Right Atrial Myxoma in a Patient Presenting with Syncope

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Summary: We describe a case of right atrial myxoma in a 62-year-old woman presenting with syncope. The patient had a 4-month history of syncope and felt faint on lying flat in bed before the admission. Transthoracic and transesophageal echocardiography showed a large right atrial mass that was prolapsing through the tricuspid valve into the right ventricle during diastole. Coronary angiography revealed a tumor stain through the right coronary artery and no significant stenosis of the coronary arteries. During operation, cardiopulmonary bypass was initiated with cannulation into the aorta and retrograde femoral vein and superior vena caval cannulation. The large tumor was attached by a short stalk to the interatrial septum at the border of the fossa ovalis. The tumor and the interatrial septum including the stalk with a 1.5-2.0 cm cuff extending the full thickness of the septum were completely excised. A histologic examination of the tumor confirmed the diagnosis of cardiac myxoma. We emphasize a characteristic feature of syncopal attacks, and discuss the importance of prevention of intraoperative systemic and pulmonary tumor embolization resulting from venous cannulation for cardiopulmonary bypass in patients with right atrial myxomas.

Key words cardiac tumor, myxoma, syncope

INTRODUCTION

Primary tumors of the heart are rare, and have been found in only 0.0017 to 0.19% of unselected patients at autopsy [1,2]. Approximately 75% of primary cardiac neoplasms are benign. Among the benign lesions about 40% are myxomas. Of the myxomas, 75 to 80% are located on the left side of the interatrial septum [3]. Right atrial myxoma, however, accounts for only 8.6 to 20% of all cardiac myxomas [4,5].

In this paper, we describe a case of right atrial myxoma in a patient who presented with syncope.

CASE REPORT

A 62-year-old Japanese woman was admitted for an examination with a 4-months history of syncope, general fatigue, and leg edema. For several days before the admission, she felt faint on lying flat in bed. On admission, she was not anemic but severely dyspneic. Her lower legs were edematous. No cardiac murmur was heard and a plop sound was audible immediately after the second heart sound at the tricuspid area. A chest X-ray showed moderate cardiomegaly (cardio-thoracic ratio = 56.5%) without pulmonary congestion. An electrocardiogram revealed normal sinus rhythm and no hypertrophy of the ventricles. Transthoracic and transesophageal echocardiography showed normal left ventricular size and function, but there was a large right atrial (RA) mass (5.3×3.7 cm) that was prolapsing through the tricuspid valve into the right ventricle (RV) during diastole (Fig. 1). Coronary angiography revealed a tumor stain through the conus branch of the right coronary artery and no significant stenosis of the coronary arteries (Fig. 2). On the basis of these findings, the diagnosis of RA myxoma was made and the
Fig. 1. Transesophageal echocardiograms showing a large RA mass that was prolapsing through the tricuspid valve into the RV during diastole (right panel). The large mass was attached to the interatrial septum (left panel). A: aorta, LA: left atrium, M: myxoma, RA: right atrium, RV: right ventricle

Fig. 2. Coronary angiograms showing a tumor stain (arrow) through the conus branch of the RCA.

Fig. 3. An operative photograph (surgeon’s view) showing a large myxoma that occupied almost the entire RA. Excellent operative view for adequate excision of the whole tumor and sufficient operative room for careful handling of the myxoma are provided by SVC and retrograde femoral vein cannulation. M: myxoma

During operation, cardiopulmonary bypass was initiated with cannulation into the aorta and the superior vena cava (SVC). After the inferior vena cava (IVC) was cannulated via the right femoral vein, cardiac standstill was obtained by cold blood cardioplegia. The right atrium was longitudinally opened parallel to the atrioventricular groove. The large tumor (6.5×4.5×3.0 cm in size, 40 g of weight) occupied almost the entire RA, except for a little space near the orifice of the SVC. The tumor was attached by a short stalk (1.0 cm in diameter) to the interatrial septum at the border of the fossa ovalis. The tumor and the interatrial septum including the stalk with a 1.5-2.0 cm cuff extending the full thickness of the septum were completely excised (Fig. 3), and the patient had an uneventful postoperative recovery. A histologic examination of the tumor confirmed the diagnosis of cardiac myxoma.
RA MYXOMA PRESENTING WITH SYNCOPE

DISCUSSION

Right atrium myxoma is a rare cardiac tumor and is generally seen in women who are in the fourth and fifth decade of life [6]. Right atrium myxoma is usually located in the interatrial septum at the border of the fossa ovalis [1].

Most RA myxomas tend to be asymptomatic, and have no specific and infallible symptoms or signs to assist in making the correct diagnosis. According to a previous study [7], the three common presenting symptoms have been right heart failure, constitutional symptoms such as fever, weight loss or arthralgia, and syncopal attacks, and the other presenting symptoms have been fatigue and weakness, chest pain, palpitations, and obstruction of the SVC.

Generally, syncope arises from a temporary occlusion of the tricuspid valve resulting from prolapse of the tumor into the RV during diastole, and precipitation of syncopal attacks by postural change is a characteristic feature in RA myxoma. In this patient, lying flat in bed caused the patient to faint.

An important aspect of surgery is the prevention of intraoperative systemic and pulmonary tumor embolization. In this patient, venous cannulas were inserted into the SVC directly and into the IVC via the femoral vein to avoid embolism due to tumor fragments. Although recent studies have shown that IVC cannulation through the RA is quite safe [7,8], femoral vein cannulation will certainly prevent tumor embolization during the insertion of a cannula and also avoid undue manipulation of the heart before a crossclamping of the aorta. In addition, retrograde femoral vein and SVC cannulation probably provides a superior operative view for adequate excision of the entire tumor and adequate operative room for careful handling of the myxoma.

REFERENCES