

Pseudo Atrial Septal Defect by Colour Flow Imaging in Apical 4 Chamber View of Transthoracic Echocardiogram

A 32 year old female, presented with palpitations. Physical examination, resting electrocardiogram and skiagram of chest were



Fig. 1 : Transthoracic 2D echocardiogram (apical 4 chamber view) showing echo drop out in middle of interatrial septum.



Fig. 3 : Subcostal 2D echocardiogram showing intact interatrial septum with no blood flow across septum.

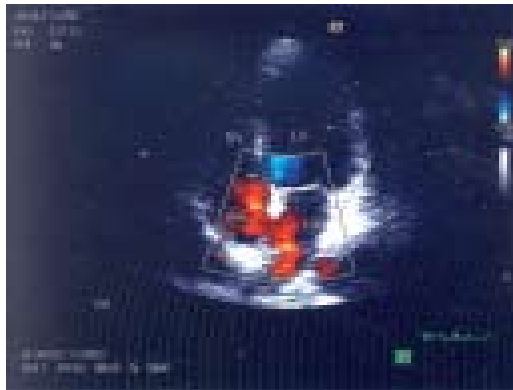


Fig. 2 : Transthoracic 2D echocardiogram (Colour doppler imaging) giving false impression of left to right shunting of blood across the apparent defect.



Fig. 4 : Transesophageal echocardiogram (bicaval view) showing intact atrial septum.

unremarkable. Transthoracic 2D echocardiogram (apical 4 chamber view) demonstrated echo drop out of 4.5 mm size in the middle of inter-atrial septum (IAS) (Fig. 1). However, rest of the echocardiography evaluation did not support possibility of ASD. The right atrium and right ventricle were not dilated, interventricular septum motion was normal and tricuspid flow velocity was less than mitral flow velocity. There was no continuous flow across the presumed defect on pulse wave Doppler. Colour Doppler imaging however, gave the impression of left to right shunting of blood across the defect (Fig. 2). Sub costal view however demonstrated intact IAS with no blood flow across the IAS septum (Fig. 3). Trans oesophageal echocardiograph (100% sensitive and specific in detection of all types of atrial septal defect (ASD) further, confirmed integrity of atrial septum in it's bicaval view (Fig. 4).

Artifactual dropouts in the region of fossa ovalis in apical 4-chamber view had been previously described in literature. The suggested explanation is that IAS is very thin in this area and runs parallel to ultrasound beam. However, false impression of shunting of blood across the defect with colour doppler imaging is not described previously. The possible explanation in our case could be that the inflow from left pulmonary veins and superior-vena cava are aligned together in one line, with false drop out of echoes in the region of fossa ovalis, giving wrong interpretation of left to right shunt across the IAS.

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