Bratisl Lek Listy 2010; 111 (10)
549 – 551

CASE REPORT

Recurrent multiple cardiac myxomas

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Abstract: *Background:* The recurrence of cardiac myxoma after a surgical excision is a rare condition. The mechanism responsible for the recurrence remains unclear. Multifocal growth of a benign myxoma or malignant transformation, inadequate resection, intraoperative implantation or embolization, familial disposition, and the abnormal DNA ploidy patern play an important role in development of recurrent myxoma.
Case: We report the case of a 24-year-old female with recurrent multiple cardiac myxomas. She had an abortus 2 months ago. The patient had undergone a resection of left atrial and right ventricular myxoma with extension to the right pulmonary artery 8 years ago. The preoperative echocardiographic examinations revealed recurrent left atrial and right and left ventricular myxomas. The patient underwent a redo-surgery and, in addition to a large myxoma in the right ventricle with involvement of the tricuspid valve and anterior papillary muscle, three myxomas including both myxomas originating at the top and the base of the posterior papillary muscle, respectively, the other myxoma between both papillary muscles in the posterior wall of the left ventricle, and 2 more small myxomas including 1 in the interatrial septum and the other on atrial surface of anterior mitral annulus were found in the left ventricle and atrium.
The myxomas were successfully excised through a transmitral approach with a combined bi-atrial incision. The tricuspid valve and mitral valve were repaired with annuloplasty. She had an uneventful postoperative course and no residual myxoma was found by echocardiography.
Conclusion: We think that a long-term follow-up by echocardiography in all patients after the resection of myxoma is advised for an early detection of any recurrence *(Fig. 5, Ref. 9)*. Full Text in free PDF *www.bmj.sk.*
Key words: recurrent myxoma, multiple myxoma, cardiac myxoma, surgery.

Myxomas are most commonly found in left atrium and occur sporadically in more than 90 % patients. Familial myxomas are rarer and tend to be multiple (1, 2). The recurrence of cardiac myxoma after a surgical excision is a rare condition and, though benign, the recurrence has been observed in approximately 3 % of patients with excised myxomas (3).

The mechanism responsible for recurrence remains unclear. Multifocal growth of a benign myxoma or malignant transformation, inadequate resection, intraoperative implantation or embolization, familial disposition, and the abnormal DNA ploidy patern play an important role in the development of recurrent myxoma (3, 4, 5). In this report, we present a patient with recurrent multiple cardiac myxomas.

Case report

A 24-year-old female, who had dyspnea and palpitations as symptoms for several months, was admitted to our hospital. She had an abortus 2 months ago. The patient had undergone a resection of left atrial and right ventricular myxoma with extension to the right pulmonary artery 8 years ago. She had no familial history regarding cardiac myxomas.

The preoperative echocardiographic examinations revealed recurrent left atrial and right and left ventricular myxomas (Fig. 1).

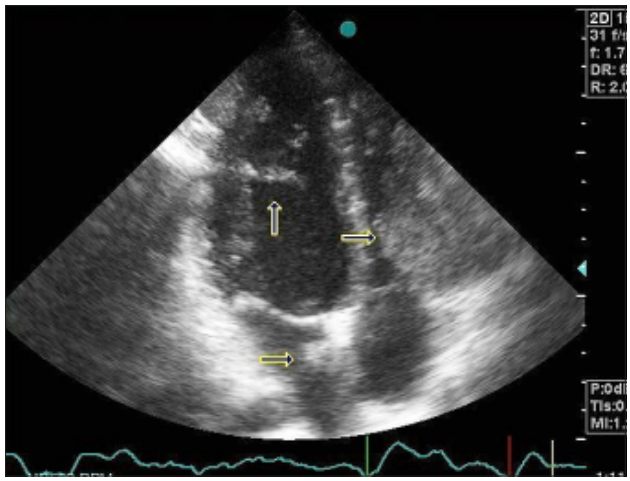

Fig. 1. Preoperative echocardiographic view of myxomas located in the left atrium, the left ventricle, and the right ventricle.

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Note: Presented at the 3rd Annual Congress on Uptake in Cardiology and Cardiovascular Surgery, November 28 – December 2, 2007, Antalya, Turkey.

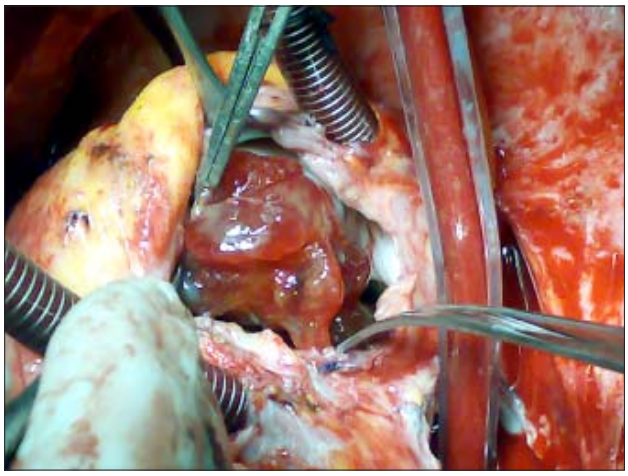

Fig. 2. Large right ventricular free wall myxoma.

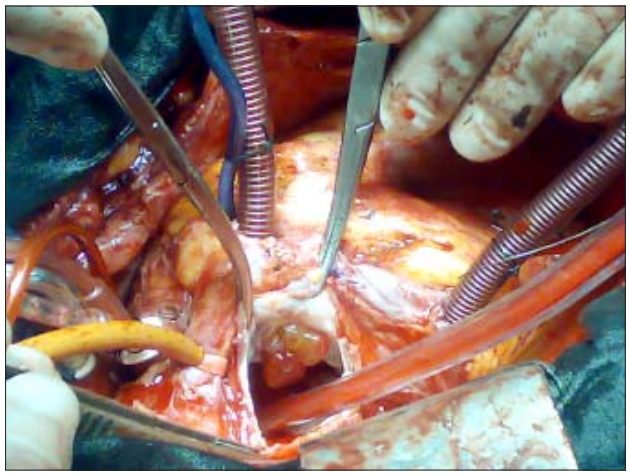

Fig. 4. Myxoma on left surface of atrial septum.

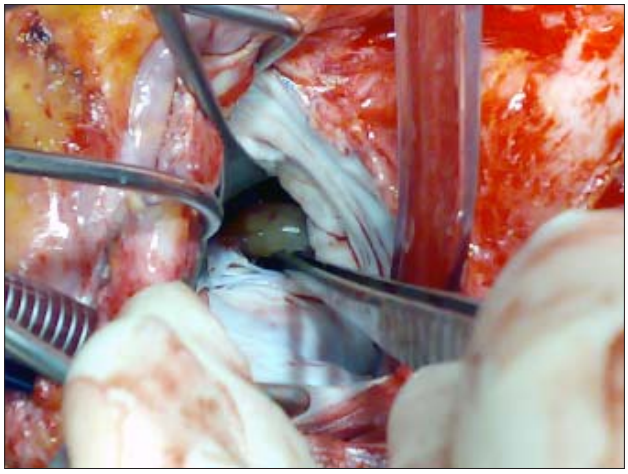

Fig. 3. Intraoperative appearance of myxoma between both papillary muscles in the posterior wall of the left ventricle.

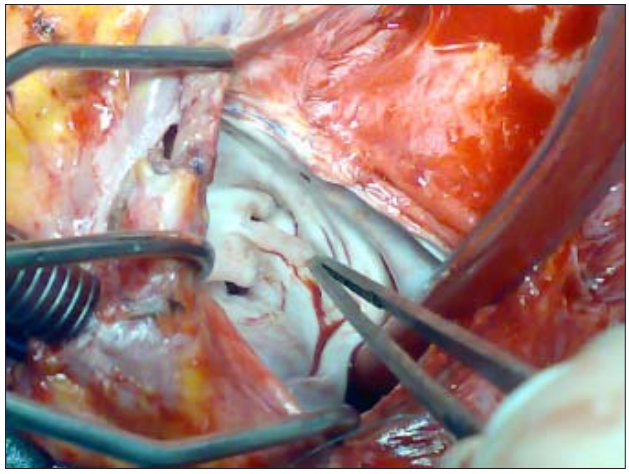

Fig. 5. Myxoma on atrial surface of anterior mitral annulus.

The patient underwent a re-operation. On exploration, in addition to a large myxoma in the right ventricle with involvement of the tricuspid valve and anterior papillary muscle (Fig. 2), three myxomas including both myxomas originating the top and the base of the posterior papillary muscle, respectively; the other myxoma between both papillary muscles in the posterior wall of the left ventricle (Fig. 3), and 2 more small myxomas including 1 in the interatrial septum (Fig. 4) and the other on atrial surface of anterior mitral annulus (Fig. 5) were found in the left ventricle and atrium.

The myxomas were successfully excised through a transmitral approach with a combined bi-atrial incision. The tricuspid valve and mitral valve were repaired with annuloplasties (suture and ring annuloplasty, respectively).

She had an uneventful postoperative course and no residual myxoma was found by echocardiography. At her recent follow-up, the patient was asymptomatic 20 months after the second operation and she had no recurrence of myxoma by echocardiograhic examination.

Discussion

Myxomas are the most common among cardiac tumors; 75 % are located in the left atrium, 20 % in the right atrium, and the rest in the ventricles. It is useful to classify these tumors as sporadic (non-familial) myxomas, familial myxomas, and “complex” myxomas (1, 2).

Cardiac myxomas have a risk for recurrence years after resection. Recurrent myxomas are also rare, appearing in 3 % of all sporadic patients that underwent a surgical treatment of a myxoma and 22 % of patients associated with the Carney complex (2, 4, 6, 7).

Multiple myxomas may occur in the same chamber or in a combination of chambers. Occasional postoperative recurrence suggests that some myxomas may have a potential for malignancy (8). An inadequate resection has been suggested to be the most common cause for recurrent myxomas arising from the atrial septum (3, 4, 5). On the other hand, remote recurrence in patients with a complete excised myxoma suggests multifocal growth as the most likely cause.

In our case, the recurrence of the myxoma is thought to be caused by implantation of tumor cells during the initial operative procedure.

Myxomas may be asymptomatic or have varied manifestations, such as symptoms resulting from mitral valve disease to systemic embolism, pulmonary embolism, and sudden death. Asymptomatic recurrences are observed in young patients who have a family history or multifocal myxomas.

Diagnosis is established in all patients by transthoracic and/or transesophageal echocardiography, which is widely recognized as an excellent diagnostic method. When diagnosing cardiac tumor, possibility of multiple formation should be always considered.

Transthoracic echocardiography may not be always reliable in the detection of recurrent cardiac myxoma in its early stages. Therefore, the transesophageal echocardiographic follow-up is advocated in high risk patients (9).

Surgery is the only effective therapeutic option for patients with cardiac myxoma. There is a general agreement on the necessity to proceed to a full-thickness resection with clear margins to minimize the risk of recurrence. As a surgical approach, the surgery should be as radical as possible in younger patients with multiple myxomas.

Conclusion

The postoperative long-term follow-up is advised in all patients who underwent the resection of a myxoma for an early detection of any recurrence.

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Received February 7, 2009.
Accepted July 30, 2010.