Acquired Gerbode defect due to penetrating cardiac trauma: a very rare presentation

Sunil Gurmukhani¹, Surender Deora¹*, Sanjay Shah¹, Vinod Agrarwal², and Tejas Patel¹

¹Department of Cardiology, Sheth V.S. General Hospital, NHL Medical College, Gujarat University, Ahmedabad, India and ²Department of Cardiothoracic Surgery, Sheth V.S. General Hospital, NHL Medical College, Gujarat University, Ahmedabad, India

* Corresponding author. Department of Cardiology, Apex Heart Institute, Mondeal Business Park, SG Highway, Ahmedabad, India 380054. Tel: +91 9413063063; Fax: +91 79 26842288. Email: drsdeora@gmail.com

A 19-year-old male working in steel factory presented to emergency department with dyspnoea and palpitation following traumatic injury to right side of the chest in inframammary region (arrow, Panel A). Chest X-ray showed a foreign body overlying the cardiac shadow and homogenous opacity on the right side of the thorax suggesting hemothorax (arrow, Panel B). Transthoracic 2-D echocardiography revealed echogenic foreign body extending from left ventricular apex to cavity (arrow, Panel C; Supplementary data online, Video S1). Significant shunt was noted from left ventricle to right atrium mimicking Gerbode defect during peroperative transoesophageal echocardiography (arrow, Panel D; Supplementary data online, Video S2). A metallic foreign body was removed during emergency cardiac surgery with complete myocardial repair (Panels E and F). Postoperatively the patient was haemodynamically stable with no residual shunt (Supplementary data online, Video S3).

The Gerbode defect is an anatomic deficiency in membranous septum resulting in communication between left ventricle and right atrium. It is usually congenital in origin but rarely the defect is acquired due to infective endocarditis, blunt trauma, myocardial infarction, post-operative valve replacement, and ventricle septal defect repair. Physiologically, it causes volume overload of all four cardiac chambers similar to rupture of sinus of valsalva aneurysm to right atrium. Management includes surgical or percutaneous device closure of the defect.

Figure. Penetrating injury to the right inframammary region (arrow, Panel A). Chest X-ray showing foreign body overlying the cardiac shadow (arrow) and homogenous opacity in right hemothorax (Panel B). Transthoracic (Panel C) and transoesophageal echocardiogram with colour Doppler (Panel D) showing the echogenic foreign body in LV and LV to RA shunt. Intraoperative photograph (Panel E) showing the removal of the foreign body, 50 mm long metal shrapnel (Panel F). LV, left ventricle; RA, right atrium.

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

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author 2014. For permissions please email: journals.permissions@oup.com.