

## Cardiology Images

## PRE AVR ASSESSMENT OF AORTIC VALVE ON MDCT (AN ESSENTIAL INVESTIGATION?)

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A thirty nine years old man presented with the history of gradually progressive shortness of breath functional class II-III for the last 09 months to one year. His pulse was 80 /minute regu-

lar and low volume, blood pressure was 130/70 mmHg. His cardiovascular examination showed normal intensity of first and second heart sounds.

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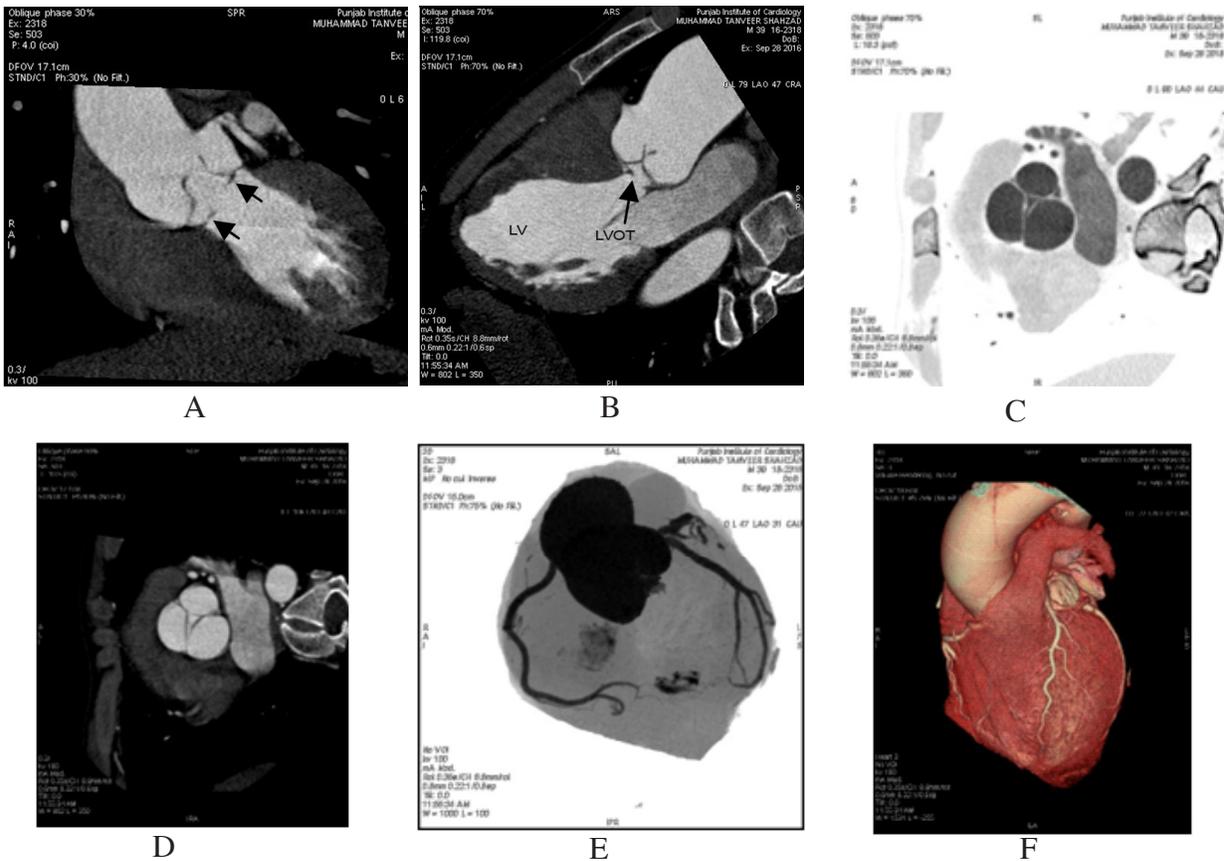


Figure 1 : Contrast enhanced MDCT showing images from A to F

There was an ejection systolic murmur best heard at base and radiating to carotids, there was an early diastolic murmur best heard with breath held in expiration. He was provisionally diagnosed as case of tight aortic stenosis and aortic regurgitation. His Trans Thoracic Echocardiography (TTE) reported bicuspid aortic valve with peak gradient

across aortic valve of 80 mmHg and mean aortic valve gradient of 40 mmHg. The colour doppler and aortic pressure half time showed moderately severe aortic regurgitation (ARPHHT of 395m.sec). He was advised 64 slice MultiDetector Computerized Tomography (MDCT) for coronary artery assessment followed by Aortic Valve replacement.

His MDCT (Fig 1) was done for evaluation of coronary arteries before AVR. The images A and B are the contrast enhanced MDCT images in coronal and oblique planes showing the systolic and diastolic images of Left ventricle (LV), Left ven-

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tricular out flow tract (LVOT), .There is a sub aortic membrane in LVOT just beneath the aortic valve as indicated by arrow.The aortic valve is shown in systolic and diastolic phases. The valve is a tri leaflet valve with central non coaptation during diastole signifying incompetent valve causing Aortic regurgitation (image C,D). The coronary arteries assessed on MDCT were normal with right dominant circulation. (Image E,F).

This patient had sub aortic membrane which was

the cause of increased gradient across LVOT.

The sub aortic membrane is a well described entity and has significant hemodynamic consequences<sup>1</sup>.

The sub aortic obstruction of LVOT ranges between discrete sub aortic membrane to long tunnel like narrowing due to fibro muscular tissue.Surgical resection the treatment of choice. Despite adequate surgical resection, recurrence of sub aortic stenosis due to Sub aortic membrane is frequent<sup>2</sup>.

## REFERENCES

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2.Valeske K, Huber C, Mueller M, Böning A, Hijjeh N, Schranz D, Akintuerk H. The dilemma of subaortic stenosis--a single center experience of 15 years with a review of the literature. *Thorac Cardiovasc Surg.* 2011 Aug;59(5):293-7.