

**Case
Report**

Extensive Resection and Double-Patch Reconstruction for Left Atrial Myxoma

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The efficacy and safety of surgical intervention for atrial myxoma are established, but the operative approach to tumor resection and atrial reconstruction are controversial. A biatrial approach is generally used for excision of atrial myxoma and has many advantages. In contrast, there are a few reports about the method of double-patch reconstruction, and the right and left atrium are individually reconstructed with the two patches. We found it to be effective in the case reported here. We suggest that this method can be applied to atrial myxoma in which extensive resection is necessary.

Keywords: myxoma, biatrial approach, double-patch reconstruction

Introduction

The first successful excision of a left atrial myxoma was reported by Crafoord in 1955.¹⁾ The efficacy and safety of surgical intervention for atrial myxoma is now established, but the operative approach for resection of the tumor and the method of atrial reconstruction are controversial. The surgical strategy should be determined based on the location, size, and site of attachment of the tumor and the area of the iatrogenic atrial defect, with the goal of complete resection of the tumor, precise reconstruction of the iatrogenic atrial defect, and no recurrence.

Case Report

The patient was a 76-year-old woman who complained of exertional dyspnea. Echocardiography showed

a 78 × 33 mm tumor in the left atrium (**Fig. 1A**). The tumor was broadly attached to the atrial septum and left atrial roof and prolapsed into the left ventricle during diastole. Mitral regurgitation of grade 2 occurred because of the tumor, with tricuspid regurgitation of grade 2 to 3. The patient was referred to our hospital for surgical treatment of the tumor. An urgent operation was performed because of occurrence of congestive heart failure.

After standard median full sternotomy, cardiopulmonary bypass was initiated with ascending aortic and bicaval cannulation with moderate hypothermia. Cardiac arrest was achieved by aortic cross-clamping and antegrade cold cardioplegia. A left atriotomy was made posterior to the interatrial groove, but was not extended because the tumor was attached to the area of the left atrial wall adjacent to the interatrial groove. A right atriotomy was then made, and the anterior wall of the right atrium was door-opened superiorly and inferiorly to provide adequate exposure for complete resection of the tumor (**Fig. 2A and 2B**). The tumor was broadly attached to the atrial septum, left atrial roof and right wall of the left atrium. The tumor was resected en-bloc with an adequate rim of the atrial wall (**Fig. 2B and 2C**). The mitral leaflets were intact.

Tricuspid annuloplasty was performed using the DeVega method. The large iatrogenic defect in the atrial septum and biatrial wall was repaired using two equine pericardial patches. The right and left atrium were individually

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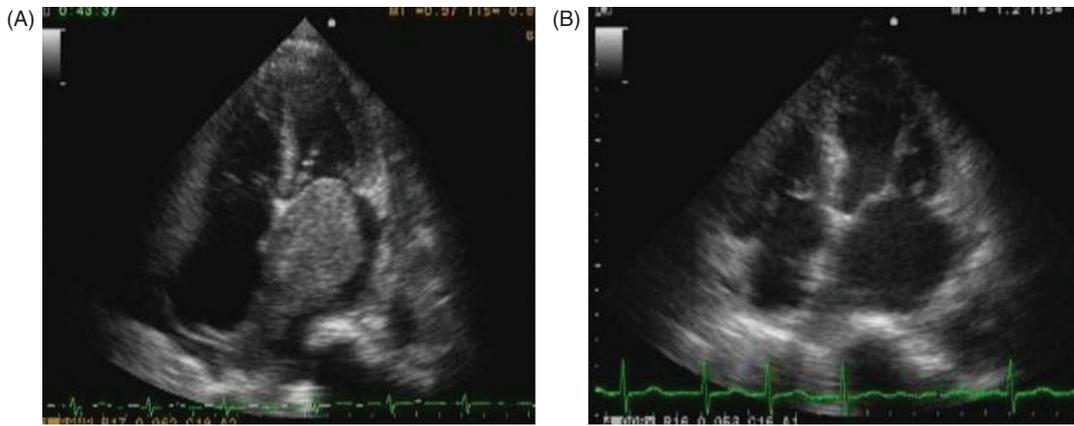


Fig. 1 (A) Tumor of 78 × 33 mm occupying the left atrium and broadly attached to the atrial septum and left atrial wall. (B) Postoperative echocardiography showed no recurrence of the tumor.

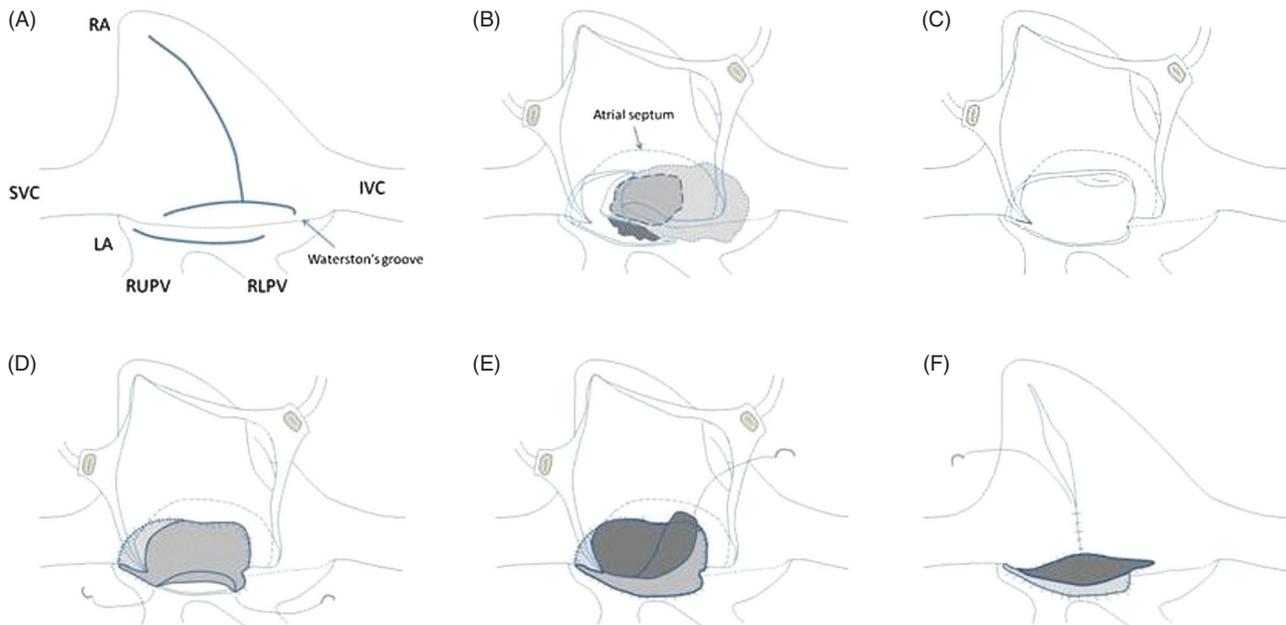


Fig. 2 (A) Biatrial approach to the tumor. (B, C) The right atrium was door-opened superiorly and inferiorly to provide adequate exposure of the tumor (B), which was then resected en-bloc with the atrial wall (C). (D) An equine pericardial patch was sutured to form the atrial septum and left atrial wall. (E) Another patch was used to form the atrial septum and right atrial wall. (F) The atrial septum consisted of two patches, and the right atrium was closed. SVC: superior vena cava; IVC: inferior vena cava; RA: right atrium; LA: left atrium; RUPV: right upper pulmonary vein; RLPV: right lower pulmonary vein.

reconstructed with the two patches, such that the atrial septum consisted of two patches (**Fig. 2D, 2E, and 2F**). Cardiopulmonary bypass was easily discontinued under temporary atrial and ventricular pacing.

The postoperative cardiac rhythm was junctional bradycardia, and temporary pacing was required for about two weeks, but a natural recovery of sinus rhythm subsequently occurred. Postoperative echocardiography showed no recurrence of the tumor (**Fig. 1B**), and postoperative computed tomography showed good shape of the two

atria (**Fig. 3**). The pathological findings indicated myxoma and the stump of the resected tissue was free from tumor cells. Complete resection was achieved, and now the patient has no evidence of recurrence 2 years later.

Discussion

Approaches to left atrial myxoma include an isolated left atriotomy, right atriotomy with trans-septal incision, and a biatrial approach. The biatrial approach for these

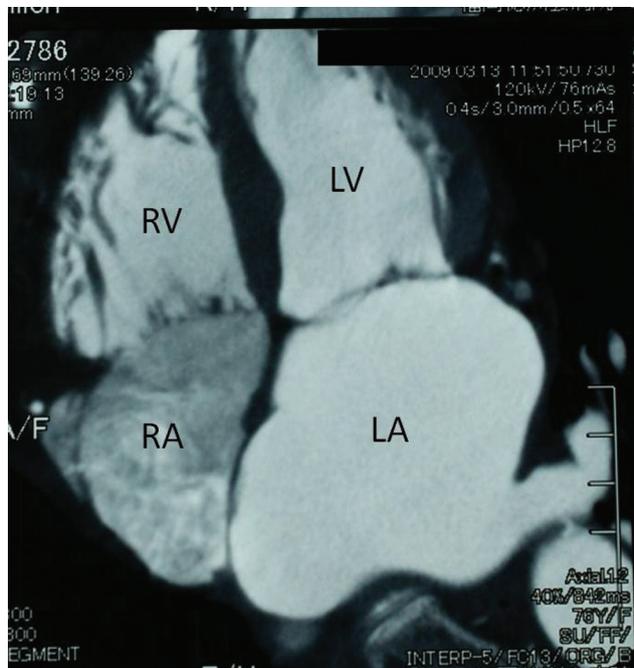


Fig. 3 Postoperative computed tomography showed good biatrial reconstruction. RA: right atrium; RV: right ventricle; LA: left atrium; LV: left ventricle.

tumors was first reported by Kabbani and Cooley in 1973.²⁾ It is now the most widely accepted method for excision of atrial myxoma since it has advantages of identification of the site of attachment, minimal manipulation and prevention of embolism of the tumor, adequate margins of excision, inspection of the four cardiac chambers, and secure closure of the iatrogenic atrial septal defect.³⁻⁶⁾

In the present case, surgical en-bloc resection and pathological complete resection of the tumor were accomplished using a biatrial approach. In surgery for atrial myxomas, it is important to select a method of atrial reconstruction that corresponds to the area of the iatrogenic atrial defect. Atrial myxomas are generally pedunculated,⁷⁾ but if sessile as seen in our case, which

causes a large defect. In such cases, patch repair are required to close the defect, and many methods have been reported.⁸⁾ Because the defect was very large in our case, two patches were used for individual reconstruction of the right and left atrium. We found that this reconstruction method was very effective, and we suggest that it may be useful in cases of atrial myxoma for which extensive resection is necessary.

Disclosure Statement

The authors have no conflicts of interest.

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