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Inflammatory Granuloma Originating from the Right Ventricular Outflow Tract Causing Pulmonary Stenosis

E-PAGE ORIGINAL IMAGE

A 66-year-old female was found with a cardiac mass 1 week ago. The patient had a history of rheumatoid arthritis for several years. Physical examination revealed a 2/6 systolic murmur heard at the 3rd intercostal space on the left border of the sternum. The electrocardiogram showed sinus rhythm. Transthoracic echocardiography (TTE) showed an echogenic mass with the size of 29.3 mm × 23.2 mm arising from the right ventricular outflow tract (RVOT) causing pulmonary stenosis (Figure 1A), systolic RVOT antegrade flow of 3.2 m/s, and pulmonary artery pressure of 41 mm Hg (Figure 1B). Cardiac computed tomographic angiography showed a round mass with central patchy enhancement originating from RVOT, measuring the size of 29.1 mm × 22.4 mm (Figure 1C and D). The patient underwent resection of the RVOT mass under extracorporeal circulation. The patient had an uneventful recovery and was discharged 7 days later. Postoperative pathology confirmed it as an inflammatory granuloma (Figure 1E and F).

Inflammatory granuloma is a special type of chronic inflammation often characterized by focal collections of macrophages, epithelioid cells, and multinucleated giant cells. It is usually caused by many infective, toxic, allergic, autoimmune, and

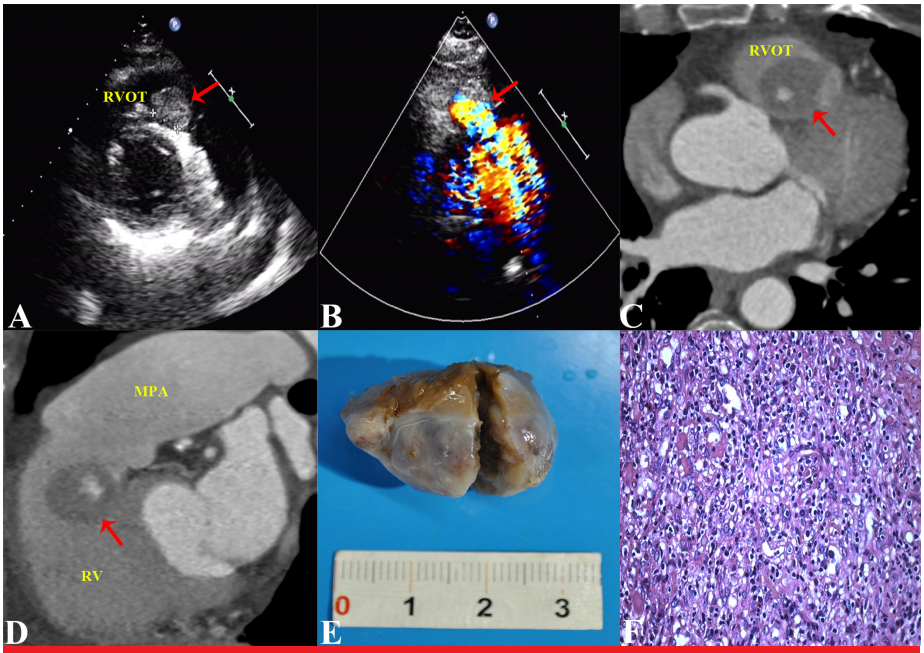

Figure 1. (A and B) Transthoracic echocardiography reveals an echogenic mass with a size of 29.3 mm × 23.2 mm arising from the RVOT causing pulmonary stenosis. (B and C) Cardiac computed tomographic angiography showed a round mass with central patchy enhancement originating from RVOT. (D) Postoperative histopathology confirmed the mass as an inflammatory granuloma. MPA, main pulmonary artery; RV, right ventricle; RVOT, right ventricular outflow tract.

Leizhi Ku[1#]
Yafeng He[2#]
Xiaojing Ma[2]

[1]*Department of Radiology, Wuhan Asia Heart Hospital, Wuhan, P.R. China*
[2]*Department of Echocardiography, Wuhan Asia Heart Hospital, Wuhan, P.R. China*

Corresponding author:
Xiaojing Ma
✉ klz1534292102@163.com

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#Leizhi Ku and Yafeng He have the same contribution to the article.

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neoplastic diseases and also conditions of unknown etiology.[1] The inflammatory granuloma originating from the RVOT is rare and may cause obstruction of the RVOT and pulmonary main trunk, which may also lead to complications such as syncope, pulmonary embolism, and sudden death.[2] The risk of life-threatening complications indicates the importance of early diagnosis and prompt surgical resection as soon as possible. To our knowledge, this accurate diagnostic and therapeutic challenge remains challenging. The differential diagnosis mainly includes other intracardiac neoplasms such as thrombus, myxoma, fibroelastoma, and nonmyxomatous neoplasm.[3] Multimodality imaging is an important concept for the diagnosis and treatment process. Transthoracic echocardiography enables preoperative assessment of morphologic properties of the tumor such as their location, attachment, shape, size, mobility, and possible hemodynamic-related implications. Transesophageal echocardiography accurately identifies other localization of myxomas as well as the risk of RVOT obstruction. Cardiac computed tomographic angiography and cardiac magnetic resonance scans offer additional information about the structure and function of cardiac tumors' surgical resection. We report a rare case of inflammatory granuloma originating from the RVOT, which was successfully resected after surgery and the postoperative course was uneventful. Our case highlights that multimodality imaging plays an important role in distinguishing from other mimic tumors and assessing this tumor's location, size, and the relationship of surrounding adjacent structures.

Informed Consent: Informed consent was obtained from the patient for this study.

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