Left Atrial Intramural Hematoma after Resection of Myxoma: Report of a Case

Shigeaki Aoyagi, MD, PhD, Shuji Fukunaga, MD, PhD, Tomokazu Kosuga, MD, PhD, and Hidetoshi Akashi, MD, PhD

A 73-year-old woman was referred for treatment of left atrial (LA) myxoma. At surgery, a myxoma was attached to the left atrial side of the fossa ovalis in the atrial septum by a stalk and was transmurally excised with a margin of the atrial septum. The atrial septum was closed without any prosthetic materials under mild to moderate tension. Although she was asymptomatic, postoperative transesophageal echocardiography (TEE) revealed an abnormal cavity, containing heterogeneous echogenicity without blood flow, in the posterior LA wall. Magnetic resonance imaging (MRI) demonstrated a mass without significant enhancement. It was considered to be an intramural hematoma, and the diagnosis of LA dissection was made. Follow-up echocardiography showed disappearance of the dissected lumen without surgical intervention. Both TEE and MRI are useful for the correct diagnosis of an LA dissection; and surgical intervention, entry closure or internal drainage, may not always be necessary in the absence of a hemodynamic compromise with an LA dissection.

Key words: heart surgery, echocardiography, magnetic resonance imaging

Introduction

Atrial intramural hematoma is a rarely found pathological state in clinical practice. It is most often caused by catheter procedures or cardiac surgery; however, other less common etiologies, including cardiac amyloidosis, calcified mitral annulus, myocardial infarction, blunt chest trauma and spontaneous occurrence without a clear, identifiable etiology, have also been previously described. Atrial intramural hematoma occasionally leads to severe hemodynamic compromise requiring prompt surgical repair. In this paper, we describe a case of left atrial (LA) intramural hematoma after excision of a left atrial myxoma attached to the atrial septum, which was successfully managed without surgical intervention. To our knowledge, no reports describing atrial intramural hematoma after myxoma excision have been previously found in the literature.

Case Report

A 73-year-old woman was incidentally diagnosed with LA myxoma during a close examination for abnormalities of liver function test. On admission, the patient was asymptomatic and had no history of stroke, chest trauma or any bleeding disorders. Transthoracic echocardiography (TTE) showed a mobile tumor 4 cm in diameter attached to the atrial septum in the left atrium. Coronary angiography revealed normal coronary arteries. At surgery, the left atrium was opened through a superior transseptal approach under total cardiopulmonary bypass (CPB) and myocardial protection was achieved using...
intermittent antegrade cold blood cardioplegia. The myxoma attached to the left atrial side of the fossa ovalis in the atrial septum by a short and broad stalk with a diameter of 15 mm and was easily excised with a 5 mm margin of the atrial septum. The atrial septum was directly closed without using any prosthetic materials under mild to moderate tension. Direct current electrical defibrillation was applied once for resuscitation of her heart action. Weaning from CPB was accomplished using a small amount of catecholamine, and the postoperative hemodynamics was stable. Routine intraoperative transesophageal echocardiography (TEE) showed no specific findings. Although the patient had no cardiovascular symptoms such as chest pain and dyspnea, routine postoperative TTE performed on postoperative day 4 revealed an abnormal cavity in the posterior wall of the left atrium. Electrocardiography showed normal sinus rhythm without ST-T changes, and the cardiac enzymes such as aspartate aminotransferase, lactate dehydrogenase, or creatine kinasis-MB were negative. The partial thromboplastin time was in a normal range. TEE demonstrated that the cavity (35 × 20 mm) occupied the posterior half of the left atrium, extended to the mitral valve annulus, and contained heterogeneous echogenesity (Fig. 1A and 1B). No blood flow was detected in the cavity by Doppler study, and no obstruction of pulmonary venous and transmitral flows was also observed. Magnetic resonance imaging (MRI) demonstrated an oval mass (33 × 22 mm) in the posterior wall of the left atrium with no significant enhancement but scattered spots of different density (Fig. 1C). It was considered to be an intramural hematoma. Although the true left atrial chamber was compressed by the intramural hematoma, the patient’s hemodynamic status was stable, and she was asymptomatic, therefore, she

Fig. 1 Transthoracic (A) and transesophageal echocardiograms (B), and magnetic resonance image (C, D) showing LA intramural hematoma of the posterior wall of the left atrium.
Ao: aorta; H and white arrows: intramural hematoma; LA: left atrium; LV: left ventricle
was managed conservatively. TTE performed 4 months after surgery showed that the dissected lumen had disappeared (Fig. 2). The patient is doing well without any cardiovascular symptoms 26 months postoperatively.

Discussion

Although the true incidence of atrial intramural hematoma is unknown, LA intramural hematoma is a rare pathological state.1) LA intramural hematoma is mainly associated with procedures of cardiac catheterization or cardiac surgery; however, other less common etiologies, such as cardiac amyloidosis,3) calcified mitral annulus,4) myocardial infarction,5) blunt chest trauma6) and spontaneous occurrence without a clear identifiable etiology,1,2,7) have also been previously described. In the present patient, the LA intramural hematoma occurred in the posterior wall of the left atrium after excision of the myxoma attached to the atrial septum. Although the exact causative mechanism is unclear, suture closure of the defect without using a prosthetic patch after partial excision of the atrial septum with the tumor may have led to tension on the posterior wall and may have damaged small vessels in the atrial wall. In addition, tissue fragility is also suggested being one of the leading causes of LA intramural hematoma in the present elderly female patient, because no surgical procedures were carried out on the mitral valve or the posterior wall of the left atrium in this patient.

Both TTE and TEE clearly delineated the intramural hematoma in the left atrial wall, in our patient. TEE; however, is generally the procedure of choice in the diagnosis of an LA intramural hematoma,2,7) and it has revealed a heterogeneous round LA mass with smooth edges broadly attached to the posterior and/or lateral LA wall in most cases. Although echocardiography is helpful for diagnosing LA intramural hematoma, the precise differential diagnosis between intracardiac and extracardiac disease may not always be difficult, especially in rare cases with atypical morphologic characteristics.1,2,7) MRI is also a useful tool for the etiologic diagnosis of a mass in the left atrium. According to a report of a case of spontaneous hematoma, which was correctly diagnosed by MRI,8) an LA intramural hematoma was delineated as an intraatrial mass, with zones of different density, suggesting hemorrhage within it. From this case, we can conclude that MRI often provides more detailed anatomic information, particularly in the composition of the mass in the posterior LA wall.9)

No definitive criteria for the management of this condition have been established. Prompt surgical repair has been occasionally required because of obstruction of blood flows. However, conservative treatment without surgical intervention has been successfully performed in several cases with stable hemodynamics under proper medication.8) Although the intramural hematoma was large, there was no obstruction of pulmonary venous and transmitral blood flows and the patient’s hemodynamics was stable in our case. The LA intramural hematoma, therefore, was conservatively treated, and a spontaneous cure was obtained.

In conclusion, we describe a case of LA intramural hematoma after excision of a left atrial myxoma, which was cured without surgical intervention. Both TEE and MRI are useful for the diagnosis of an LA intramural hematoma. In the absence of hemodynamic compromise with LA intramural hematoma, surgical intervention may not always be necessary.

References

2) Shaikh N, Rehman NU, Salazar MF, Grodman RS. Spontaneous intramural atrial hematoma presenting as a left atrial mass. J Am Soc Echocardiogr 1999; 12:


