Traumatic pulmonary valve injury following blunt chest trauma

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A 23-year-old man presented with exertional dyspnoea that had worsened over the past few years after sustaining chest contusions during a traffic accident. Auscultation over the pulmonary area revealed grade IV/V diastolic murmur. Transthoracic echocardiography demonstrated a flail posterior leaflet of the pulmonary valve (arrows, Panel A) with severe pulmonary regurgitation (arrows, Panels B–D), and see Supplementary data online, Video S2), right ventricular (RV) enlargement, and pulmonary artery dilatation (Panel D and see Supplementary data online, Video S3). Magnetic resonance imaging (MRI) confirmed RV enlargement (end-diastolic index of 172 mL/m²) (Panels E–H and see Supplementary data online, Videos S1–S3). He underwent successful implantation of a pulmonary homograft valve. This first reported case of pulmonary valve rupture secondary to blunt cardiac trauma illustrates the importance of the complementary nature of multimodality imaging. The higher temporal resolution of echocardiography provided superior visualization of the flail leaflet and the regurgitant jet. Conversely, MRI allowed definitive measurements of RV volume, indicating the need for surgery.

Supplementary data are available at European Heart Journal — Cardiovascular Imaging online.

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