

Sixteen-Slice Computed Tomography, Transthoracic Real-Time 3-Dimensional Echocardiography and Magnetic Resonance Imaging Assessment of a Long-Term Survivor of Rupture of Sinus of Valsalva Aneurysm

Key words: Valsalva, aneurysm, rupture, magnetic resonance imaging (MRI), multislice computed tomography, echocardiography

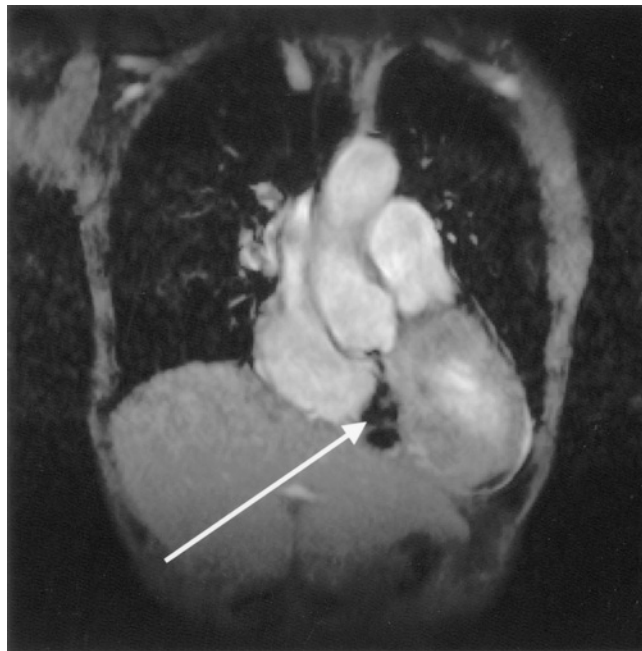


Figure 1. Cine MRI image. An abnormal flow drained from aorta into the RA is seen (arrow).

A 71-year-old woman was referred to our hospital because of abdominal pain and diarrhea. Immediately after a diagnosis of acute enterocolitis had been made, the medical treatment began. On admission, the chest radiograph showed cardiomegaly (cardio-thoracic ratio; CTR =67%), and she had a systolic cardiac murmur. She had been diagnosed with a heart murmur 25 years previously but had not had further examinations. Although she had been encouraged to undergo surgery since then, she had not had any symptoms and had never consulted a physician until this occasion. Transthoracic and transesophageal echocardiography (2-dimensional) confirmed the diagnosis of a ruptured aneurysm of the right sinus of Valsalva into the right atrium (RA). Abnormal flow drained from aorta into the RA was shown by a cine magnetic resonance imaging (Cine MRI) (Fig. 1). The contrast-enhanced scan with multislice computed tomography (MSCT) performed using a 16-slice scanner revealed a long tubular structure (10 mm long and 5 mm in diameter) which protruded from the right sinus of Valsalva into the RA (Fig. 2). Transthoracic real-time 3-dimensional echocardiography (RT3DE) (Sonos 7500, Philips Medical Systems) was also performed (Fig. 3). She rejected to cardiac catheterization and/or operation. Cardiomegaly improved

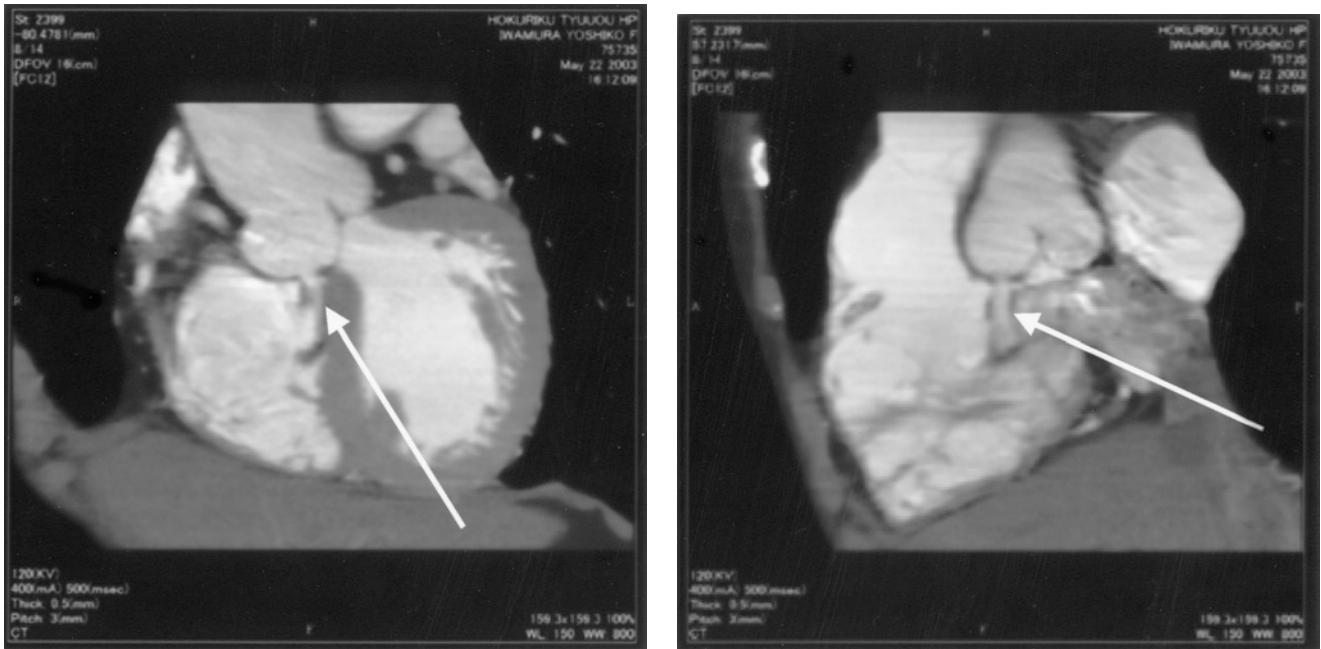


Figure 2. MSCT images. A long tubular structure from the right sinus of Valsalva protruding into the RA is clearly demonstrated (arrows).

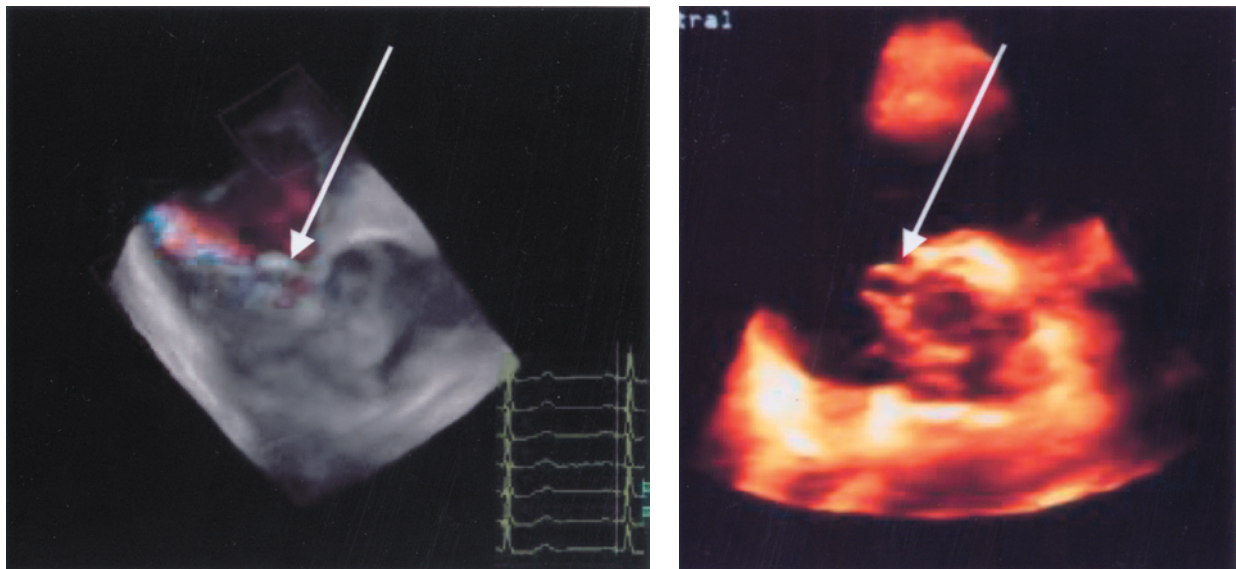


Figure 3. Transthoracic RT3DE images. An aorta-to-right atrial fistula through a ruptured right coronary sinus of Valsalva is seen (arrows).

(CTR =55%) after a 2-month treatment with diuretics (furosemide and spironolactone). At 2-year follow-up, the patient remained asymptomatic and in New York Heart Association functional class I without operative intervention.

Rupture of sinus of Valsalva aneurysms occurs infrequently. The incidence is between 0.14% and 0.96% in patients undergoing open heart surgical procedures (1–3). A mean survival period of 3.9 years has been reported in patients with untreated ruptured sinus of Valsalva aneurysms (4). This patient survived for at least 25 years without surgery. Thus, we consider this is to be an extremely rare case. To our knowledge, this is the first reported case with 3D echocardiographic

findings of ruptured sinus of Valsalva aneurysm.

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Yoshihiro NOJI^{*·****}, Senshu HIFUMI^{*}, Toshiro NAGAYOSHI^{**}, Shinya NAGASAWA^{*·****},
Tetsuya KASUGA^{*}, Kenji MIWA^{*·****}, Tsutomu KOBAYASHI^{***} and Hiroshi MABUCHI^{****}

From ^{*}the Department of Internal Medicine, and ^{**}the Department of Radiology, and ^{***}the Department of Anesthesiology,
Hokuriku Central Hospital, Oyabe, and ^{****}the Molecular Genetics of Cardiovascular Disorders,
Division of Cardiovascular Medicine, Graduate School of Medical Science, Kanazawa University, Kanazawa

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Reprint requests should be addressed to Dr. Yoshihiro Noji, Molecular Genetics of Cardiovascular Disorders, Division of Cardiovascular Medicine,
Graduate School of Medical Science, Kanazawa University, 13-1 Takara-machi, Kanazawa 920-8641
