

Peripheral angiographic view of severe aortic regurgitation 🎥

A 72-year-old hypertensive male patient was admitted to the emergency ward with chest discomfort and exertional dyspnea. Because his chest pain was suggestive of ischemia and his troponin was elevated more than 11 times the upper limit of normal, a coronary angiography was planned. During sheath placement, a femoral bruit was noticed. An angiographic view was obtained at the end of catheterization, which revealed forward and reverse flow of opaque along the right femoral artery (Video 1). Because there had been a diastolic murmur at the left sternal border upon physical evaluation, the first diagnosis we suspected was aortic regurgitation (AR). Transthoracic echocardiography performed after angiography also confirmed severe AR.

AR is one of the most commonly encountered heart valve diseases. As for any disease, physical examination is essential for the diagnosis of AR. In addition to auscultation of the heart murmurs, there are classic peripheral signs of AR that show as a result of the widened pulse pressure, such as Duroziez's sign (murmur) and Traube's sign (pistol-shot sound), both of which are auscultated over the femoral artery. Echocardiography is a crucial technique used to confirm the diagnosis of AR as well as to assess its severity, prognosis, and valve morphology. Holodiastolic flow reversal in the descending aorta and the abdominal aorta is a qualitative hallmark of severe AR. The case we report herein demonstrates an actual angiographic view of Duroziez's sign, Traube's sign, and an extreme holodiastolic flow reversal in the femoral artery in a patient with severe AR presenting with acute coronary syndrome.

Informed consent: The informed consent was obtained from the patient.

Video 1. Angiographic view of the push-pull (forward-reverse) movement of opaque along the right femoral artery, which represents an extreme holodiastolic flow reversal, Duroziez's sign, and Traube's sign in a patient with severe aortic regurgitation.

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Inadvertent distal coronary sinus perforation via a large thebesian vein during angiography 🎥

A 57-year-old man with a history of coronary bypass grafting underwent coronary angiography because of stable angina pectoris. During left system angiography with a JL4 angiography catheter, a large localized contrast leak was observed distributed along the epicardial fat pad around the proximal great cardiac vein (GCV) with no preceding pericardial effusion after an inadvertent forceful injection, which later demonstrated the GCV and coronary sinus (CS) as well (Video 1). The catheter was pulled back from the left ventricular cavity to the aorta, the left main coronary artery was then cannulated, and left system angiography was performed (Video 2). When the images were reexamined carefully, the JL4 catheter was observed to have inadvertently intubated a large thebesian vein endocardially around the anterior mitral annulus (Fig. 1 and 2). A possible explanation for the presence of localized contrast clouding is that the perforation or dissection extended from the thebesian vein branches into the GCV as a result of forceful injection. No complications were observed thereafter.

Thebesian veins are subendocardial vascular structures containing different sizes of sinusoids or valveless veins that drain into the right atrium and the left ventricle via the CS. Dissection or perforation of the CS and its branches develop mostly as a result of interventional procedures such as CS cannulation or during catheter ablation. The case we report herein was a rare example of a large dissection of the GCV that developed after inadvertent cannulation of the thebesian vein in the left ventricle during coronary angiography.

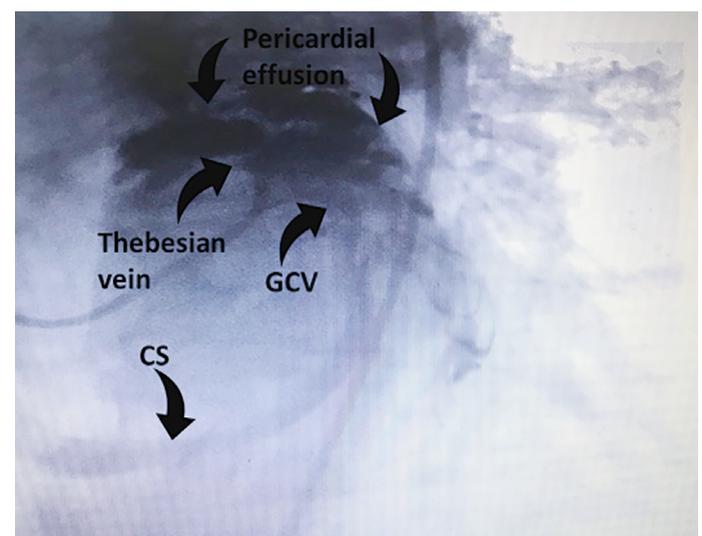


Figure 1. Visualization of the thebesian veins, great cardiac veins (GCV), coronary sinus (CS), and pericardial effusion

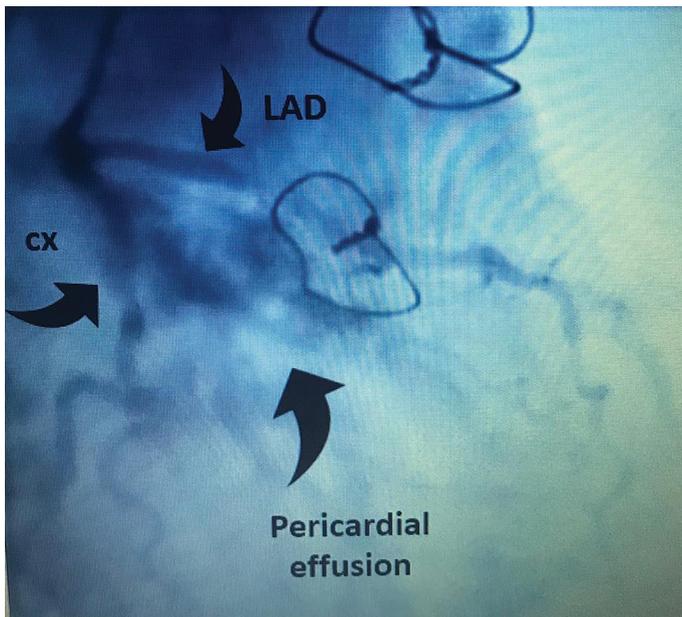


Figure 2. Pericardial effusion in the right anterior oblique caudal position

Informed consent: The informed consent was obtained from the patient.

Video 1. Visualization of the thebesian veins, great cardiac veins (GCV), coronary sinus (CS), and pericardial effusion.

Video 2. Left system angiography after intubation of a large thebesian vein.

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Eosinophilic myocarditis: Magnetic resonance imaging -based study of a dramatic response to steroids

A 14-year-old boy presented with a history of dyspnea on exertion for 6 months. A clinical examination and 12-lead electrocardiogram (ECG) yielded unremarkable results. 2D-ECG revealed

a large mass obliterating the left ventricular apex with tethering of the anterior mitral leaflet, moderate eccentric mitral regurgitation with moderate pulmonary arterial hypertension, and mild left ventricular dysfunction. Therefore, treatment with angiotensin converting enzyme (ACE) inhibitors, beta blockers, and low-dose diuretics was initiated. A cardiac magnetic resonance imaging (MRI) (Fig. 1a) suggested a left ventricular apical soft tissue mass with obliteration of apex. Late gadolinium enhancement (LGE) images (Fig. 1b) revealed a nonenhanced dark mass (white asterisk) overlying the bright subendocardial enhancement (white arrows) and the surrounding uniform subendocardial LGE in the apical region and papillary muscles with resultant mitral regurgitation and mild dysfunction (43%). The eosinophil count was elevated (1600 cells per mm³). Suspecting eosinophilic myocarditis, treatment with prednisolone at 1 mg/kg body weight was initiated. However, the patient was lost to follow-up for 8 months because he had symptomatically improved after taking the prescribed drugs within a few weeks. On the patient's next visit, a repeat cardiac MRI was performed to reassess the disease status, which showed a significant reduction in the soft tissue mass at the left ventricular apex (Fig. 1c). Additionally, the LGE image (Fig. 1d) showed a complete resolution of the mass with no residual LGE, suggesting a complete resolution of the inflammation.

MRI plays an important role in the workup of patients with eosinophilic myocarditis. The presence of ventricular thrombus,

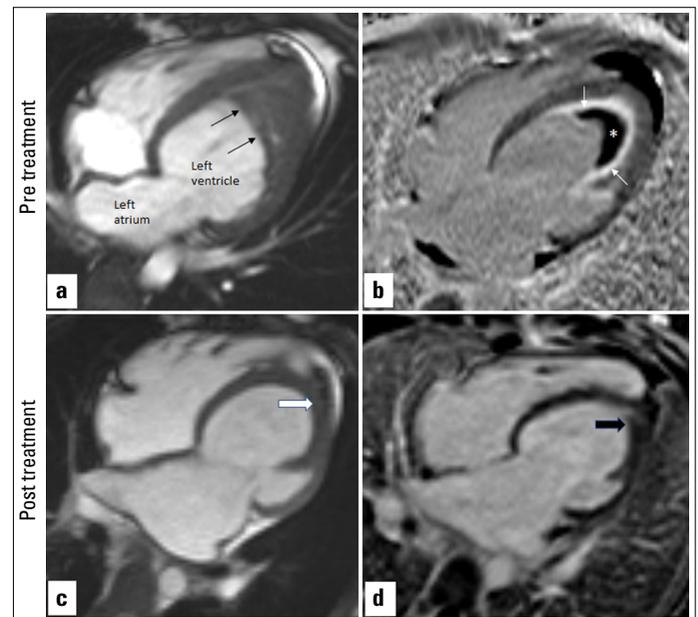


Figure 1. Cardiac MRI suggestive of left ventricular apical soft tissue mass with obliteration of apex. (b) Late gadolinium enhancement (LGE) images showing a non-enhancing dark mass (white asterisk) overlying the bright subendocardial enhancement (white arrows) and surrounding uniform subendocardial LGE in the apical region and papillary muscles with resultant mitral regurgitation and mild dysfunction (43%). (c) Repeat cardiac MRI was suggestive of significant reduction in the soft tissue mass at the left ventricular apex. (d) LGE image showed a complete resolution of the mass and no residual LGE suggesting complete resolution of the inflammation