Iran Red Crescent Med J. 2015 November; 17(11): e19656. DOI: 10.5812/ircmj.19656

Published online 2015 November 7. **Case Report**

Right Atrium Myxoma After Lung Adenocarcinoma

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Received: May 24, 2014; **Revised:** October 3, 2014; **Accepted:** April 11, 2015

Introduction: Heart secondary tumors are much more common than primary tumors. These two types of tumors differ not only by their source but also by their symptoms and location in heart chambers.
Case Presentation: This report presents a 66-year-old heavy smoker female with a history of pulmonary lobectomy due to lung adenocarcinoma, hysterectomy due to myoma, and lumpectomy due to benign breast mass, who had symptoms of right heart failure for months. Physical examinations followed by imaging showed a mass in her right atrium, which was most likely, a myxoma. After a successful surgical excision, histopathological findings confirmed the diagnosis. More studies are needed to evaluate a possible combination between these soft tissue masses.
Conclusions: A right atrium myxoma in a patient with a history of multiple soft tissue tumors has been limited to only a few cases. This may suggest a genomic affinity or similarity; if so, those with multiple different type soft tissue masses should be screened for a heart mass before the mass becomes complicated.

Keywords: Atrium; Myxoma; Adenocarcinoma; Myoma

1. Introduction

Neoplasms of heart, either primary or secondary, are not very common. Secondary tumors (i.e. they have not originally arisen from the heart but are metastasis from other sites), are about 20 (1) to 100 (2) times more common than primary tumors. Secondary tumors are usually a metastasis from lungs, breast, esophagus, malignant lymphoma, leukemia, or malignant melanoma (2-4). They are more commonly seen in the right heart while the primary types are mostly found in the left heart (2). Cardiac metastases are mostly silent and would not be diagnosed (1).

Primary tumors are rare (0.02%) (5) and about 75% of them are benign; myxomas account for half of them. Sudden death occurs in 15% of patients with atrial myxomas, which is due to coronary embolization or obstructions of intracardial blood circulation at mitral or tricuspid valves. About 70% of atrial myxomas occur in females. Clinical features depend on the size, shape and location of the tumor. Because pedunculated myxomas are relatively mobile, the patient may be symptomatic only in particular positions. Another symptom of atrial myxomas is related to embolization and thereafter visual loss, pulmonary infarction, pulmonary hypertension and cor pulmonale. On physical examination S1 is louder and P2 may be delayed. Tumor plop, an early diastolic sound, is heard in many cases because of tumor impact against the endocardial wall. An S3 or S4 may be audible. A diastolic atrial murmur would be heard if the mitral valve is obstructed by the tumor. In case of valve damage, a systolic murmur would be heard at the apex. A right side tumor may cause a holosystolic murmur due to tricuspid regurgitation (2).

2. Case Presentation

A 66-year-old heavy smoker female with a history of pulmonary lobectomy (three years prior) due to adenocarcinoma was referred for evaluation of her exertional dyspnea, palpitation and fatigue during the preceding months. Total abdominal hysterectomy had been performed on her due to myoma and uterine bleeding during the prior four years; as well as lumpectomy for her benign breast mass. All cardiac consultations, which had

been done before the surgeries, were reported to be normal. Neither hypertension or hyperlipidemia nor diabetes was discovered in her lab tests.

On physical examination she had sinus tachycardia (heart rate 83 bpm). A split first heart sound and a holosystolic murmur, which varied with different body positions, were noticed. Two-dimensional echocardiography showed a large, three-lobe, mobile and pedunculated mass, which was attached to the anterior wall of the right atrium; suggestive of a cardiac myxoma. The preoperative chest x-ray did not show any obvious mark of lung cancer recurrence or any change in heart silhouette sign. After consulting with a cardio-surgeon, the patient was scheduled for an operation. The body temperature was allowed to drift to 33 degrees Celsius and then through a midsternotomy and pericardiotomy, she was placed on a cardiopulmonary bypass pump. Right atrium and inter-atrial septum were opened. The large pedunculated mass (45 × 35 × 20 mm), with a safe margin around its stalk, was excised. The resulting defect was sutured. The tricuspid valve remained intact. Anticoagulant (heparin and Warfarin) were started. She was discharged from the hospital six days after the surgery while she had neither her previous symptoms nor any post-operational complications.

Pathological examination confirmed the diagnosis of myxomas. Also, transthoracic echocardiographic measurement was normal two weeks after the surgery.

3. Discussion

Intracavitary heart neoplasms are not common. In a patient with a history of lung adenocarcinoma, who has right heart failure symptoms, cardiac metastasis from the lung will be on top of the differential diagnosis list (1, 3). Where benign right heart tumor and myxomas are already rare (4-9), a right atrium myxoma in a patient with a history of lung cancer, uterine myoma and breast fibroadenoma has been limited to only a few case reports (10). This may suggest a genomic affinity or similarity; if so, those with multiple different type soft tissue masses should be screened for a heart mass before the mass becomes complicated.

Acknowledgements

The authors would like to acknowledge the cooperation of the nurses and staffs of the open heart surgery department.

Authors' Contributions

Study concept and design: Ghasem Soltani, Ebrahim Golmakani and Mostafa Mehrabi Bahar. Acquisition of data: Ebrahim Golmakani, Elena Saremi and Mahnaz Ahmadi. Analysis and interpretation of data: Elena Saremi. Drafting of the manuscript: Ebrahim Golmakani and Elena Saremi. Critical revision of the manuscript for important intellectual content: Mostafa Mehrabi Bahar, Mohhamad Abbasi Tashnizi and Ghasem Soltani. Administrative, technical and material support: Mohhamad Abbasi Tashnizi and Mostafa Mehrabi Bahar. Study supervision: Mohhamad Abbasi Tashnizi, Mostafa Mehrabi Bahar and Ghasem Soltani.

References

1. Sosinska-Mielcarek K, Senkus-Konefka E, Jassem J, Kulczycka J, Jendrzejewski J, Jaskiewicz K. Cardiac involvement at presentation of non-small-cell lung cancer. *J Clin Oncol*. 2008;**26**(6):1010–1.
2. Reynen K, Kockeritz U, Strasser RH. Metastases to the heart. *Ann Oncol*. 2004;**15**(3):375–81.
3. Canver CC, Plehn JF. Concomitant occurrence of a left atrial myxoma and an adenocarcinoma of the lung. *Clin Cardiol*. 1993;**16**(8):629–30.
4. Heath D. Pathology of cardiac tumors. *Am J Cardiol*. 1968;**21**(3):315–27.
5. Reynen K. Frequency of primary tumors of the heart. *Am J Cardiol*. 1996;**77**(1):107.
6. Kim DH, Yi JE, In HJ, Jeong M, Kim MS, Lee JS, et al. Asymptomatic myxoma originating from the right ventricular outflow tract. *J Cardiovasc Ultrasound*. 2013;**21**(4):186–8.
7. Percell RJ, Henning RJ, Siddique Patel M. Atrial myxoma: case report and a review of the literature. *Heart Dis*. 2003;**5**(3):224–30.
8. Piazza N, Chughtai T, Toledano K, Sampalis J, Liao C, Morin JF. Primary cardiac tumours: eighteen years of surgical experience on 21 patients. *Can J Cardiol*. 2004;**20**(14):1443–8.
9. Nina VJ, Silva NA, Gaspar SF, Raposo TL, Ferreira EC, Nina RV, et al. Atypical size and location of a right atrial myxoma: a case report. *J Med Case Rep*. 2012;**6**:26.
10. Jan S, Dillon EH, Epstein NF. AJR teaching file: Right atrial mass in a woman with uterine fibroids. *AJR Am J Roentgenol*. 2009;**192**(3 Suppl):S53–6.