

CASE REPORT

AN UNUSUAL ECHO FINDING IN A PATIENT WITH TOF: UNUSUAL RAC SIGN

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We report a 13 years old girl with cyanotic heart disease who presented to the OPD of a tertiary care facility for the first time. Her echocardiography showed features of tetralogy of fallot and dilated coronary sinus. An unusual structure was visualized below the aortic valve in PLAX and 4 chamber view. It also had systolic colour flow in it (Figures 1-3). Origin of the structure could not be traced so a cardiac CT was planned for delineation of the anatomy. CT is shown below. Figure 4A is the MPR image of heart which shows markedly dilated coronary arteries and LAD and LCX arteries coming from behind aorta and pulmonary artery. Figure 4B is the axial section at the level of coronary ostia. Note the dilated tortuous left coronary artery and its brief retro aortic course. Figure 4C is the CPR image of LAD artery in LAO CRANIAL view demonstrating retro-aortic course of LAD.

DISCUSSION:

Tetralogy of fallot is associated with multiple other abnormalities, one of which is abnormal

coronary origins¹. Our patient had normal coronary origins although the coronary arteries were markedly dilated and LAD had a brief retro-aortic course before emerging onto the anterior interventricular groove.

RAC (retro-aortic coronary) sign is well known sign on echocardiography for retro-aortic course of one of the coronary arteries.² A typical RAC sign is shown in figure 5. Since our patient did not have normal sized coronaries so typical RAC sign was not seen on echo. The typical location of the structure of interest and systolic colour flow demonstration in it raised the suspicion of it being a coronary artery. Dilated coronary sinus was due to Left persistent SVC which is also one of the associations of TOF.

CONCLUSION:

RAC sign is typical for retro-aortic coronary artery course. Slight variation in the appearance can occur due to variability in anatomic features of the coronary of interest. But still it is fairly reliable to predict the course of a coronary artery.

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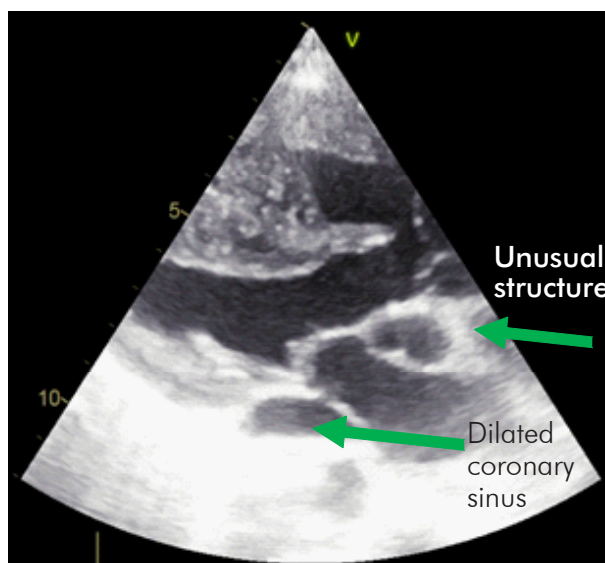


Figure 1A. PLAX view without doppler

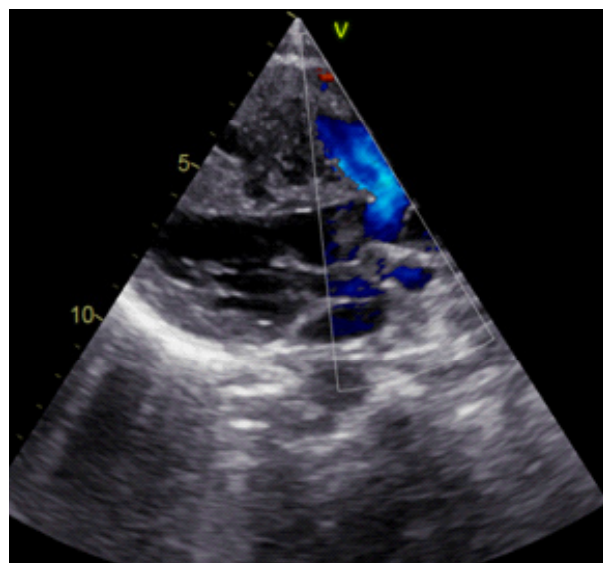


Figure 1B. PLAX with colour flow

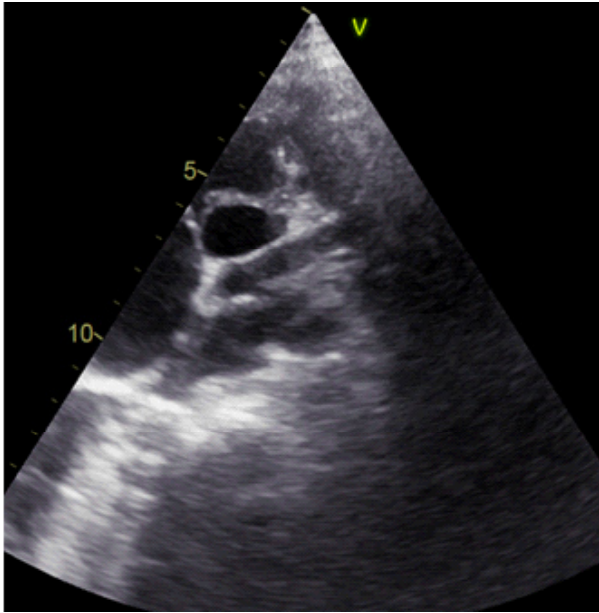


Figure 2. Modified SAX view demonstrating tubular structure below ascending aorta

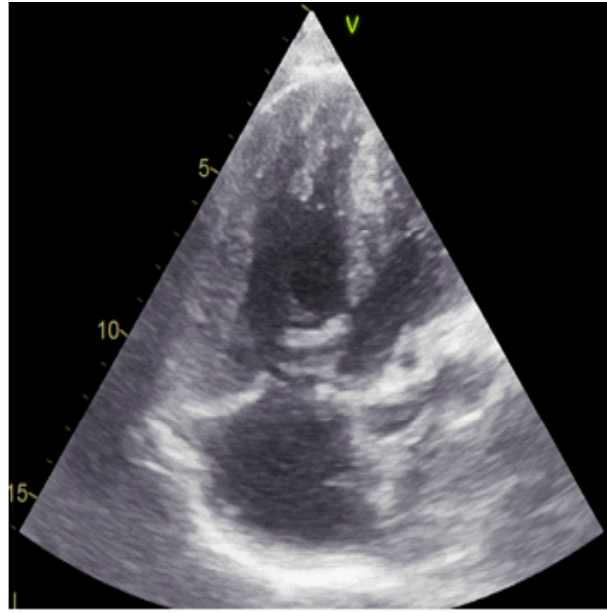
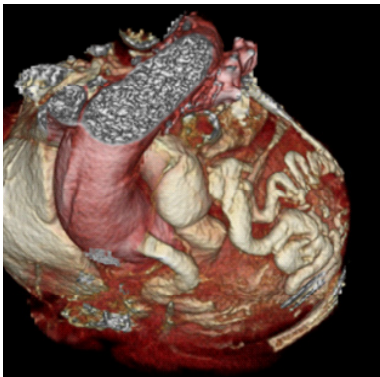


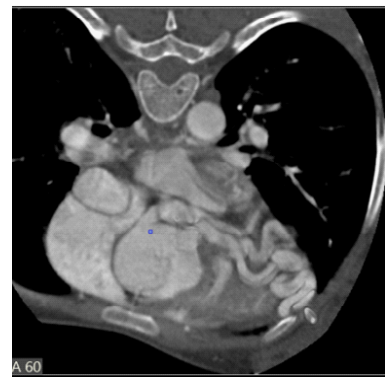
Figure 3. Modified 4chamber view demonstrating tubular structure.



4A



4B



4C

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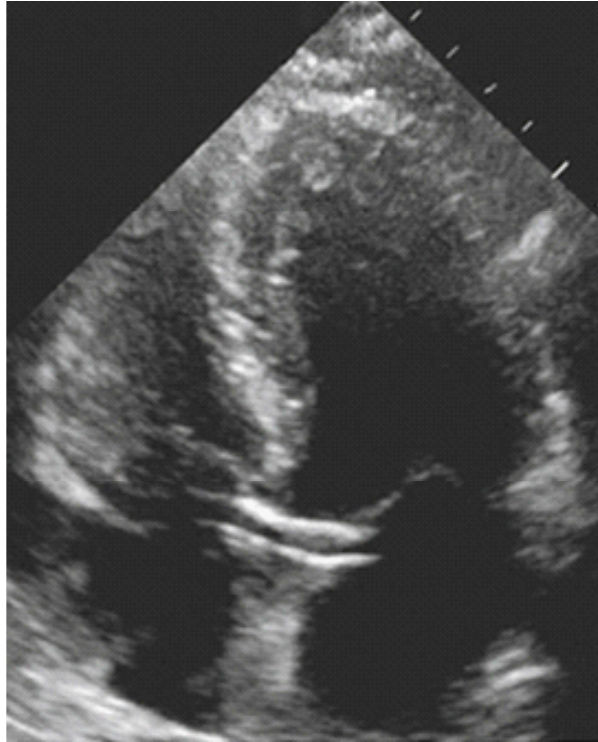


Figure 5. RAC sign

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2. Witt, C., Elvert, L., Konik, E., Ammash, N., Foley, D. and Foley, T., 2018. The RAC Sign. JACC: Cardiovascular Imaging, 11(4), pp.648-649.