Chiari’s Network: An Unusual but not Uncommon Finding

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INTRODUCTION

A 23-year-old male patient with the diagnosis of rheumatic heart disease with severe mitral stenosis and mitral regurgitation was scheduled to undergo mitral valve replacement. After induction of anaesthesia, transoesophageal echocardiography (TEE) confirmed mitral valve disease. In addition, echocardiography revealed thin, filamentous, and freely mobile structure showing whip-like motion in the right atrium (Figs 1 and 2). The diagnosis of Chiari’s network was made based on the fine fibres originating near the inferior vena cava (Eustachian valve).

The Chiari’s network was first described in 1897 in an autopsy series by Dr Chiari.1 This is a reticulated web-like network of fibres originating from the eustachian and thebesian valves at the orifice of the inferior vena cava and the coronary sinus and show attachments to different parts of the right atrium. The network results from incomplete reabsorption of the right valve of the sinus venosus during embryonic development1 and is present in approximately 2% of the population.2

According to definition1 Chiari’s network is considered, if coarse or fine fibres originating from a eustachian or thebesian valve at the orifice of the inferior vena cava or the coronary sinus are seen and they demonstrate attachments to the upper wall of the right atrium or the interatrial septum. Chiari’s network should be carefully differentiated from a large eustachian valve by looking for attachments to other parts of the right atrium as seen in the present patient (Fig. 2).

Chiari’s network is often considered clinically insignificant. However, association has been made with the persistence of patent foramen ovale,2 formation of atrial septal aneurysm,2 thromboembolic events,2 intra-atrial thrombus,3 catheter entrapment,4 infective endocarditis5,6 and atrial tachyarrhythmias.7

It also poses diagnostic difficulties during echocardiography where it could be confused with right atrial thrombi, tumours, right heart vegetation’s, flail tricuspid leaflet, or a ruptured chordae tendineae. Chiari’s network can also cause difficult cannulation of the coronary sinus for retrograde coronary perfusion.8 Because of its proximity to atrial structures, TEE provides a high resolution imaging technique for atrial pathology. In summary, echocardiographic features of a rare case of Chiari’s network are presented.

REFERENCES


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