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Sudden death- A case of type B right ventricular thrombus

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Abstract

Background: The prevalence of a right heart thrombus in the setting of an acute pulmonary embolus is 4% to 18%¹. Without treatment, mortality is reported to be 100%². The Type B thrombus usually originate *in situ* in the right cardiac chamber and are of local origin³. The patients present with syncope, but occasionally have an insidious clinical presentation⁴. The patients are at constant risk of pulmonary embolization leading to hemodynamic instability and has a high mortality rate⁵.

Case Presentation: In the present reported case of sudden death of 35year old male known smoker, alcoholic and non-diabetic. The forensic examination had been conducted and vital organs sent for histopathological examination. On examination of heart and lungs there was evidence of Right ventricular type B thrombus and pulmonary thrombo-embolism had been reported.

Conclusions: We present a case of sudden suspicious death with no previous significant medical history related to cardiovascular system and no significant findings on forensic examination referred to histopathological examination with findings of Type B thrombus in Rt. Ventricle associated with pulmonary thrombo-embolism with an overall incidence of 4% according to existing literature.

Keywords: Sudden death, ventricular thrombus, Pulmonary embolism

Introduction

Right heart thrombi are diagnosed by echocardiography. In 1989, the European Working Group on Echocardiography identified three patterns of right heart thrombi [6]. Type A thrombi are morphologically serpiginous, highly mobile. Type B thrombi are non-mobile and are believed to form *in situ* in association with underlying cardiac abnormalities. Type C thrombi are rare, share a similar appearance to a myxoma and are highly mobile. Right heart thrombi occur in about 4% of cases of acute PE and have very high mortality rate [7].

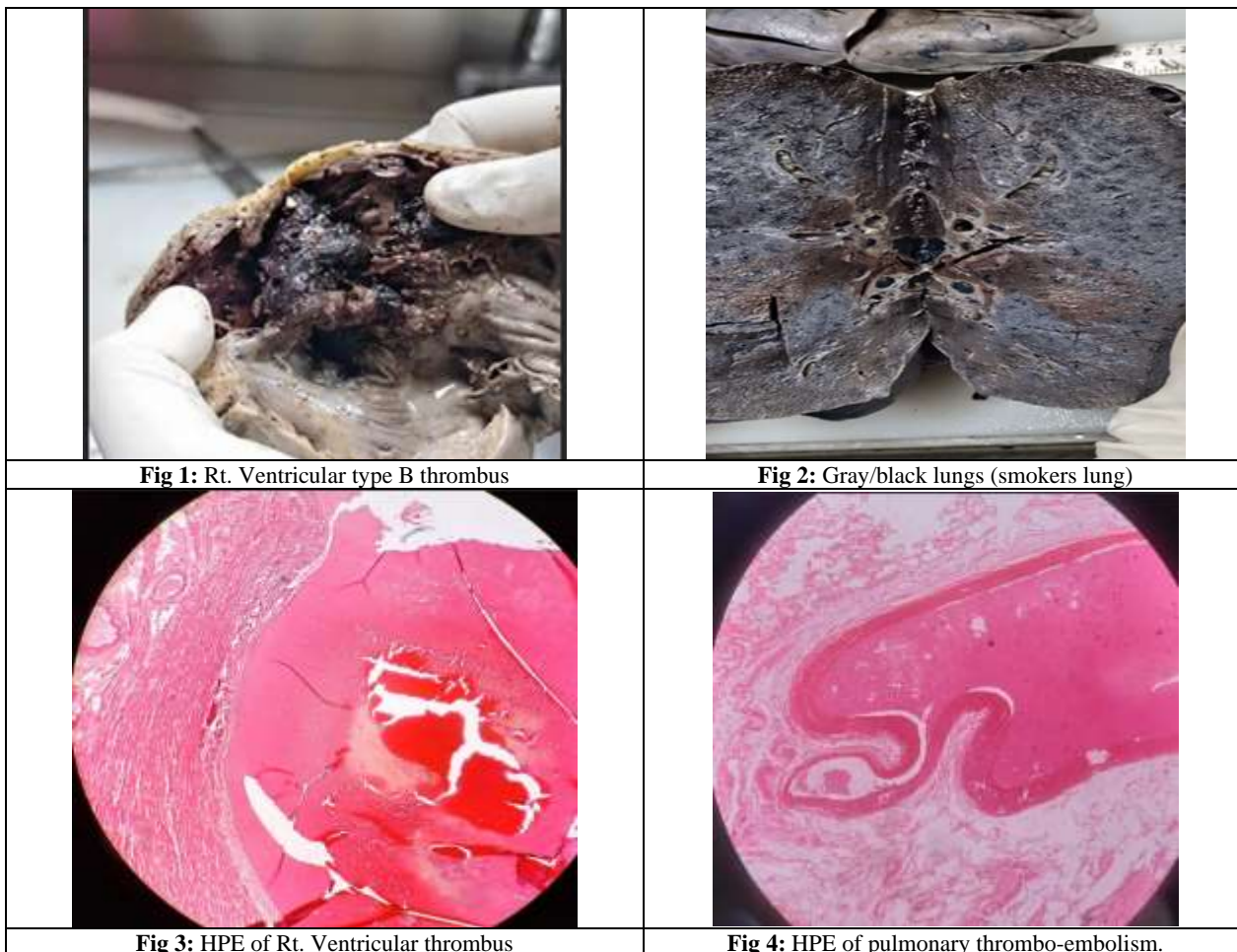
2. Case Presentation

35year old male known smoker and alcoholic with no significant previous medical history reported as sudden death came to department of forensic medicine at Government general hospital, Wanaparthy, Telangana under suspicious death. After preliminary post mortem examination, the vital organs brain, heart, lungs, liver, spleen were sent for department of pathology for histopathological examination, Stomach intestines were sent for forensic science lab. On gross examination the intact heart weighed about 260 gms with overall myocardium was brown and firm with no abnormal areas. The left atrial and ventricular thickness were 0.3cm and 1.5 cm respectively whereas the right atrial and ventricular thickness were 0.3 and 0.8 cm respectively. Thrombus measuring 4x3cm seen in the lower part of right ventricle which was firmly attached to the ventricular wall. No abnormalities seen in the valves. Lungs on gross examination dark gray/black indicative of smoker's lung. Other vital organs showed no significant gross abnormalities. Sections from all the vital organs were submitted for histopathological examination. On microscopy we had seen lines of Zahn in the type B thrombus adherent to lower right ventricular wall and evidence of pulmonary thromboembolism in the hilar vessels.

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3. Discussion

Over the past two decades, numerous cohort studies have been conducted and have found right heart thrombus to prognosticate a significantly worse outcome in patients with acute pulmonary embolism [8].

While several studies have assessed the clinical features and management of patients with right heart thrombus, the strongest data to date have almost exclusively utilized data from large pulmonary embolism registries where right heart thrombus is an adjunctive diagnosis [9-11].

In an analysis of the International Cooperative Pulmonary Embolism Registry (ICOPER), patients with right heart thrombus and pulmonary embolism had a 90-day mortality rate of 29% [12].

The present case is interesting as type B thrombus is much insidious and in-situ in origin, occurs mostly due to existing cardiac abnormalities when compared to type A thrombus which is thought to be more associated with deep venous thrombosis and pulmonary thromboembolism but still the existing literature warrants to search for pulmonary thromboembolism in type B thrombus also, which was done and it was evident in our case.

4. Conclusions

In summary we provide an evidence of a case of sudden death where external

Examination of vital organs on routine forensic examination did not provide any

Information rather a detailed histopathological examination had provided the

Evidence of Type B right ventricular thrombus associate with pulmonary

Thromboembolism which account for 4 to 18 percent of patterns of right heart thrombi

As per existing literature

Conflict of Interest

Not available

Financial Support

Not available

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