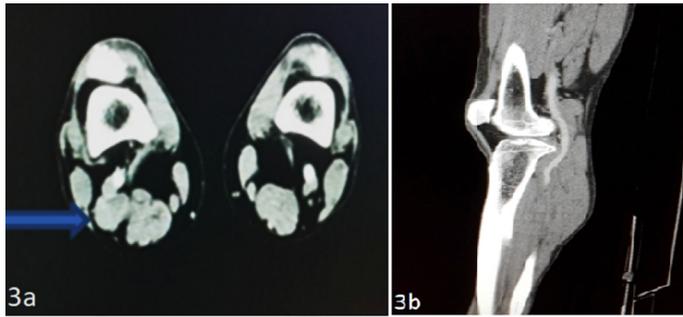


Figure 3a, b. Contrast enhanced indirect CT venography confirming the presence of a saccular aneurysmic venous dilatation in the popliteal vein in sagittal and axial cross-sections.

In our patient's anamnesis, there were no other clinical and laboratory risk factors for recurrent embolism occurrence. Doppler usg examination was not performed in embolism previously, and aneurysm was just identified. Therefore, our case was entitled as "recurrent pulmonary embolism caused by partially thrombosed saccular popliteal venous aneurysm".

Popliteal vein aneurysms (PVA) have a lower incidence than popliteal arterial aneurysms but still potentially threat lives of patients since they may lead to pulmonary embolism and embolic events to other systems (2-5). Although the etiopathogenesis of PVA is uncertain, inflammation, congenital vessel wall weakness, hypertension, mechanical trauma, and vascular degeneration considered as possible risk factors (6). According to our current literature knowledge, the incidence of this entity is extremely rare <0.5% (7). Anticoagulant therapy may fail to prevent recurrent episodes of pulmonary embolism.

Although encountered seldomly, focal popliteal venous aneurysms/saccular aneurysms must be considered in the differential diagnosis of recurrent pulmonary embolism.

In these cases, anticoagulation may prove ineffective and venous saccular aneurysmectomy is curative (8).

Lower extremity venous duplex ultrasound examination is also an effective and reliable diagnostic tool for this entity.

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