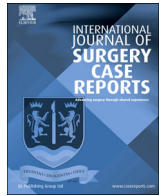




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Unusual non progressive idiopathic giant ascending aortic aneurysm—A rarity

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ABSTRACT

INTRODUCTION: Ascending aortic aneurysm is the second most common aortic aneurysm to abdominal aortic aneurysm. Most ascending aortic aneurysm is diagnosed in sixth or seventh decade of life. Majority of patients of ascending aortic aneurysm do not have any clinical manifestations.

CASE PRESENTATION: 45 year old female patient presented with Dyspnoea on exertion (NYHA class II–III), palpitation and vague chest pain since 2 years. Patient had worsening of symptoms NYHA IV dyspnoea since last 1 month and the patient managed with medications since the patient was not willing for surgery. Patient is on regular follow up on medications since last 2 years.

DISCUSSION: Aneurysms are usually dilation of an arterial segment. It involves extensive area of the aorta and is a challenging surgical procedure especially when it involves aortic root. Computed Tomography (CT), and especially multi-detector CT (MDCT), is the most popular radiological modality for evaluating aortic aneurysms.

CONCLUSION: Aortic aneurysms are localized dilation of the wall of aorta. They can rupture or dissect involving the pericardium, aortic valve. Open surgical repair remains the standard approach to treating most large aortic aneurysm and results are believed to be more predictable and satisfactory.

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1. Introduction

Aneurysms are usually defined as a localized dilation of an arterial segment with at least 50% greater than the normal diameter of the artery size. The occurrence and expansion of an aneurysm in a given segment of the artery involves local hemodynamic factors. Aneurysmal degeneration occurs more commonly in the aged population. Aging results in changes of collagen and elastin, which lead to weakening of the aortic wall and aneurysmal dilation. Ascending aortic aneurysms can involve proximally from the aortic annulus and can extend distally till the innominate artery. They may compress or erode into the sternum and ribs, superior vena cava or airway. They can rupture or dissect involving the pericardium, aortic valve or coronary arteries. Thereby causing cardiac tamponade, aortic insufficiency and Myocardial infarction.

Indications for surgical treatment of ascending aortic aneurysms are based on size or growth rate and symptoms. Because the risk of rupture is proportional to the diameter of the aneurysm, aneurys-

mal size is the criterion for elective surgical repair. Repairing an extensive aortic aneurysm is a challenging task because it poses complications of bleeding, end organ ischemia, underlying disease and staged repairs.

We report a case of ascending aortic aneurysm. She is on medical management with 2 year follow up.

2. Case presentation

45 year old female patient presented with Dyspnoea on exertion (NYHA class II–III), palpitation and vague chest pain since 2 years. Patient had worsening of symptoms NYHA IV dyspnoea since last 1 month. On examination, early diastolic murmur of grade 2 in Erb's area. Routine investigation was normal. VDRL, HIV, connective tissue profile and complete haemogram were normal. The patient is not a known case of Marfan Syndrome, Bicuspid Aortic Valve, Syphilis, Turner Syndrome, Aorto Arteritis, Aortic Dissection, Trauma and HIV. Chest XRAY revealed Cardiomegaly and Ascending aorta aneurysm (Fig. 1). 2D Echocardiography apical four chamber view shows dilated Left Ventricle and ascending aortic aneurysm. Parasternal long axis shows gross ascending aortic aneurysm (Fig. 2A and B). 2D Echocardiography revealed Aneurysm of ascending aorta with Moderate AR, Reduced LV Ejection frac-

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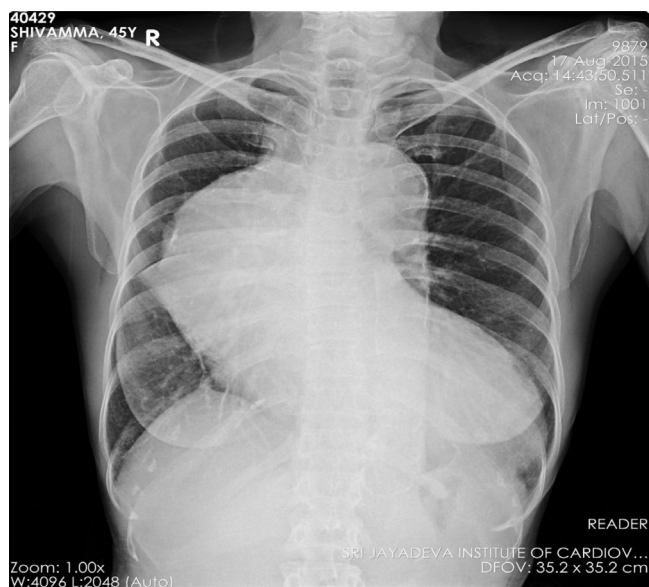


Fig. 1. Chest X-Ray shows ascending aortic aneurysm and cardiomegaly.

tion. CT Aortogram revealed marked Fusiform dilatation involving sino tubular junction, ascending aorta, proximal aortic arch. Proximal part of aneurysm measures 76×80 mm, distal part measures 84×98 mm (Fig. 3A and B). Cardiac MRI revealed a dilated Left Ventricle and ascending aortic aneurysm (Fig. 4). Patient was advised surgical management but patient and their relatives did not give consent for surgery. Patient was managed conservatively with anti failure medications. Patient improved symptomatically, and is on regular follow up since 2 years with NYHA II dyspnoea.

3. Discussion

Aortic aneurysm involves extensive area of the aorta and is a challenging surgical procedure especially when it involves aortic root. All aneurysmal tissue should be excluded from the circulation [1]. It tends to become more dilated and may cause rupture,

dissection or compression if not timely intervened [2]. Chest x-rays may reveal a widened mediastinum, a shadow to the right of the cardiac silhouette, and convexity of the right superior mediastinum. Transthoracic echocardiography (TTE) demonstrates the aortic valve and proximal aortic root. It may help to detect aortic insufficiency and aneurysms of the sinus of Valsalva but it is less sensitive and specific than Transesophageal Echocardiography (TEE).

Computed Tomography(CT), and especially Multidetector CT(MDCT) is the most popular radiological modality for evaluating an aortic aneurysm as CT provides the best quality method for a detailed analysis of the aneurysmal morphology [3].

Symptomatic patients should undergo aneurysm resection, regardless of aneurysm size. Elefteriades published the natural history of Thoracic Aortic Aneurysms(TAAs) and recommended elective repair of ascending aneurysms at 5.5 cm and descending aneurysms at 6.5 cm for patients without any familial disorders such as Marfan syndrome [4]. Rapid expansion is also a surgical indication [5].

When the aortic valve leaflets are structurally normal and the aortic regurgitation is secondary to dilatation of the root, a valve-sparing root replacement may be performed which involves excising the sinuses of Valsalva while sparing the aortic leaflets, sewing a Dacron graft to the base of the aortic annulus, and reimplanting the aortic valve leaflets within the graft to restore their normal anatomic configuration [6]. Patients with an abnormal aortic valve and aortic root require Aortic root replacement (ARR). In nonelderly patients who can undergo anticoagulation with reasonable safety, the aortic root may be replaced with a composite valve-graft consisting of a mechanical valve inserted into a Dacron graft coronary artery re-implantation (eg, classic or modified Bentall procedure or Cabrol procedure [7,8].

4. Conclusion

Aortic aneurysms are less common among many other cardiovascular diseases, they can be life threatening and even large aneurysms may not have clinical manifestations. However, all the more important for clinician is to detect the disease early. Modern

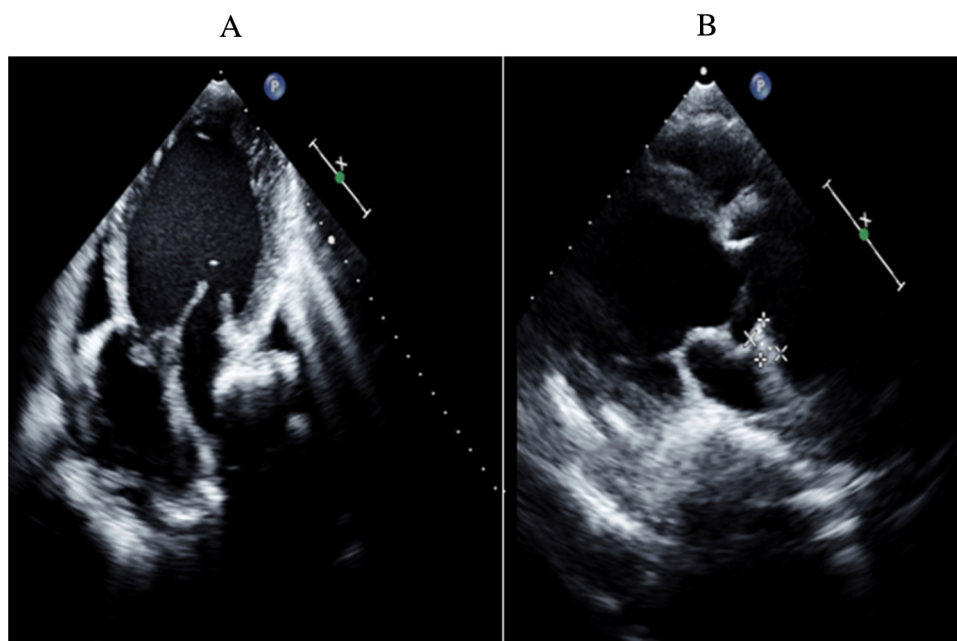


Fig. 2. A: 2D Echocardiography apical four chamber view shows dilated LV and ascending aortic aneurysm. B: Parasternal long axis shows gross ascending aortic aneurysm.

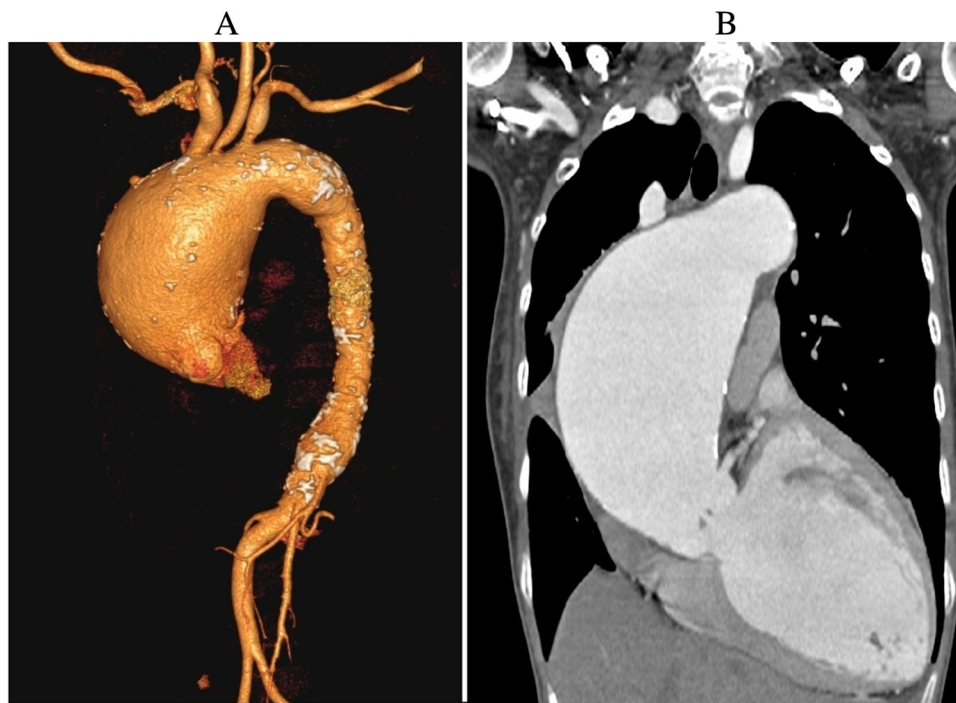


Fig. 3. CT aortogram showing marked fusiform dilation involving sino tubular junction, ascending aorta, proximal aortic arch measuring about 76×80 mm (AP $\times$ RL) distal aspect measures about 84×98 mm (AP $\times$ RL).

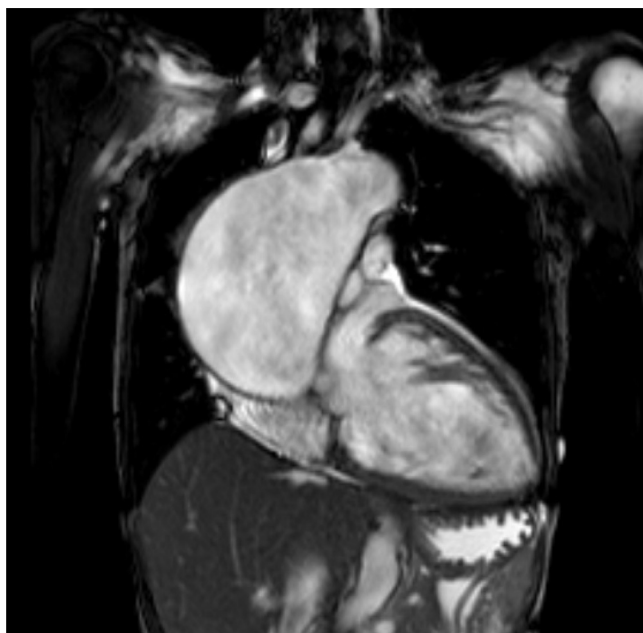


Fig. 4. Cardiac MRI showing marked dilatation of the ascending aorta and dilated left ventricle.

imaging modalities like CT and MRI have made the detection and sizing of aneurysms easy. Open surgical repair remains the standard approach to treating most large aortic aneurysms and results are believed to be more predictable and satisfactory.

Conflicts of interest

None.

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Ethical approval

Ethical committee approval: obtained.

Consent

Patient consent is obtained.

Author contribution

Dr. H.S. Natraj Setty—writing the manuscript, Dr. T.R. Raghu—study design, Dr. Jayashree Kharge—data analysis, Dr. Geetha B.K—data collection, Dr. Shivanand S. Patil—data collection, Dr. Varadaraj—surgical interpretation, Dr. KR. Nishanth—reference collection, C.N. Manjunath—final approval of the manuscript.

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