

Second and larger than normal aortic annulus triple aortic annulus in a patient with ascending aortic aneurysm and bicuspid aorta 🎧

Ascending aortic aneurysm is the most common type of thoracic aortic aneurysm, and it may be accompanied with aortic regurgitation, coarctation, bicuspid aortic valve, or coronary anomaly. Because of structural variations, anatomic locations of aortic structures like coronary arteries may dislocate or some additional morphological changes may be seen. In this report, we present the case of a 69-year-old male patient admitted to a cardiology clinic with the diagnosis of ascending aortic aneurysm. Patient presented to a cardiology outpatient clinic where he was evaluated with transthoracic echocardiography, and the ascending aorta was measured to be 65 mm in parasternal long-axis view. He had moderate aortic regurgitation, and ejection fraction (EF) was found to be 60%. He was referred to a tertiary center for coronary angiography and aortic surgery. Coronary angiography was performed by puncturing the right femoral artery. Due to aneurysmatic dilatation and anatomic challenges, selective coronary imaging could not have done very successfully. In every effort to reach the left and right coronary ostia, different types of diagnostic and guiding catheters (judkins, extra backup, amplatz left etc.) were restrained by an anatomic structure that is located in the distal portion of the aortic root. Aortography was

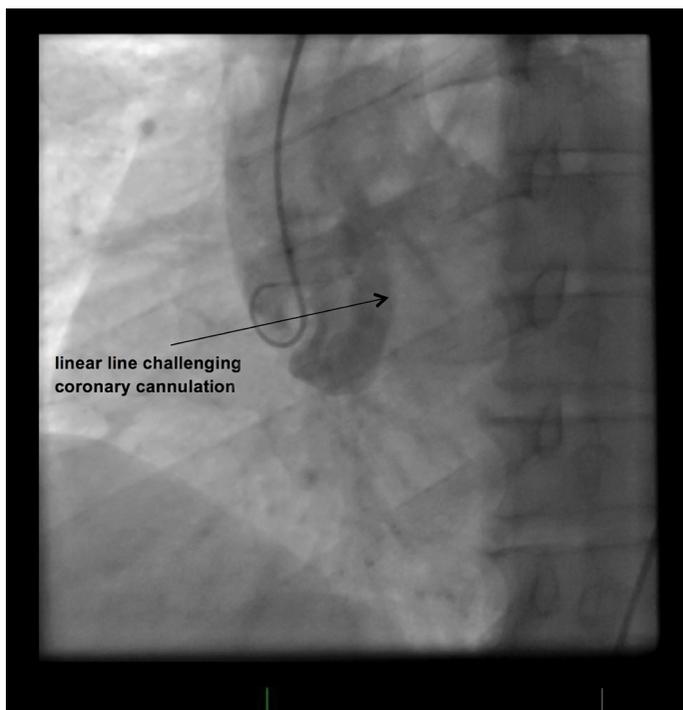


Figure 1. Aortography shows linear line challenging coronary cannulation which restrains catheter to reach coronary ostia

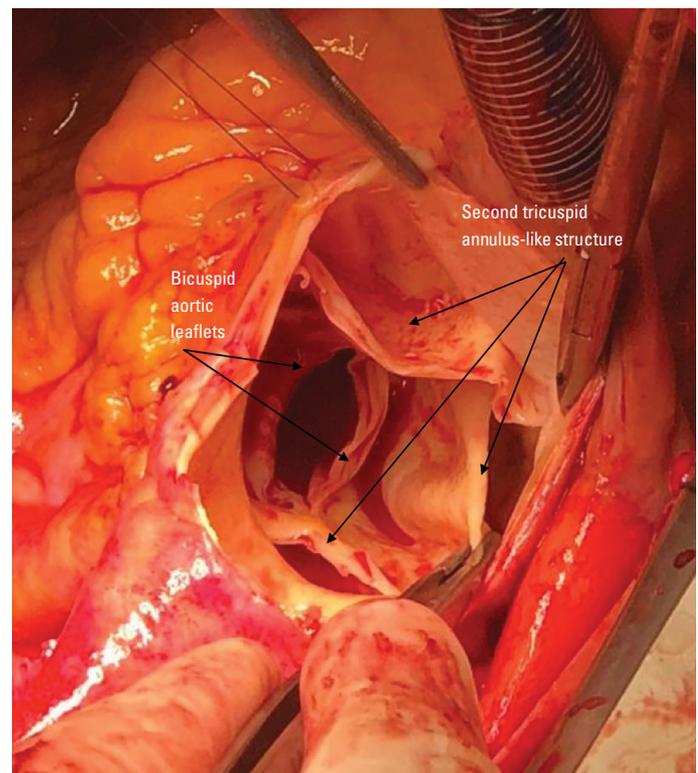


Figure 2. Open heart surgery obviously showed bicuspid aortic valve and separate tricuspid annulus-like structure in ascending aorta

performed that showed a linear line restraining the filling up of the coronary ostia (Fig. 1, Video 1). Challenging imaging of coronaries unselectively could have been performed, and the patient was transferred to a cardiovascular surgery clinic for ascending aortic surgery.

After completing the preoperative procedures, he was transferred to the operating room. Under general anesthesia, the mediastinum was opened by median sternotomy and the aorta was dissected properly. The aortic valve was located in its natural location with a bicuspid appearance, and the sinus valsalva was dilated and anatomically original. Any kind of intimal laceration or aortic rupture was not found, indicating successful aortic dissection. In the distal part of aortic root (3 cm), second and bigger triple annulus was observed (Fig. 2). The bicuspid aortic valve and ascending aorta were excised. A composite graft that was prepared in vitro by primary suture of 31 no metallic valve and 30 mm dacron graft to each other was implanted instead. After successful operation, sternum was closed anatomically. The patient was successfully discharged, and he was followed up uneventfully until the first month control. He was followed up for 1 month without any complication related to disease or surgery. During clinical and echocardiographic evaluation after 1 month, no abnormal findings was observed. His EF was 60%, and no aortic valve- or ascending aorta-related complication was observed.

This is the first case, to the best of our knowledge, with a second annulus-like structure in the aortic root preventing coronary cannulation significantly.

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Video 1. Aortography shows late filling up of aortic root because of linear restraining structures.

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