Endoscope-assisted superior septal approach for resection of left atrial myxoma

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The endoscope-assisted approach, which is now being used for many surgical procedures, often provides a better operative view than that provided with conventional approaches. We encountered a cardiac myxoma located on the superior wall of the left atrium. The endoscope-assisted superior septal approach provided an excellent operative view and provided for a safe tumor resection.

Clinical Summary

A 74-year-old man who had been having paroxysmal atrial fibrillation for a few months was admitted to our hospital. Echocardiographic and computed tomographic studies (Figure 1) showed a round, homogeneous mass at the free wall of the left atrium. The left atrium was echocardiographically measured at 39 mm in depth beneath the ascending aorta. The patient consented to resection of the tumor. Extracorporeal circulation was established through a conventional median sternotomy, and moderate hypothermia and blood cardioplegic solution were used for myocardial protection.

The right atrium and atrial septum were incised. A thoracoscope, which is used for routine endoscopic thoracic surgery in our institute, was inserted through the atrial septotomy and revealed that the stalk of the tumor was located on the superior wall of the left atrium (Figure 2). The incision was extended from the atrial septum to the superior aspect of the left atrium, without incising the stalk. During thoracoscopic observation, the incision was completed along the superior wall of the left atrium. The stalk was excised together with an adjacent 5 mm of left atrial intima. The intimal defect was closed by means of direct suture without a patch. Myocardial ischemic time was 55 minutes. Pathologic

Figure 1. Preoperative echocardiographic (A) and computed tomographic (B) findings. An echocardiogram shows a 2.4 × 2.3-mm mass in the left atrium beneath the ascending aorta. A round mass was located on the superior wall of the left atrium, and the left atrium was not enlarged.

examination showed a completely resected 28 × 25 × 17-mm mass compatible with cardiac myxoma. The patient was given pilsicainide hydrochloride (Sunrythm) to control paroxysmal atrial fibrillation. He was discharged with no complications.

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Received for publication May 5, 2001; accepted for publication June 5, 2001.

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J Thorac Cardiovasc Surg 2002;123:357-8

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0022-5223/2002 \$35.00 + 0 12/54/117830

doi:10.1067/mtc.2002.117830

Figure 2. An intraoperative endoscopic view. The mass with a smooth surface was recognized (in the right upper quadrant) through thoracoscopic views, and the stalk originated from the superior wall of the left atrium.

Discussion

Recent sophisticated endoscopic techniques have provided surgeons with new surgical options. In cardiac surgery, procedures such as atrial septal defect repair and mitral valve surgery have been successfully performed endoscopically.^{1,2} The endoscope

can provide an excellent operative view, especially in a small operative field. The superior septal approach for mitral valve surgery can also provide a wide operative field, contributing to safety and surgeon confidence. In our use of the superior approach for mitral valve surgery, we have encountered no intractable arrhythmias.³

Our patient's small atrium and tumor site prevented us from observing the tumor stalk by means of the conventional transseptal view. With endoscopic examination, the anatomy of the tumor was clarified, and subsequent operative procedures were easily performed. Our thoracoscope was not flexible because it was designed for use in thoracic surgery. Use of a flexible endoscope in intracardiac procedures would be even more desirable in cases such as ours. With further innovation in endoscopic instruments, complex surgical procedures requiring subtle maneuvers will be possible with endoscopic assistance. Our case exemplifies the increasing usefulness of endoscope-assisted cardiac surgery.

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