Post-Traumatic Complex Aortic Arch Pseudoaneurysm With Aorto-Innominate Vein Fistula

Michael Malyshev, Alexander Safuanov, Dmitry Siniukov, Dmitry Borovikov, Anton Malyshev and Andrew Rostovykh

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Michael Malyshev, MD, PhD, Alexander Safuanov, MD, Dmitry Siniukov, MD, Dmitry Borovikov, MD, Anton Malyshev, MD, and Andrew Rostovykh, MD

Center of Cardiac Surgery, Chelyabinsk, Russia

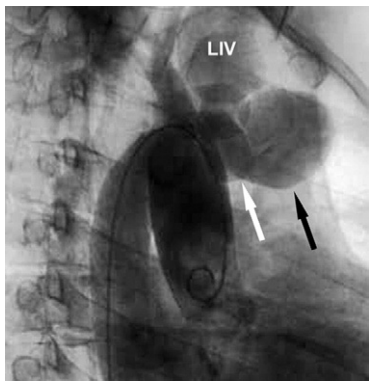

Fig 1.

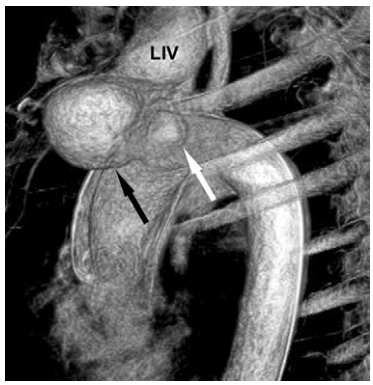

Fig 2.

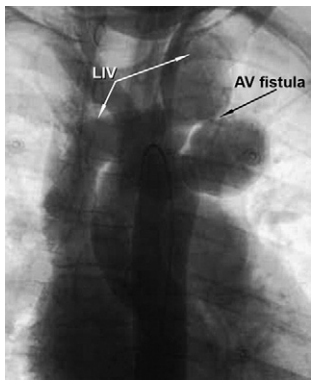

Fig 3.

A 43-year-old man was admitted to our institute in cardiac failure 12 years after he had sustained a stab wound in the suprasternal notch. A thoracic aortogram demonstrated a communication between the distal aortic arch and the left innominate vein (LIV) within consecutive double pseudoaneurysms (Figs 1 and 2; white and black arrows respectively). Figure 3 shows the venous phase image of the aortogram that showed the arteriovenous (AV) fistula and enlarged left innominate vein.

The patient was operated on through a median sternotomy with hypothermic (20°C) circulatory arrest. The distal aortic arch and the calcified pseudoaneurysms were dissected free as much as possible before initiation of cardiopulmonary bypass. The direct digital pressure on the venous end of communication was used to prevent systemic hypoperfusion during the patient's cooling. Once the temperature of 20°C was reached, cardiopulmonary bypass was stopped, and the lumen of the pseudoaneurysm communicated with left innominate vein was opened (Fig 4), and the fragmentary was removed. The pseudoaneurysm adjacent to the aortic arch was also removed with the aortic wall. The defects of the aortic arch and of the left innominate vein were repaired using a xenopericardial patch and a direct suture, correspondingly. After the air was removed from the aorta, and cardiopulmonary bypass was recommenced, the patient was re-warmed. He was still asymptomatic at his postoperative 8-month follow-up.

Address correspondence to Dr Malyshev, Center of Cardiac Surgery, PO Box 5977, Chelyabinsk, 454047, Russian Federation; e-mail: cardiosur@chel.surnet.ru.

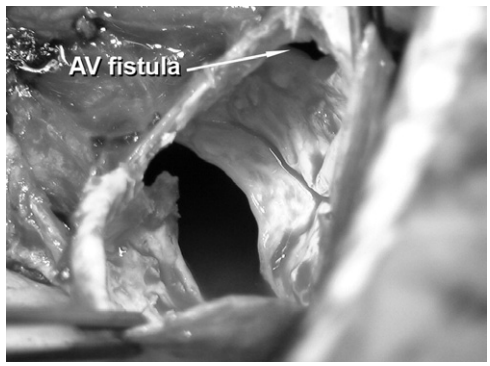

Fig 4.

The identified lesion is a rare case, and its anatomical forms are variable. The safe universal surgical repair has been developed after the first introduction by Borst and colleagues [1] in 1964. The optimal surgical technique includes cardiopulmonary bypass with hypothermic circulatory arrest through the median sternotomy, use or preparation of the femoral vessels for cannulation, prevention of the inadequate systemic perfusion by digital compression of the fistula or clamping of the left innominate vein [2].

References

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