

中文題目：轉移性右心腫瘤以肺栓塞為主要表現：一個罕見案例報告

英文題目：A rare case report of right ventricular metastatic tumor which initially presented as pulmonary embolism

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## Introduction

Cardiac tumor is a rare but nonnegligible disease. In the past, cardiac tumors were usually reported at autopsies. With the development of cardiopulmonary bypass, the pathological diagnosis of cardiac tumor became possible in recent years.<sup>1</sup> Herein, we introduced a rare case of right ventricle tumor complicated with pulmonary embolism. We performed surgical excision and the pathologic report revealed metastatic heart tumor.

## Case Description

An 82-year-old male with a history of right transglottic squamous cell carcinoma, iT2N0M0 stage II, was admitted to our hospital due to shortness of breath for five days. The patient underwent complete course of local radiotherapy for cancer control two years before this admission but refused further excisional surgery or systemic chemotherapy due to old age. Follow up image study showed complete remission without evidence of local recurrence or distant metastasis. This time, the patient presented with acute onset shortness of breath and dyspnea on exertion after waking up for five days before admission. The original chest CT showed bilateral pulmonary embolism with right ventricular mass and multiple mediastinal lymphadenopathies (**Figure 1A, 1B**). His initial D-dimer level was 34255. We administered heparin pump as anticoagulant therapy for his pulmonary embolism. However, the patient presented with deteriorated hypoxemia since day 5 of admission. Repeated chest CT on day 8 revealed progressed bilateral pulmonary embolism and residual right ventricular mass (**Figure 1C, 1D**) despite his D-dimer level showed a trend of decline (3817). Echocardiogram showed good systolic wall motion with a huge right ventricle mass which almost blocked the tricuspid valve of our patient during systolic phase. We performed endotracheal intubation on day 9 due to respiratory failure.

We performed surgical pericardiotomy with exploratory laparotomy on day 10 due to poor treatment efficacy of anticoagulant therapy and deteriorated clinical symptoms. A huge mass protruding from the patient's right ventricle to right atrium was noted during operation (**Figure 2**). We removed all visible tumor and sent pathologic examination. The pathologic report revealed metastatic squamous cell carcinoma. Nevertheless, post cardiac surgery myocardial stunning attacked on day 11.

Despite the patient received extracorporeal membrane oxygenation implantation (VA-ECMO) support, he died on day 17 because of subsequent multiple organ failure.

### **Discussion**

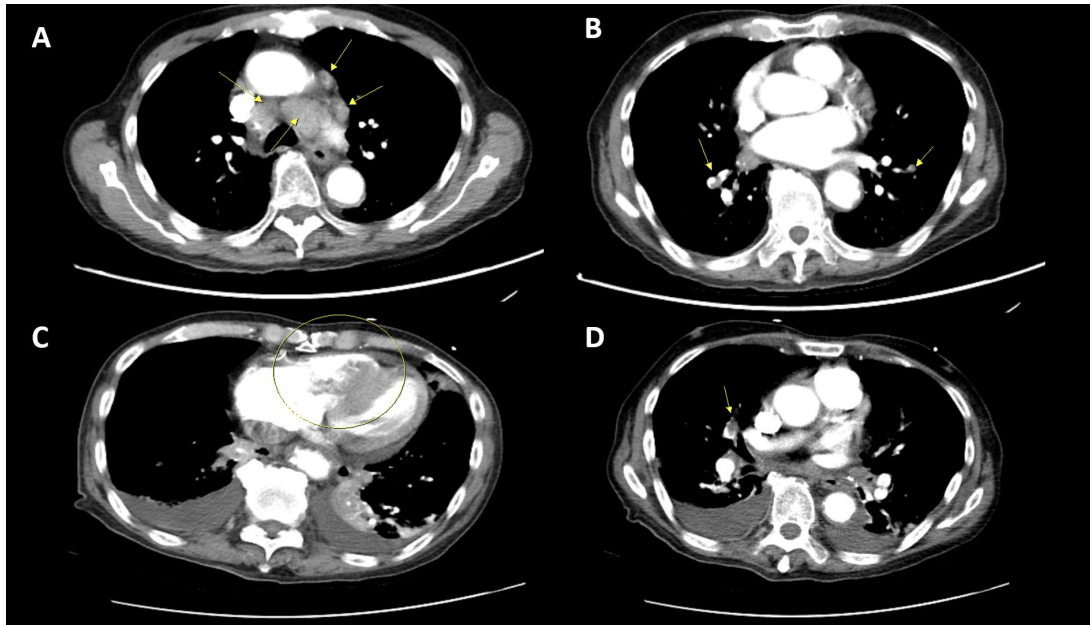
The etiology of cardiac mass is hard to confirm because it is extremely difficult to obtain specimen. History taking and cardiac image are therefore important for drawing a diagnosis. History taking could also help physicians to narrowing their differential diagnosis. For example, an apex cardiac mass found on echocardiogram in patient who recently diagnosed with anterior wall myocardial infarction with an akinetic apex of left ventricular is likely to be a cardiac thrombus.<sup>2</sup> Meanwhile, a cardiac mass found on echocardiogram in a patient who suffered from terminal cancer with multiple metastasis is likely to be a cardiac metastasis.<sup>3</sup> Age is also significant in diagnosis as far as rhabdomyoma develops almost exclusively in children, while myxoma is present in middle-aged women.<sup>4</sup>

Echocardiogram is the most popular initial diagnostic tool due to its availability and low cost.<sup>4</sup> Different etiology of cardiac tumor carries different characteristics on echocardiogram. Location is also essential because each cardiac tumor has its prevalence. For example, a small mass with stippled margin located at the downstream side of mitral valve is likely to be a papillary fibroelastoma, while an oscillating mass attached to the upstream side of mitral valve in a patient with staphylococcus aureus bacteremia is likely to be a vegetation of infectious endocarditis.<sup>4</sup>

Secondary cardiac metastasis is 20 to 40 times more common than primary cardiac tumor.<sup>5</sup> Our patient carried a history of hypopharyngeal cancer, which might hide the risk of local recurrence or distal metastasis. His echocardiogram revealed a good wall motion. Mural thrombus complicated with pulmonary embolism is therefore less likely. Besides, our patient's chest CT showed multiple mediastinal lymphadenopathies. In summary, metastatic cardiac mass should be ruled in when first time we approach our patient. The benefit and drawback of such invasive cardiac surgery should be carefully weighed during surgical planning.

### **Conclusion**

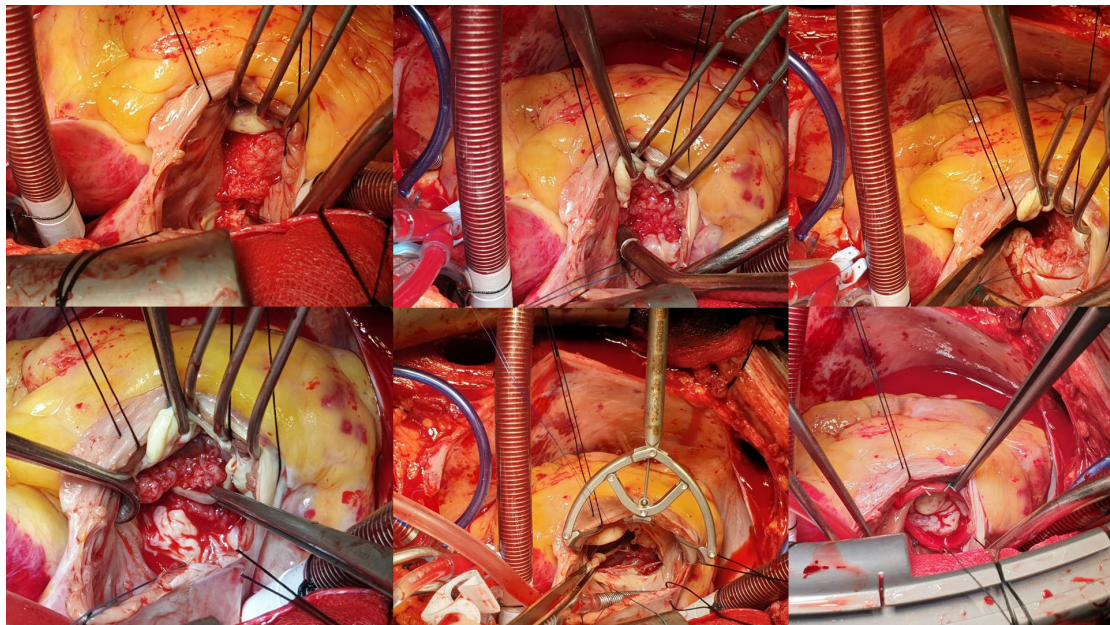
Our case highlights the significance of detailed history taking and echocardiogram in approaching patient with heart tumor. Different cardiac tumor has its prevalent age, location and echo characteristics.



**Figure 1**

The initial CT scan of our patient showed: **(A)**Multiple mediastinal lymphadenopathies **(B)**Bilateral pulmonary embolism.

CT scan after one week of anticoagulant therapy revealed: **(C)**Dilated right ventricle with a huge intraventricular mass **(D)**Progressed pulmonary embolism.



**Figure 2**

Exploratory surgery found a huge mass protruding from the patient's right ventricle to right atrium.

**Reference**

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