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CLINICAL IMAGE

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Conservatively managed saddle pulmonary embolism

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Abstract

Massive, submassive, and nonmassive pulmonary embolism relate to the hemodynamic state, while saddle pulmonary embolus is a purely radiologic term. Patients with saddle embolus often present with hemodynamic compromise. However, treatment depends on the clinical presentation, and stable patients with a saddle pulmonary embolus can respond well to conventional anticoagulation.

KEYWORDS

anticoagulants, computed tomography angiography, factor Xa inhibitors, fibrinolysis, pulmonary embolism

1 | CASE HISTORY

A 68-year-old man presented with progressive dyspnea and swelling of the right leg over a 3-day period. He was hemodynamically stable, but required low-dose oxygen therapy (Table 1). Echocardiography showed dilatation of the right-sided cavities, interventricular septal flattening, moderate tricuspid regurgitation, and an elevated right ventricular

TABLE 1 Clinical and biochemical variables at admission

Vital signs	
Respiratory rate (per minute)	18
Oxygen saturation (without oxygen supplementation) (%)	90
Oxygen saturation (with oxygen supplementation 3 L/min by nasal cannula) (%)	95
Blood pressure (mm Hg)	133/88
Heart rate (beats per minute)	83
Arterial blood gas analysis (with oxygen supplementation 3 L/min by nasal cannula)	
pO_2 (kPa)	13.7
pH	7.52
pCO_2 (kPa)	3.6
HCO_3^- (mmol/L)	24.9
Blood tests	
Fibrin D-dimer (mg/L)	10.0 (reference: <0.5)
High-sensitivity troponin I (ng/L)	140 (reference: <47)
N-terminal pro-B-type natriuretic peptide (ng/L)	3.920 (reference: <125)

Clinical and biochemical variables at admission.

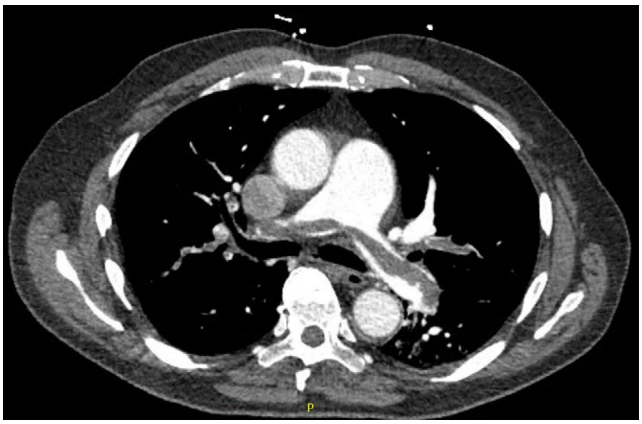

FIGURE 1 Acute CT pulmonary angiography showing a saddle pulmonary embolism and multiple emboli in the arteries supplying all lobes on both sides

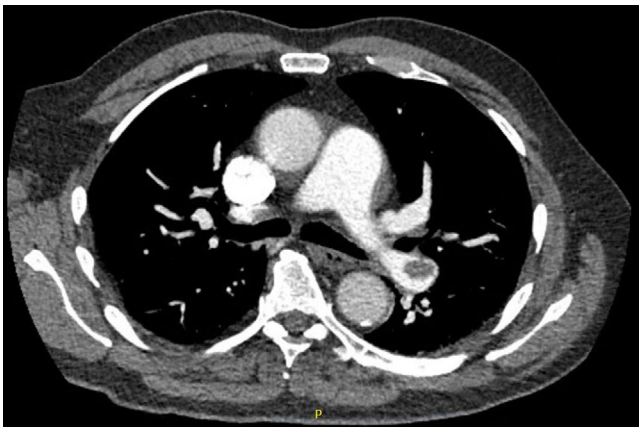

FIGURE 2 Repeat CT pulmonary angiography showing significant resolution of the saddle embolism

systolic pressure of 50 mm Hg. CT pulmonary angiography revealed a saddle pulmonary embolism and multiple bilateral emboli (Figure 1). Compression ultrasound confirmed a right-sided deep vein thrombosis. He was treated initially with tinzaparin and subsequently switched to rivaroxaban. A repeat CT performed 6 days later showed significant resolution of the saddle embolism (Figure 2). He was discharged after two weeks. His postdischarge course has been uncomplicated. Echocardiography performed 6 months later showed a normalized right ventricular systolic pressure of 35 mm Hg.

Fibrinolysis is first-line therapy in patients with pulmonary embolism presenting with shock or hypotension. Conversely, most stable patients are treated with conventional anticoagulants.[1] The terminology may be confusing as the terms *massive*, *submassive*, and *nonmassive* describe the hemodynamic state, while *saddle embolus* is a radiologic term. The latter often worries physicians who may feel inclined to pursue aggressive therapy. However, while such patients more often present with hemodynamic compromise, their prognosis does not significantly differ from those presenting in a stable fashion.[2] Accordingly, treatment depends on the clinical presentation.[1] The present case illustrates that hemodynamically stable patients with a saddle pulmonary embolus can respond well to conventional treatment.

CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTION

AK and VR: wrote the initial draft. MP: performed the echocardiogram and provided expertise in image interpretation and appropriate anticoagulation. All authors participated in collecting patient data (pictures and clinical history), reviewing the literature, interpretation of clinical findings, critical revision of the manuscript for important intellectual content, and approval of the final version.

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