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THE ATRIAL MYXOMA IN AN ADULT: THE DYNAMIC MDCT IMAGING FEATURES

Radiodiagnosis

Shikha Bhatia* M.D.Radio-Diagnosis, Indira Gandhi Medical College Shimla, Himachal Pradesh. *Corresponding Author

Ravi Verma M.D. Pediatrics, Indira Gandhi Medical College Shimla, Himachal Pradesh.

ABSTRACT

The benign primary cardiac tumours are rare which may cause significant morbidity and mortality by affecting flow dynamics and causing arrhythmias and embolic events. However, they can be treated successfully when diagnosed earlier. Cardia myxoma is the most common among these. They typically arise from the inter-atrial septum with a narrow base of attachment. Left atrium is most common site. The various imaging features and the location of this tumour help in differentiating from other primary benign cardiac neoplasms. I report a case of left atrial myxoma in fifty five years old female. The aim of reporting this classical case of left atrial myxoma is to sensitize the clinicians and radiologists to the imaging features of cardiac myxoma and to stress the importance of early diagnosis.

KEYWORDS

Atrial, Myxoma, Benign, Cardiac.

INTRODUCTION

Primary cardiac tumours are rare, seen only 0.001%–0.03% of patients in autopsy series (1). The benign primary cardiac neoplasms are more common than malignant ones in all age groups (1). However, the benign cardiac neoplasms may lead to significant morbidity and mortality by affecting blood flow and causing arrhythmias and embolic events (1). Earlier these neoplasms were frequently diagnosed only at autopsy. Nowadays, they can be detected in living patients also due to advent of advanced cross sectional imaging and are usually treated successfully (2). Myxoma is the most common benign primary cardiac tumor, comprising up to 50-70% of all benign cardiac tumors (3). While echocardiography remains the first line diagnostic tool, in recent years the Cardiac Computed Tomography (CCT) is increasingly utilized for evaluation of cardiac masses(4,5). The cardiac myxoma may be incidentally diagnosed on CCT when the test is performed for other reasons like assessment of coronary artery disease (6).

Case History

A 55 years old female presented to the Department of Cardiology in a tertiary care hospital with complaints of shortness of breath and palpitations for one week. There was no significant past history of any cardio-vascular disease. The echocardiography was performed reporting a mass of size ~3cm in left atrium obstructing the mitral valve. For further work up dynamic cardiac CT was done. On cardiac CT, there was a homogenously enhancing polypoidal mass of size ~ 3x3.3cm in the left atrium with pedicular attachment to the fossa ovalis with average CT attenuation of 75 to 80 HU (Fig 1&2). No calcification was seen within it. This mass was reaching upto the mitral valve (Fig1& Fig2). The patient had undergone cardiac surgery which revealed a polypoidal mass in left atrium attached to inter-atrial septum which on histopathology came out to be myxoma.

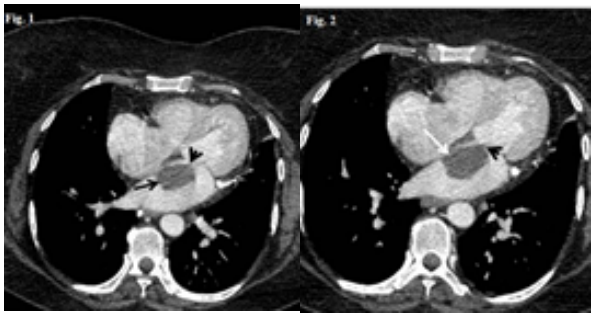

Fig. 1 & 2 are the CCT axial sections showing the enhancing lobulated mass in the left atrium(black arrow) which has narrow attachment at the inter-atrial septum (white arrow in fig.2). This mass is reaching upto the mitral valve (arrowhead).

DISCUSSION

Myxomas are the most common primary cardiac neoplasm, accounting for about 50% of all primary cardiac tumors (1) seen in the age group between 30 - 60 years with slight female preponderance(1). Although these tumors are benign, may lead to hemodynamic obstruction. Because myxomas occur most frequently in the left atrium, they can mimic mitral stenosis at clinical examination. Similiary right atrial tumours may mimic tricuspid stenosis (3). Over 90% of myxomas are solitary, intracavitary and atrial in location.They have a predilection for the interatrial septum. More specifically, they tend to arise from the fossa ovalis, a depression representing the remnant of the fetal foramen ovale. They are usually pedunculated with narrow attachment at the base of the lesion as seen in our case. At echocardiography, the characteristic narrow stalk is the most important distinguishing feature of a myxoma, followed by tumour mobility and distensibility (7,8). On CT & MRI the cardiac myxomas are well-defined, lobulated, mobile round masses usually with a narrow pedicle attached to interatrial septum seen in the left atrium. They may be heterogeneous with foci of calcification (9,10,11). The above findings are different from other common cardiac lesions. For example, cardiac thrombi are generally smaller, have lower attenuation, non-enhancing and their location is dependent on the underlying cardiac abnormality (11). Fibroelastomas are small, smooth, hypodense and irregular valvular tumours, which can be difficult to identify on CCT because of their small sizes with average of 10mm (12). Malignant cardiac metastases are the most common malignant heart tumours, are larger in size, mainly intramural, irregular and ill-defined. These can be associated with other abnormalities like pericardial effusion or lesions elsewhere in the heart (12), unlike myxomas which are generally isolated.

Compared to other imaging modalities, the advantages of CCT include rapid acquisition, high spatial resolution and the ability to assess coronary and cardiac anatomy which may be required prior to surgery. However, the potential disadvantages of CCT include the use of radiation and intravenous contrast as well as lower temporal resolution compared to echocardiography and magnetic resonance imaging (13). To conclude, CCT has an important role in assessment of cardiac structures. In this era where CCT is being performed with increasing frequency, the radiological characteristics of this rare neoplasm on CCT to help physicians with diagnosis.

REFERENCES:

1. Burke A, Virmani R. Tumors of the heart and great vessels. In: Atlas of tumor pathology: fasc 16, ser 3. Washington, DC: Armed Forces Institute of Pathology, 1996; 1–98.
2. Castells E, Ferran V, Octavio de Toledo MC, et al. Cardiac myxomas: surgical treatment, longterm results and recurrence. J Cardiovasc Surg 1993; 34:49–53.
3. Reynen K. Cardiac myxomas. N Engl J Med. 1995;333:1610-1617
4. ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR 2010 Appropriate Use Criteria for Cardiac Computed Tomography.
5. Noninvasive Coronary Artery Imaging: Current Clinical Applications Cardiac Society of Australia and New Zealand. 2010.
6. Knickelbine T, Lesser J, Haas T, et al. Identification of unexpected non atherosclerotic cardiovascular disease with coronary CT angiography. JACC.Cardiovasc Imaging. 2009;2:1085e1092.
7. Watanabe M, Takazawa K, Wada A, et al. Cardiac myxoma with Gamna-Gandy bodies: case report with MR imaging. J Thorac Imaging 1994; 9:185–187.
8. Obeid AI, Marvasti M, Parker F, Rosenberg J. Comparison of transthoracic and transesophageal echocardiography in diagnosis of left atrial myxoma. Am J Cardiol 1989; 63:1006–1008.
9. Pinede L, Duhaut P, Loir R. Clinical presentation of left atrial cardiac myxoma. Med Baltim. 2011;80:159e172.

10. Muigge A, Daniel W, Haverich A, Lichtlen P. Diagnosis of noninfective cardiac mass lesions by two-dimensional echocardiography comparison of the transthoracic and transesophageal approaches. Circulation. 1991;83:70e78.
11. Scheffel H, Baumueller S, Stolzmann P, et al. Atrial myxomas and thrombi: comparison of imaging features on CT. AJR Am J Roentgenol. 2009;192:639e645.
12. Rajiah P, Kanne J, Kalahasti V, Schoenhagen P. Computed tomography of cardiac and pericardiac masses. J Cardiovasc Tomogr. 2011;5:16e29.
13. Araoz P, Mulvagh S, Tazelaar H, et al. CT and MR imaging of benign primary cardiac neoplasm wit echocardiographic correlation. Radiographics. 2000;20: 1303e1319.