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*Interact CardioVasc Thorac Surg* 2005;4:173-174; originally published online Mar 21,  
2005;

DOI: 10.1510/icvts.2004.105551

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## Case report - Cardiac general

# Left atrial dissection following mass removal from right ventricle: non-surgical therapy

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Received 7 January 2005; received in revised form 18 February 2005; accepted 21 February 2005

### Abstract

Left atrial dissection is a severe but rare complication, and it is generally associated with mitral valve interventions. But other predisposing factors should be considered in pathogenesis. Here we describe a patient who developed interatrial dissection following a mass removal from right ventricle. The dissection was recognised with transesophageal echocardiography and it was spontaneously cured with conservative therapy. Transesophageal echocardiography is strongly recommended during and after operations in patients with heart valve interventions in order to recognise such rare but severe complications.

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**Keywords:** Left atrial dissections; Right ventricular mass; TEE

### 1. Introduction

Left atrial dissection is a severe but rare complication occurring in approximately 0.84% of valve interventions particularly mitral valve [1]. The main site of dissection is reported to be located along the posterior wall of the left atrium in most cases and all required surgical treatment [2].

This is the first report describing left atrial dissection following an unidentified mass removal from right ventricle, which was identified by transesophageal echocardiography (TEE).

### 2. Case

A 50-year-old woman with a right ventricular mass and moderate tricuspid insufficiency was scheduled for an operation under cardiopulmonary by-pass. Cardiopulmonary by-pass and cardioplegic arrest – via antegrade cannulation – were achieved with standart fashion. A solid, regular in shape, 2×3 cm mass just beneath the tricuspid valve partially attached to chordae of the tricuspid valve was visualized via right atriotomy and it was hardly excised with a Cooley atrial retractor. Tricuspid valve was free from any sign of endocarditis. Tricuspid annuloplasty was performed following mass removal. TEE proved appropriate mass removal and valve repair. Enzyme elevations and ECG changes with regard to myocardial ischemia were not encountered. All post-operative follow-ups were uneventful. Routine transthoracic echocardiogram (TTE) revealed no abnormal findings.

On the 7th post-operative day TEE, which was performed for the evaluation of tricuspid valve and right ventricle function, showed a mobile intimal flap originating from interatrial septum on left side without an atrial septal defect. The diagnosis was atrial dissection (Fig. 1) without shunting. TTE, which was run at the same time, failed to show this inter-atrial flap. Since the hemodynamics were not affected, conservative therapy with anticoagulation was initiated.

TEE controls (approximately one week later) resulted with complete adherence of the flap to atrial septum (Fig. 2).

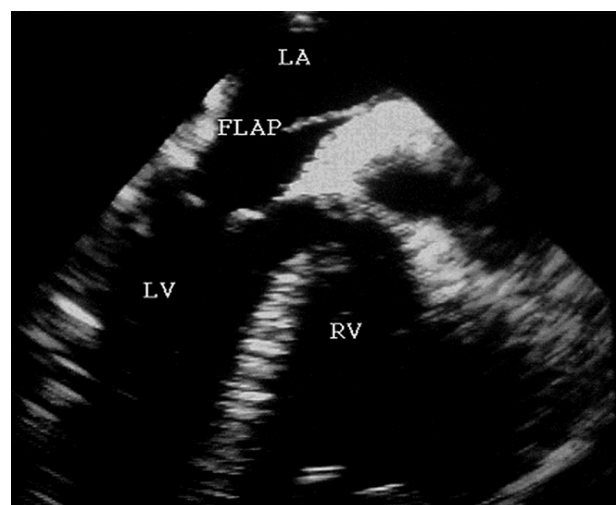


Fig. 1. TEE on POD 7 showed a mobile intimal flap originating from left interatrial septum. LA: left atrium, LV: left ventricle, RV: right ventricle.

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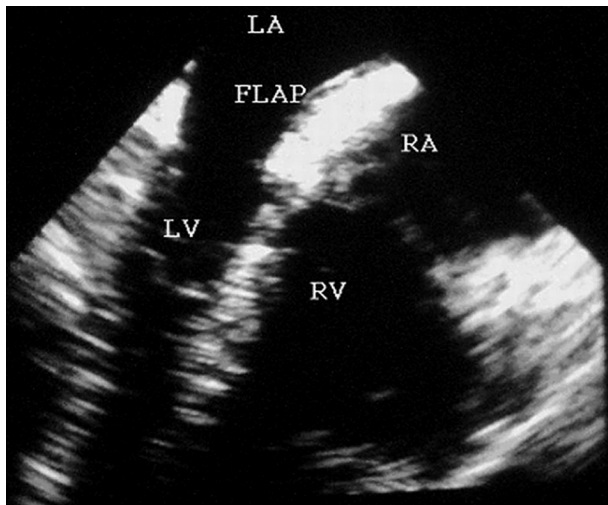


Fig. 2. TEE on POD 14 resulted with complete adherence of the flap to atrial septum. LA: left atrium, LV: left ventricle, RA: right atrium, RV: right ventricle.

The patient was discharged from the hospital and she has been doing well for 6 months.

### 3. Conclusion

Left atrial dissection is an uncommon entity and limited publications were reported. Most cases were reported to occur just 1–3 days after the operation and they all required surgical treatment. The main site of dissection was the posterior wall of the left atrium in most cases. The dissection in our case was located in the left inter-atrial septum. Two different types of surgical treatment have been reported for the left atrial dissection, namely entry closure and internal drainage. In our case, the onset was late, there was no shunting and the patient's hemodynamics was stable. Therefore we treated the atrial septum dissection conservatively, and it was spontaneously cured. In the literature there was only one case reported with conservative treatment [2].

It is unclear how the mass excision from the right ventricle caused left atrial dissection in our case, but technical maneuvers during the operation might have played a devastating role, because excision of the mass was hardly performed with probably improper retraction. Surgical pro-

cedures in the right atrium, such as atriotomy, improper manipulations, retrograde cardioplegia, endocarditis, blunt chest trauma and damaged small vessels in the atrial septum gradually making a large hematoma in the interatrial septum may play a role in the setting of left atrial dissection [2,3]. Additionally, elderly women with a heavily calcified annulus and small ventricles are at particularly high risk for atrial dissection [4].

The onset of atrial dissection and, its form of presentation vary widely, relating to the intensity and to the moment in which the symptoms appear. The clinical diagnosis can be confused with valve dysfunction and myocardial infarction. We realized left atrial dissection incidentally since our patient was free from any symptoms and laboratory findings with regard to endocarditis and myocardial ischemia were all in natural limits. The transesophageal echocardiogram is the first choice for diagnosis since the dissection can be missed by TTE [5]. Possibly, we misdiagnosed the existence of dissection by TTE during routine follow-up on 3rd postoperative day or this dissection occurred later. Color flow Doppler was particularly useful in identifying complications [3].

Our case showed, left atrial dissection could occur after not only valve surgery but also mass removal right ventricle, and it is a rare complication that can be treated when diagnosed in time. We treated the atrial septum dissection conservatively, and it was spontaneously cured.

Although extremely rare, left atrial septum dissection should be kept in mind after postoperative course of right ventricle operations. Intraoperative and postoperative transesophageal echocardiography is strongly recommended in all open-heart surgical procedures.

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