

ECHOCARDIOGRAPHIC MISINTERPRETATIONS

Muhammad Khaleel Iqbal^{a*}

CASE-1:

A 60 yrs old man presented with shortness of breath and ejection systolic murmur of grade 3-4. On 2D echocardiography patient seemed to have severe aortic stenosis because of severe calcification of Aortic valve but CW at aortic valve in apical 5-chamber view showed a peak and mean PGs of 51 and 33mmHg. (See figure-1a).

When right parasternal view was made and CW doppler spectrum was taken at same aortic valve, it showed peak and mean gradients to be 163 and 106 mmHg (figure-1b). This significant difference may be when calcification gets severe, the valve opening is not smooth so blood has to pass through zig zag opening and doppler signal is not parallel to the flow of blood in 5-chamber

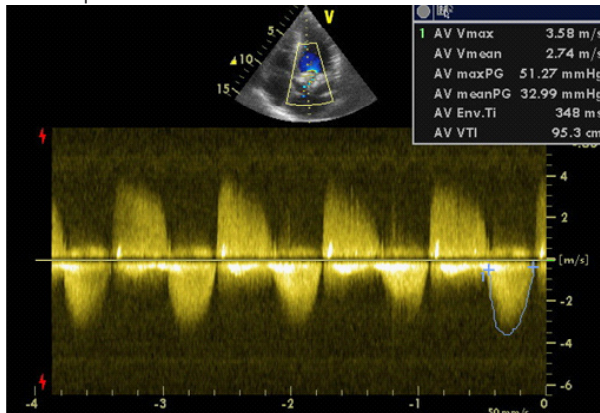


Figure 1a

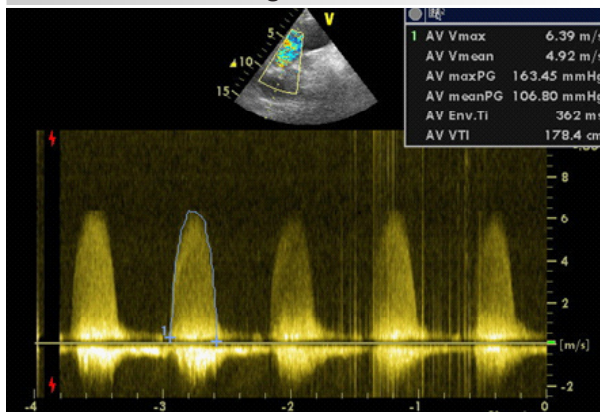


Figure 1b

^aPunjab Institute of Cardiology, Lahore Pakistan.

* Corresponding author:

Email: khleldr@hotmail.com

(J Cardiovasc Dis 2017;13(4):116-117)

view which is necessary to get maximum gradients. Literature also favours we should take aortic gradients in all views including subcostal, right parasternal and apical 5 chamber views. As much as in 20% patients of aortic stenosis, we don't get maximum aortic gradients in usual apical views. Kindly note that right parasternal view is made with patient lying on his right side, probe position at left upper sternal border and cursor at almost 1 O'clock position.

CASE-2:

A 70 yrs old man presented with worsening shortness of breath and palpitations and BP 80/60 on cardiac supports (dopamine and dobutamine). He was already a diagnosed case of ischemic cardiomyopathy with poor ejection fraction (EF=20-30%) and echocardiography performed by multiple hospitals in periphery. His repeat echo with us showed morphological LV on the right side and dilated poorly functioning RV on left side in apical 4-chamber view. (Figure-2a)

Note that morphological tricuspid valve (valve attached to septum more apically) is on left side and as a rule ventricles are identified from valves as respective valves insert in respective ventricles. So RV where tricuspid valve (TV) is attached is located on left side. Similarly more basally attached mitral valve and thus LV is located on right side. Another clue to identify TV is that it has equal length leaflets as compared to MV which has anterior leaflet longer than posterior in A4 chamber view. Also

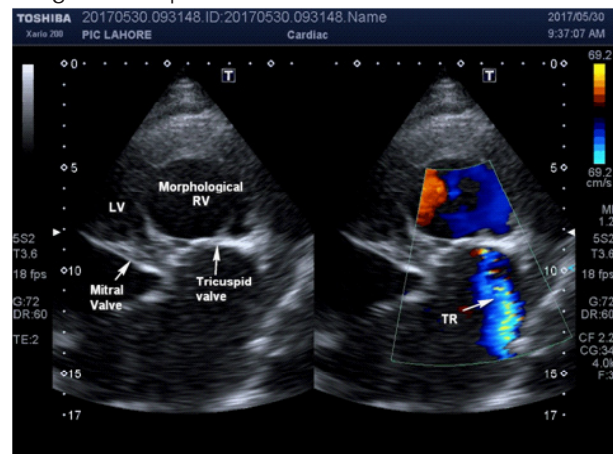


Figure 2a

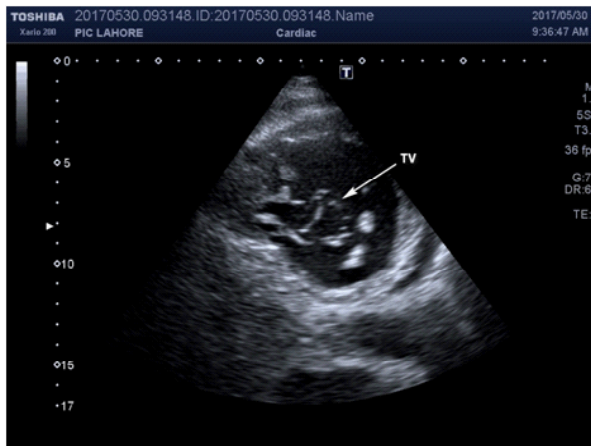


Figure 2b

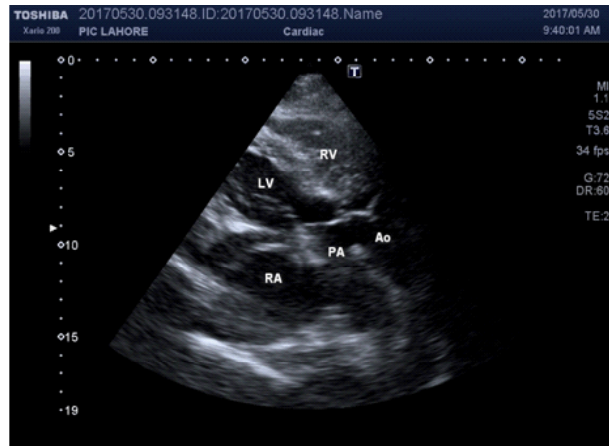


Figure 2c

the TV has chordal insertions of septal leaflet with interventricular septum which is absent in MV.

In short axis view cutting at valve level, there is TV in place of MV. So instead of fish mouth bicuspid mitral valve, we see three leaflets of tricuspid valve. (Figure 2b)

As patient was adult and short of breath, sub-costal view did not give good information. So modifying apical 5 chamber view by further tilting up the probe (by lying down the tail of probe)

opened up pulmonary artery (PA) parallel to aorta (Ao) (figure-2c). So morphological LV is attached to PA and RV to aorta. So the diagnosis was cc-TGA or l-TGA. Thus venous blood goes from RA to LV to PA while blood coming from lungs goes from LA to RV to Aorta. It means poorly functioning highly trabeculated ventricle on left side was RV. If it was ischemic dilated LV, it would have gone thinned out scarred after such long time. Moreover, regurgitation on left side is TR due to weak TV dealing with high pressure systemic blood flow.