Cyanosis due to tricuspid regurgitation

Cyanose secondaire à une fuite tricuspide

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We report the case of a 59-year-old woman followed in our institution for an Ebstein anomaly; she had tricuspid valvuloplasty at the age of 56 years, associated with a cavopulmonary anastomosis. The patient presented in our unit with recent exertional dyspnea. Examination revealed no symptom of congestive heart failure at rest. Oxygen saturation was 97% at rest but fell to 85% after a 3-minute walk.

Transthoracic echocardiography showed an interatrial bidirectional flow. Contrast echocardiography was markedly positive at rest, confirming the right-to-left shunt. There was no pulmonary hypertension. The cavopulmonary shunt was difficult to visualize. Right ventricular function was good. Moderate tricuspid regurgitation was also present (grade II).

Transoesophageal echocardiography (TEE) and percutaneous shunt closure were planned for the patient. TEE demonstrated a large tricuspid regurgitation. The jet was directly orientated towards the atrial septal defect, explaining the basal right-to-left shunt (Fig. 1). The shunt was closed with an Amplatzer septal occluder without complication (Fig. 2) and oxygen saturation immediately rose to 99%.

Abbreviations: TEE, Transoesophageal Echocardiography.
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Figure 1. Transoesophageal echocardiography. The jet of the tricuspid valve regurgitation is coming through the atrial septal defect, explaining the right-to-left shunt and cyanosis. LA: left atrium; RA: right atrium. Yellow arrow: atrial septal defect.

Figure 2. Transoesophageal echocardiography. The septal defect was successfully closed with an Amplatzer septal occluder (A).

In conclusion, interatrial right-to-left shunt may be unrelated to cavitory pressure regimen but explained only by the direction of the tricuspid regurgitation jet. Echocardiography, particularly TEE, is a valuable modality for identifying this specific and easily reversible mechanism of cyanosis in Ebstein patients.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

Appendix A. Supplementary data