

Treatment of saddle pulmonary embolism with streptokinase in an 83 year-old man — a case report

Leczenie zatoru typu „jeździec” tętnicy płucnej za pomocą streptokinazy u 83-letniego chorego — opis przypadku

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Abstract

Saddle pulmonary embolism (PE) is an embolus at the level of the bifurcation of the pulmonary trunk that extends into both main pulmonary arteries. Because of the unstable, large clot burden in the pulmonary artery and the risk of sudden haemodynamic collapse and sudden death, identifying a saddle embolus is extremely important. In this report, we describe successful treatment with streptokinase of a saddle PE in an elderly patient.

Key words: saddle pulmonary embolism, elderly patient, streptokinase

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INTRODUCTION

Saddle pulmonary embolism (PE) is an embolus at the level of the bifurcation of the pulmonary trunk that extends into both main pulmonary arteries. Because of the unstable, large clot burden in the pulmonary artery and the risk of sudden haemodynamic collapse and sudden death, identifying a saddle embolus is extremely important [1, 2]. In this report, we describe a successful treatment with streptokinase of a saddle PE in an elderly patient.

CASE REPORT

An 83 year-old man with a medical history of chronic obstructive pulmonary disease was admitted to our hospital because of sudden-onset dyspnea and chest pain. Physical examination revealed that he was dyspneic and tachypneic (respiratory rate was 25/min). His blood pressure was 90/50 mm Hg, and his heart rate was regular at 120 beats/min. He had jugular venous distention. On auscultation, there was 2/6 systolic murmur on the tricuspid area. He had coarse and prolonged breath sounds bilaterally. The electrocardiogram demonstrated sinus tachycardia. An arterial blood gas mea-

surement obtained on room air showed severe hypoxic hypocapnia with respiratory alkalosis. For low partial pressure of oxygen, he was started on low dose oxygen with venturi mask. Transthoracic echocardiography (TTE) revealed a large echogenic mass consisting of an embolus in the main pulmonary artery extending into the left and right pulmonary arteries (Fig. 1). The right ventricle was enlarged with flattened interventricular septum, indicating right ventricular pressure overload. Doppler examination showed moderate tricuspid regurgitation and pulmonary artery systolic pressure of 70 mm Hg. On Doppler ultrasound, the patient had venous thrombosis in his right femoral and popliteal veins.

Because of the location and size of the thrombi and the patient's clinical status, we decided to initiate urgent thrombolytic therapy. We preferred streptokinase (250,000 IU intravenously over 30 min, then 100,000 IU/h for 24 h) for the treatment. Unfractionated heparin infusion was instituted after thrombolytic administration.

At the end of the thrombolytic therapy, the saddle embolus was completely resolved on TTE (Fig. 2), with a clinical and haemodynamic improvement. His blood pressure was

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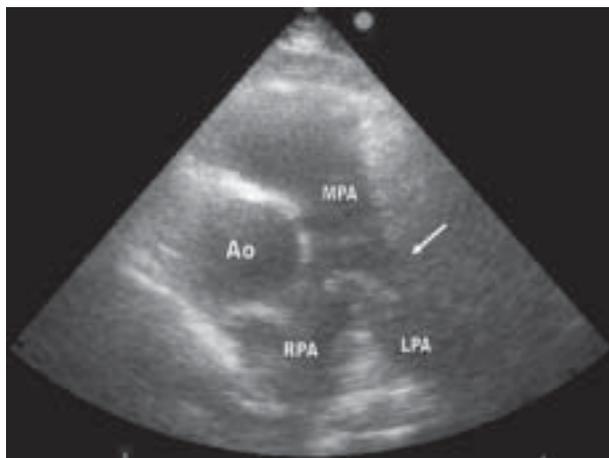


Figure 1. A saddle embolus (white arrow) at the bifurcation of the main pulmonary artery on transthoracic echocardiogram; MPA — main pulmonary artery; LPA — left pulmonary artery; RPA — right pulmonary artery; Ao — aorta

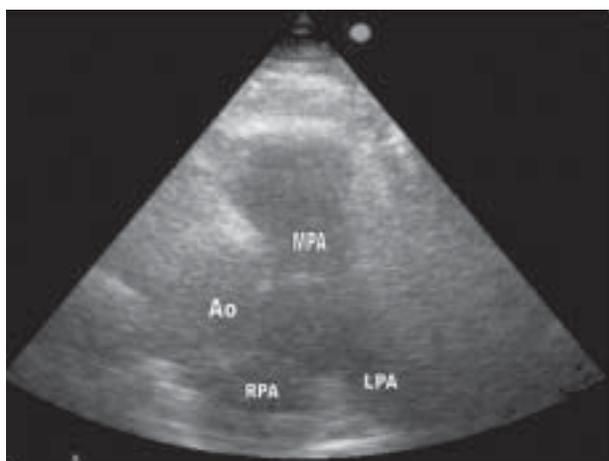


Figure 2. Transthoracic echocardiogram showing the main pulmonary artery without saddle embolus; abbreviations as in Figure 1

120/70 mm Hg, and heart rate was 86 beats/min. Pulmonary artery systolic pressure had decreased to 40 mm Hg. He was discharged from hospital on the sixth day of hospitalisation with oral warfarin therapy.

DISCUSSION

Saddle PE represents a large and unstable clot load. The clinical presentation of saddle PE varies from the absence of symptoms to death. Ryu et al. [2] reported that the frequency of saddle PE is 2.6%.

It has been suggested that saddle PE should be urgently surgically treated. However, some authors have reported successful recovery using thrombolysis or even anticoagulation [3]. A few studies have found that saddle embolism does not indicate unfavourable clinical outcomes or in-hospital mortality rates [2–4]. However, in these reports, the patients did not have high risk such as shock, syncope or heart failure.

Although thrombolytic therapy is generally avoided in elderly patients, there are a few case reports in the literature [5]. We initiated thrombolytic therapy to our elderly unstable patient after a diagnosis of saddle PE by using TTE. Because of the lack of a randomised control trial, the decision to use a thrombolytic agent needs to be made on a case-by-case basis. Risk factors for haemorrhage should be not overlooked.

Other methods such as contrast enhanced spiral computed tomography, ventilation perfusion scanning and standard angiography can be used to diagnose PE. The TTE is an attractive method because it is noninvasive and does not require an unstable patient to be transported. Echocardiography should not only be used for diagnosis, it is also useful for risk stratification and monitoring the effects of treatment.

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