

A case of Unicuspid Aortic Valve with Hidden Subaortic Ridge

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Abstract

57-years old man presented with exertional dyspnea. An early systolic murmur was heard over the aortic areas 2D and 3D Echocardiography revealed unicuspid , unicommissural aortic valve (UAV) with a characteristic “teardrop” lateral orifice (Figure A) and moderate valve stenosis (3D planimetered aortic valve area (AVA) is 1.1cm²) (Figure B) Continuous wave Doppler across aortic valve (AV) showed high peak and mean systolic gradients of 85 and 60mmHg respectively.(Figure C). 2D /3D Transesophageal Echocardiography (TOE) revealed a subaortic ridge attached to the posterior annulus (Arrow) (Figure D) Further En-face viewing of the aortic valve from the left ventricular outflow tract (LVOT) perspective showed a shelf-like ridge extending from the commissure to the cusp (Arrow) (Figure E) Zoomed mode of the aortic- LVOT junction confirmed the presence of the subaortic ridge seen attached to the posterior aortic annulus near the commissural opening (Figure F) The patient was referred for surgical consultation .. Unicuspid aortic valve (UAV) is a rare congenital anomaly that has.2 subtypes ; unicommissural and acommisural subtypes. Both can present with variable degrees of the aortic stenosis (AS) and/or aortic valve regurgitation (AR).UAV has more early, accelerated and severe valvular degeneration in addition to smaller orifice in comparison with bicuspid and tricuspid aortic valve. Echocardiography is the gold standard for diagnosis and evaluation of the AV morphology and function and the associated disorders such as ventricular septal defect , aortopathy and subaortic obstruction.. Surgical aortic valve replacement (AVR) and repair of the associated anomalies are the most common treatment modality .

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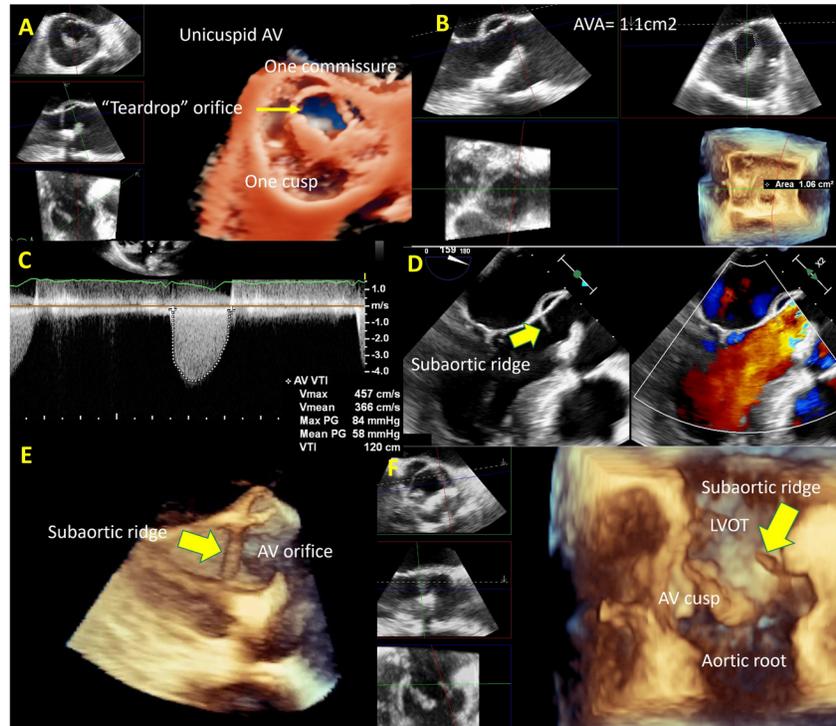
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Case report:

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Figure(A):En-face view of the aortic valve from the aortic perspective shows a unicuspid , unicommissural aortic valve with characteristic "teardrop" orifice.. Figure(B):Multiplanar reformatting of the AV was used to planimeter of the orifice area (1.1cm²). Figure(C): Continuous wave Doppler AV shows high peak and mean systolic gradients . Figure(D): 2D TOE shows a subaortic ridge (yellow arrow). Figure (E): Zoomed mode of the AV from LVOT perspective confirms the presence of the subaortic ridge extending from the commissure to the cusp edge .(yellow arrow).Figure (F):Zoom mode of the aortic-subaortic region shows an obstructive subaortic ridge