Detection of multiple pseudoaneurysms of mitral-aortic intervalvular fibrosa by multislice computed tomography in a patient with aortic valve replacement

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Introduction

Mitral-aortic intervalvular fibrosa (MAIF) pseudoaneurysms are a rare entity that may complicate mitral valve surgery and the management of infective endocarditis and thoracic trauma [1, 2]. Anginal symptoms caused by direct compression to left coronary artery may be the initial manifestation in such patients. They may also be seen as a pulsatile cavity enlarging during systole in echocardiography or can be incidentally detected during cardiac computerized tomography (CT) angiography.

MAIF pseudoaneurysms may result in disastrous consequences including fistulisation, valve dysfunction, pericardial rupture and mass effect to the adjacent organs [3, 4]. To the best of our knowledge, detection of multiple pseudoaneurysms by using multislice CT (MSCT) has not yet been documented. Here we present the first reported case of multiple pseudoaneurysms detected by 64 slices CT.

Case Presentation and Technique

Due to severe aortic insufficiency, a 40-year old male underwent aortic valve replacement therapy and postoperative follow-up was performed in our clinic. One year after the procedure, he complained of shortness of breath with increased exertion for two months when he visited our clinic for routine MSCT angiography. Total calcium score was 0, no coronary artery pathology was detected. Posterior descending artery and posterolateral artery originated from right coronary artery and normal interventricular septum thickness was observed during MSCT angiography. Metallic aortic valve implant was seen at aortic valve level. At this level as well as inferior and superior adjacent levels, numerous pseudodiverticuli were seen, with a maximum diameter of 10 mm (figures). Multi-planar reconstruction (MPR) method was performed with MSCT to demonstrate pseudodiverticuli (figures) and they were evaluated dynamically. Dynamic evaluation failed to show significant change in size of those diverticuli, but this is thought to be caused by the milimetric dimensions.

Discussion and Conclusion

MAIF pseudoaneurysm is a rare but life threatening condition that is believed to be caused by secondary injury at the fibrous tissue extending between mitral and aortic valves [5]. Therefore, although mostly solitary, multiple lesions may occur depending upon the site and severity of the injury.

Abstract

Mitral-aortic intervalvular fibrosa pseudoaneurysms are a rare entity that may complicate mitral valve surgery and the management of infective endocarditis and thoracic trauma. They may result in fistulisation, valve dysfunction, pericardial rupture and mass effect to the adjacent organs. Here we present a patient of aortic insufficiency with aortic valve replacement and multiple pseudoaneurysms, detected by 64 slices CT. (El Med J 2:1; 2014)

Keywords: Multislice Computerized Tomography, Pseudoaneurysm, Aortic Valve Replacement

Figure 1 (a) Figure 1 (b) Figure 2 (a) Figure 2 (b) Figure 3 Figure 4 (a) Figure 4 (b)

These pseudoaneurysms are mostly detected as cavities having pseudolumens and expanding during systole often spotted during
transesophageal and transthoracic echocardiography. Several authors have reported that echocardiography has 90% sensitivity in detecting these lesions, but localization, size and quantity is essential in diagnosis and small pseudoaneurysms may be ignored when echocardiography is performed. MSCT with simultaneous electrocardiography is a practical method in diagnosis and detection of site and size of the lesions. It has several advantages including high spatial resolution, ability to observe pulsatility with showing dynamic cardiac cycle and post-processing 3-D evaluation. It is also suggested that MCST may be helpful in follow-up of patient with valve replacement.

**Competing interests:** The authors declare that no competing interests exist.

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**References**
