

What's in the right atrium?

M.B.CHANDURKAR * & ISHAN KANZARIA**

Abnormal masses (tumours, thrombi, vegetations) must be distinguished from the normal cardiac structures that may mimic a mass. The echocardiographic evaluation of intracardiac masses is dependent on the ability to distinguish between normal and abnormal findings¹. Erroneous diagnosis may lead to inappropriate medical therapy and surgery².

Case report:

A twenty two years young female was referred to our hospital as a case of pregnancy with heart disease. The presenting complaint of patient was dyspnea and palpitations on exertion since last one year.

On examination, the patient was having mild pallor, no signs of congestive cardiac failure. Cardiovascular examination revealed a loud first heart sound, and a low pitched middiastolic rumbling murmur in mitral area, with presystolic accentuation. Pulmonary component of 2nd heart sound was accentuated. ECG was suggestive of LA enlargement, and X-ray chest Suggestive of straightening of left heart border.

A clinical diagnosis of Rheumatic mitral stenosis was made, and confirmed on echocardiography. The mitral valve area was 1.7 cm² by pressure half time & pulmonary artery systolic pressure by TR jet was 40 mm of Hg.

Apart from these findings, the apical 4c view and subcostal 4c view on TTE showed a highly mobile serpentine structure in RA fig(I), moving in whip line motion away from the tricuspid valve.

Based on the clinical profile of patient and TTE appearance, a diagnosis of chiari network was made.

Address for correspondence

*Lecturer **Resident

Department of Medicine,

Rural Medical College of Pravara Institute of Medical Sciences, Loni, Dist Ahmadnagar

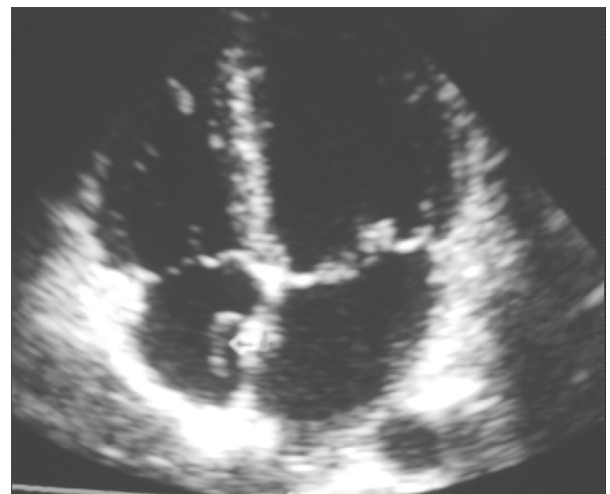
Discussion:

Chiari first described this fetal remnant in right atrium in 1897 in an autopsy series by Dr. Chiari.

In early cardiac development, two venous valves guard the right horn of the sinus venosus³. the smaller right valve is incorporated into septum secundum, and right valve partitions the right atrium.

In normal development, the right valve regresses between gestational weeks 9 & 15, its cephalic portion remaining as crista terminalis, and caudal portion dividing to form the eustachian and thebesian valves. Failure of regression gives rise to chiari network, which attaches to the superior vena cava and crista terminalis⁴.

The chiari network is documented to be present in only 1.5% to 3% of adults⁴. It is of rare clinical importance, but can be the site of thrombosis⁵, and can cause entrapment of right heart catheters. Another embryonic remnant in right atrium is persistent sinus venosus valve. It can be confused with valve disruption, vegetation or other mass lesion (myxoma), particularly when associated with suggestive clinical condition. The characteristic feature should allow differentiation.



Bibliography

- 1) Feigenbaum H, Armstrong WF, Ryan T. Feigenbaums echocardiography: Masses, tumors and source of embolus. 6th ed. Philadelphia, PA :Lippincott Williams &Wilkins:2005.701-703.
- 2) Goldman JH, Foster E. Transesophageal echocardiographic evaluation of intracardiac and pericardial masses. *Cardiol Clin* 2000;18:849-860.
- 3) Yater WM Variations and anomalies of the venous valves of right atrium of the human heart. *Arch Pathol* 1929;418-44.
- 4) Wemer JA ,Cheitlin MD ,Gross BW. Echocardiographic appearance of the chiari network differentiation from right heart pathology. *Circulation* 1981;63:1104-9.
- 5) Goedde T.A,Conetta D, Rumisek JD. Chiari network entrapment of thromboemboli: congenital inferior venacava filter. *Ann Thorac Surg* 1990;49:317-318