

Case Report

Bug on the Valve Appearance: A Thrombus on the Tricuspid Valve in a Child

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A seven month old child with perimembranes ventricular septal defect was evaluated and taken for ventricular septal defect closure. On right atriotomy, we identified a dark, glistening and hard structure of about 2x2 millimeter which was firmly attached to the anterior tricuspid valve leaflet (Figure 1). No similar structures were seen in the right atrium and right ventricle. Perimembranes ventricular septal defect was closed as routinely. The hard structure was excised from the anterior tricuspid leaflet without causing structural damage to the leaflet. The specimen was sent for histopathology examination. Histopathology examination had the findings of thin walled blood vessels filled with thrombus with an impression of bland thrombus (Figure 2). Postoperatively child was evaluated for coagulation disorders, coagulation factors deficiency and all results were negative. Protein C and protein S levels were under normal limits. Child had no past history of central venous line insertion or had been treated for septicemia before. The child was discharged on 5th post-operative day. Postoperative echocardiography was normal. Patient is doing well at 6 months follow up.

Discussion

Right atrial thrombus is a known complication of long-term indwelling central venous catheter which can cause injury to the endothelium leading to vascular hyperplasia and thrombus formation on the raw surface [1,2]. Thrombus formation may be due to hypercoagulability state subsequent to chemotherapeutic drugs [2]. Our case had no past history of central venous line insertion or had been treated for septicemia before. Cardiac thrombus may be a complication of primary cardiac, hematological and rheumatological disease also [3]. Cardiac sourced thromboembolism can be predicted on the basis of echocardiographic findings such as the presence of spontaneous echocontrast, mitral stenosis, history of thromboemboli,

Abstract

A bland thrombus on the tricuspid valve without history of central venous line placement or coagulation disorders or malignancy is extremely rare condition. We report a case of incidentally detected bland thrombus on the tricuspid valve in a seven month old child while performing surgery for ventricular septal defect. We report operative images, histopathology image and review of literature.

Keywords: Right atrial thrombus; Tricuspid valve thrombus; Right atrial bland thrombus

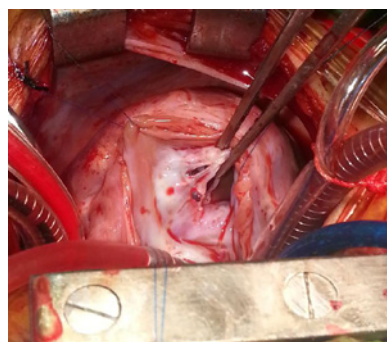


Figure 1: A dark, glistening and hard thrombus of about 3x3 millimeters on the anterior tricuspid valve leaflet.

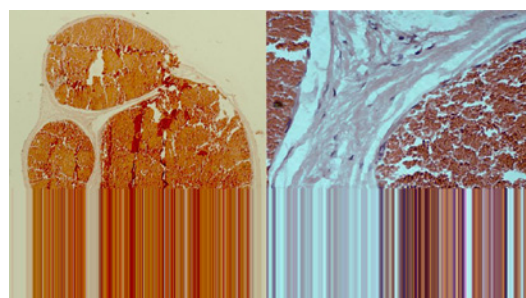


Figure 2: Histopathology shows thin walled blood vessels filled with thrombus in 10x and 40x magnification.

atrial fibrillation and increased coagulation markers [4]. Thrombus could not be diagnosed preoperatively by echocardiography in our case because of its small size. Usually the right atrial thrombus is accompanied with a cause. The case reported by us did not have any commonly described causes causing right atrial thrombus. Konishi H, et al. [5] has reported a case of thrombus on the septal aneurysm

in a case of VSD. In our case the thrombus was on the atrial side of the anterior tricuspid leaflet surface without septal aneurysm formation. It may be most likely that the flow jet through the VSD would be the cause of trauma causing the thrombus formation on the septal leaflet. These types of lesions can come across routinely in our cardiac surgery practice and should not be an alarming entity.

References

1. Simmons JR, Buzdar AU, Ota DM, Marts K, Hortobagyi GN. Complications associated with indwelling catheters. *Med Pediatr Oncol.* 1992; 20: 22-25.
2. Gilon D, Schechter D, Rein AJ, Gimmon Z, Or R, Rozenman Y, et al. Right atrial thrombi are related to indwelling central venous catheter position: insights into time course and possible mechanism of formation. *Am Heart J.* 1998; 135: 457-462.
3. Gurgun C, Sagcan A, Cinar CS, Yagdi T, Zoghi M, Tekten T, et al. Right atrial and ventricular thrombi in Behcet's disease: a case report and review of literature. *Blood Coagul Fibrinolysis.* 2000; 11: 107-110.
4. Ercan E, Tengiz I, Sekuri C, Sahin F. Cardiac thrombi in a patient with protein-C and S deficiencies. *Thrombosis journal.* 2004; 2: 2.
5. Konishi H, Fukuda M, Kato M, Misawa Y, Fuse K. Organized thrombus of the tricuspid valve mimicking valvular tumor. *Ann Thorac Surg.* 2001; 71: 2022-2024.