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Case report

Video-assisted cardioscopy for removal of primary left ventricular myxoma

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Abstract

Left ventricular myxoma is a rare benign cardiac tumor. Surgical excision is the treatment of choice and completeness of removal is mandatory to avoid late recurrence. A case is presented in which aortic transvalvular video-assisted cardioscopy was used to facilitate removal. © 1999 Elsevier Science B.V. All rights reserved.

Keywords: Left ventricular myxoma; Videocardiography; Video-assisted cardiac surgery

1. Introduction

In recent years the advent of endoscopic procedures in cardiac surgery has allowed the development of minimally invasive approaches in order to reduce surgical aggression. Video-assisted surgery provides an adequate source of light in a very reduced field and allows the transfer of the images of the surgical field onto a screen. The use of the videoscope is also useful in cases in which deep intracardiac structures, like intraventricular tumors, are difficult to reach or where the accuracy of the surgical removal is crucial for the outcome of the operation. To our knowledge this is the first known case of transaortic video-assisted cardioscopy for removal of a primary non-recurrent left ventricular tumor.

2. Case report

A 23-year-old male was admitted to a community hospital with the chief complain of acute limb pain after exercise. The clinical diagnosis of acute limb ischemia was made. Urgent arteriography showed complete occlusion of the common femoral artery and embolectomy was successfully performed through a cutdown in the groin. Computed tomography of the chest and transesophageal echocardiography were performed after the operation to rule out the possible origin of the embolus. A 2 × 2-cm cardiac tumor was found to originate from the apical part of the interventricular

septum within the left ventricle. Magnetic resonance imaging also confirmed the diagnosis (Fig. 1). Pathological examination of the sample removed at the time of surgery confirmed the presence of a left ventricular myxoma. The patient was thereafter sent to our institution for surgical treatment.

After median sternotomy and full heparinization cardiopulmonary bypass through bicaval and aortic cannulation was instituted. The heart was arrested with antegrade cold blood cardioplegia. A transverse aortotomy was performed and the aortic leaflets were gently retracted. A 10-mm 0° Storz[®] thoracoscope was advanced into the left ventricle. The tumor was easily visualized near the apex of the left ventricle as a gelatinous pedicled mass originating from the apical portion of the interventricular septum. Under combined video assistance and direct vision the mass was completely removed including its myocardial attachment (Fig. 2). Extreme care was taken in removing all gross tumor mass to avoid any possibility of recurrence. Pathological examination confirmed again the presence of myxoma. The postoperative course was uneventful and the patient was discharged on the fifth postoperative day. One year after the operation the patient is asymptomatic leading an active life.

3. Discussion

Video-assisted cardiac surgery has recently been reported to be of help in certain situations like closure of patent ductus arteriosus, miectomy of the left ventricular outflow tract in the treatment of idiopathic hypertrophic subaortic

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Fig. 1. Magnetic resonance imaging showing the left ventricular apical mass.

stenosis and removal of thrombus or tumor from the left ventricle [1–3]. Reducing the size of the surgical incision or facilitating the approach to structures that would other-



Fig. 2. Intraoperative picture of the tumor and its endocardial attachment upon removal.

wise be considered as unsuitable seem to be advantages of this type of surgery. In the case presented herein we were able to completely remove the tumor through the aortic valve with the aid of the thoracoscope thus avoiding an often suboptimal viewing of the left ventricular apex through the mitral valve (difficult left atriotomy) or a more traumatic (dangerous) left ventriculotomy and enhancing our direct exposure of the tumor in the apical region.

The use of videocardioscopy improves the lighting inside the surgical field and makes easier the vision of the remote part of the intracardiac anatomy, giving additional protection from possible injuries of surrounding structures and facilitating the completeness of the procedure. Cardiac myxomas arising from the left ventricle are extremely rare and represent 2% of all myxomas [4]. Embolic phenomena are a common clinical event as in our case. The surgical approach described in the literature is usually a left atriotomy for tumors arising from the inflow part and aortotomy for those arising from the outflow. Left ventriculotomy is generally avoided for its unfavorable consequences like arrhythmia or aneurysm. Detachment and reimplantation of the anterior leaflet of the mitral valve has also been described for the excision of left ventricular myxoma [5]. The main problem of incomplete removal of those tumor masse is the high incidence of recurrence.

The possibility of infiltration of underlying structures makes advisable the removal of part of the surrounding myocardium. Tumors arising in the depth of periapical segments are the most difficult to reach. For this reason the use of the thoracoscope for extended videocardioscopy is strongly recommended to facilitate the view of the site of implant, to avoid injury of surrounding structures during resection and to guarantee the complete excision.

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