

Subxiphoid Bicaval View: An Alternative Window in Small Children

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Most of the time transesophageal echo (TEE) is needed to profile the rims of interatrial septum (IAS) to decide device vs surgical closure. It is difficult in children to perform TEE in small children because most of them need sedation in the form of general anaesthesia which is not always possible. Therefore, an alternative option is subxiphoid window which needs oral sedation with Triclofos Sodium and counselling. This editorial briefs about how beautifully the interatrial septum can be profiled using subxiphoid view in children where TEE is not always possible in the echo lab.

The usefulness and limitation of Transthoracic echocardiography (TTE) to profile all six rims of atrial septal defect (ASD) in children as follows:

1. Atrioventricular (AV) rim and superior rim: Apical 4 chamber view (Figure 1).
2. Retro-aortic and posterior rim: Parasternal short axis view (cup and sausage) (Figure 2).
3. Superior vena caval (SVC) rim with and/or right upper pulmonary vein abnormal drainage into right atrium: Apical 4 chamber view with anterior angulation and rightward swipe.
4. Inferior vena cava (IVC) rim: It is almost impossible to profile using TTE. The presence of inferior vena caval rim with adequate rim size (≥ 8 mm) and without fluffiness is essential for most of the paediatric cardiologist who does device closure of the ASD.

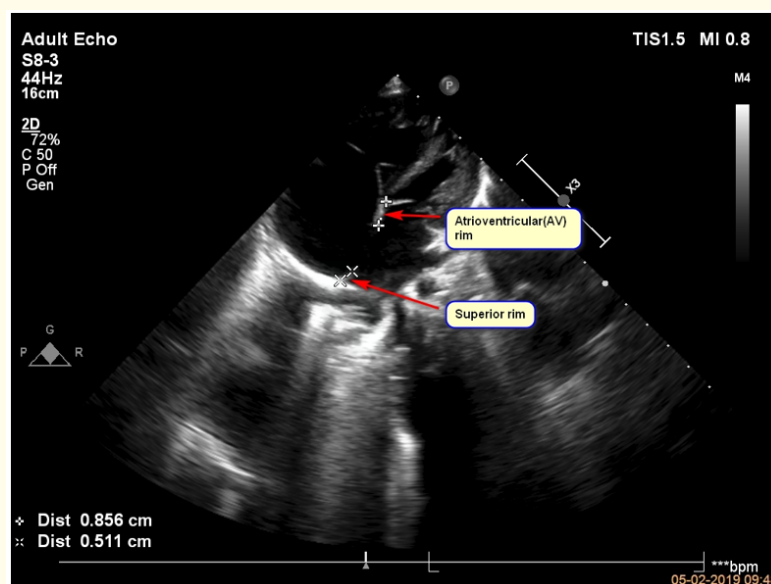


Figure 1: 2D ECHO in A4C chamber view shows clearly the AV and superior rim.

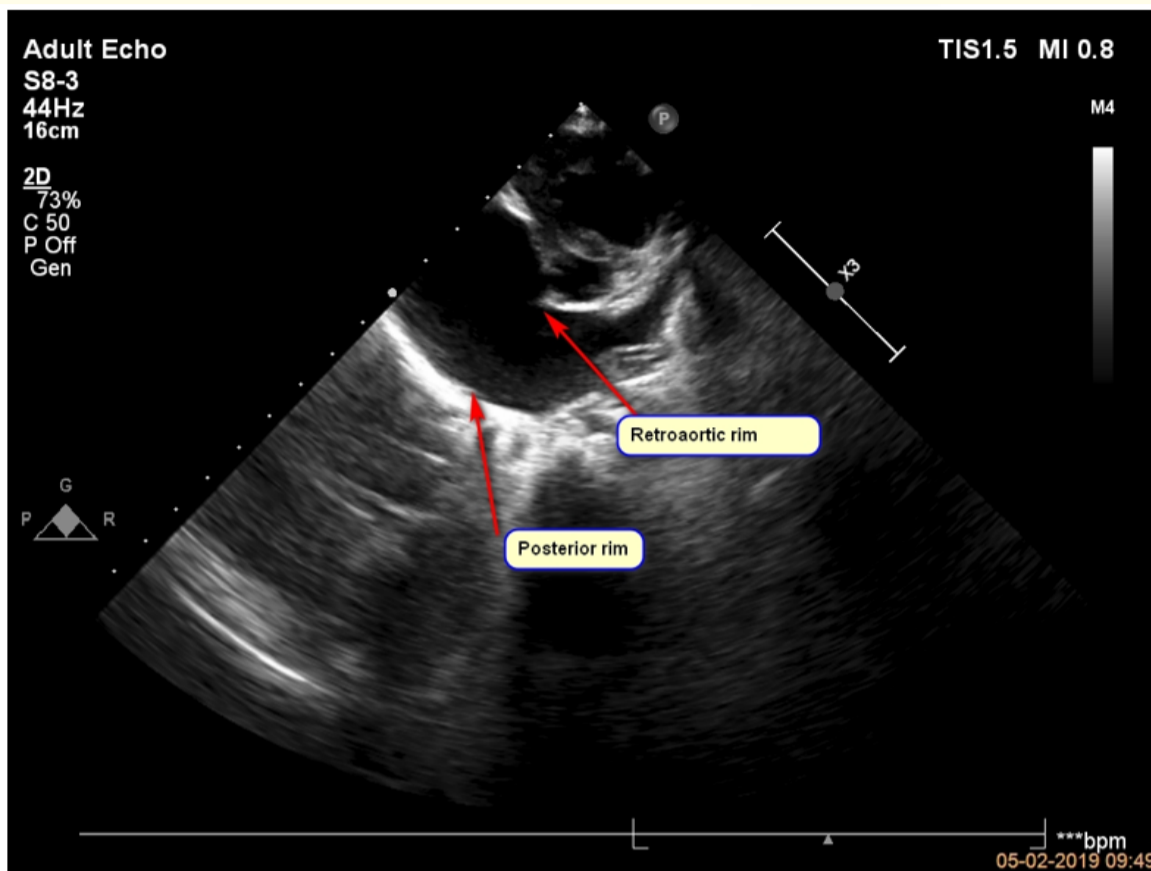


Figure 2: 2D ECHO in short axis parasternal view shows the retroaortic and posterior rim.

Therefore, an alternative window to TTE is must to profile the IVC rim because it the essential rim to anchor the device. A 3-yr-old female child was referred to me for possible r device closure of ASD. In addition to transthoracic echo, the subxiphoid echo window was used to profile the SVC and IVC rims (Figure 1) with reasonable quality which would help in the decision marking.

Interatrial septum [IAS] is a three-dimensional structure. Therefore, all the six rims of atrial septal defect [ASD] can't be accessed in TTE [1]. A complex ASD may need multiple imaging support like TTE, TEE, ICE, 3D-TEE and cardiac MRI for proper delineation before device closure of ASD [2]. The subxiphoid sagittal TTE plain can very well demonstrate the SVC and IVC rims is acquired by turning the transducer 90 degree counter clockwise from subxiphoid 4 chamber view (Figure 3 and Video 1). A rightward swipe (look) through echo transducer allows clear delineation bicaval rims which is almost equivalent or better than TEE using general anaesthesia (Figure 4).

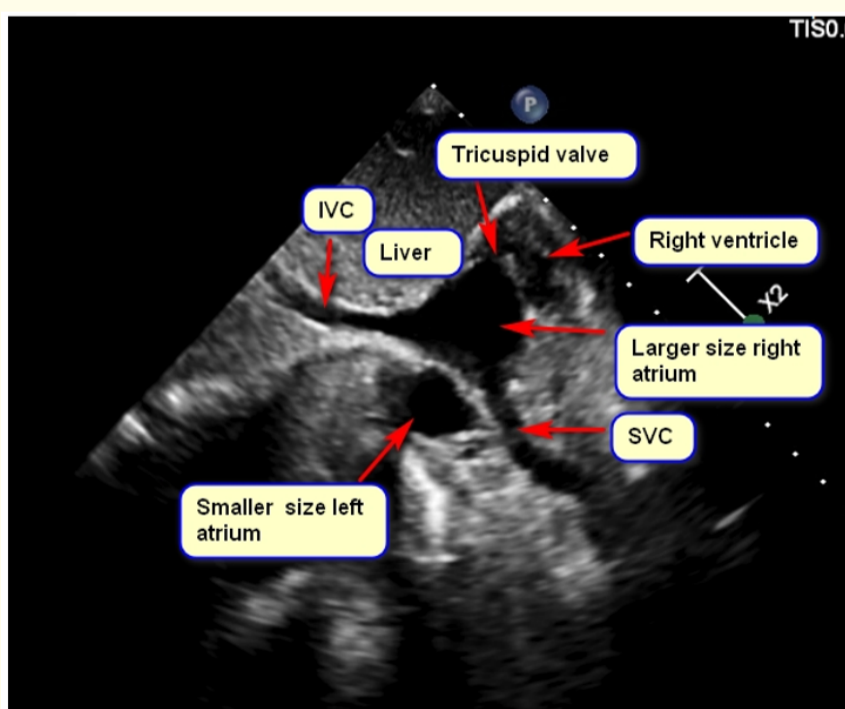


Figure 3: 2D ECHO in Subxiphoid shows IVC and SVC rim.

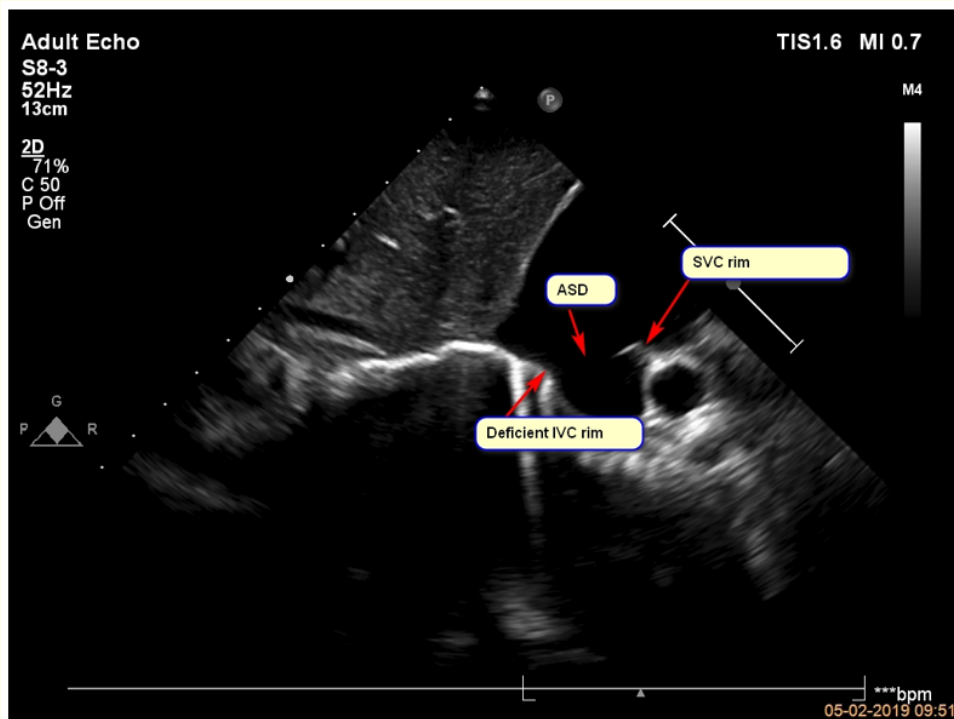
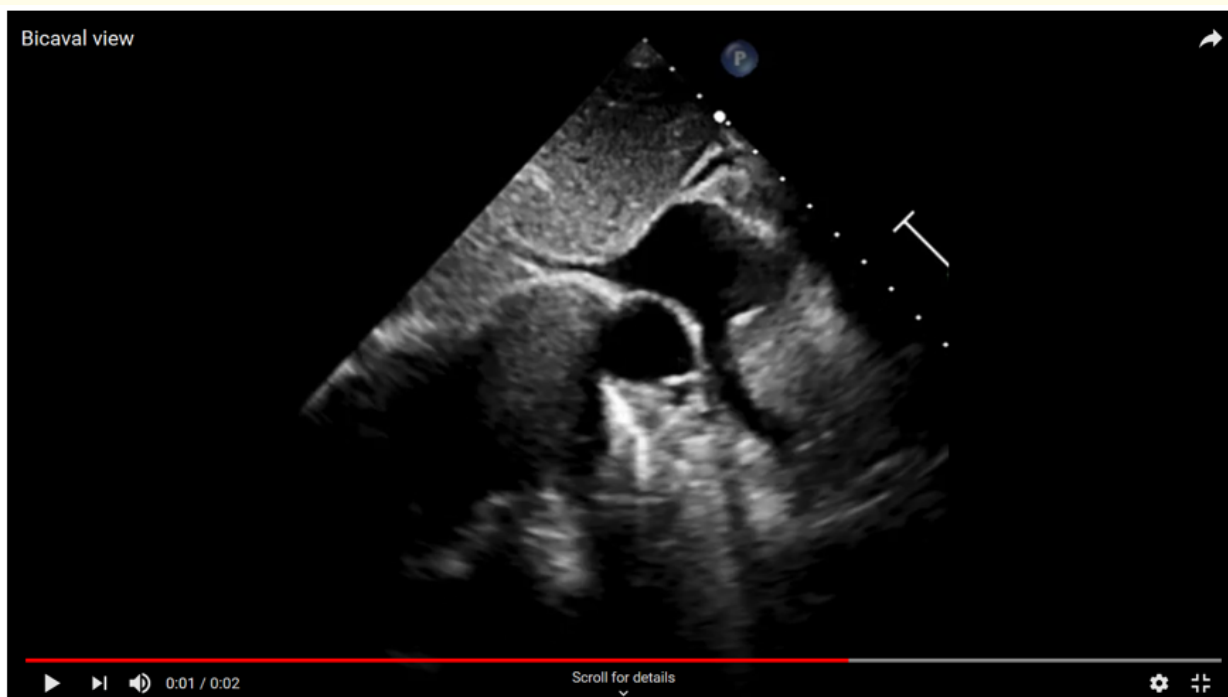


Figure 4: 2D ECHO using subxiphoid approach shows IVC and SVC rim.



Video 1: This is an online video clip shared from author's own intuitional lab. 2D echo view through subxiphoid approach. The marker was pointing to sagittal plane. Then, the probe was titled to left to profile the bicaval rims of ASD.

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