An Unusual Presentation of Schwannoma in the Interatrial Space

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We report the case of a 69-year-old woman who was diagnosed with intracardiac schwannoma without symptoms. Preoperative echocardiography and cardiac magnetic resonance imaging showed a mass attached to the interatrial septum. The initial diagnosis was a myxoma or a bronchogenic cyst. The tumor was successfully excised under cardiopulmonary bypass. However, the pathology of the excised tumor was consistent with schwannoma. We suggest that cardiovascular surgeons consider schwannoma to be a possible differential diagnosis for a mass close to the interatrial septum.

Key words: 1. Atrium  
2. Heart neoplasms  
3. Schwannoma (neurolemmoma)

CASE REPORT

A 69-year-old woman was diagnosed with an intracardiac tumor during a preoperative work-up for sigmoid colon cancer. Echocardiography demonstrated that there was a 2.5×2.6 cm mass in the left atrium, which had a relatively broad base at the interatrial septum. The mass was not highly mobile and did not result in any valvular dysfunction or hemodynamic compromise. Cardiac magnetic resonance imaging (MRI) also revealed a 2.4 cm mass located at the interatrial septum (Fig. 1). The initial diagnosis was a myxoma or a bronchogenic cyst in the left atrium. An operation for this intracardiac mass was planned before colon cancer surgery.

The operation was performed using a routine median sternotomy. Standard aortic cannulation in the ascending aorta and bicalval venous cannulation were used. Only antegrade cardioplegia was used because the tumor was located very close to the coronary sinus. The tumor was not visualized from outside the heart. During palpation from the inferior side of the heart, a solid mass could be felt near the coronary sinus. After aortic cross-clamping, a right atriotomy was performed and extended to the left atrial roof. The tumor was invisible from inside both atrial chambers. A downward incision was made at the interatrial septum from the superior border. A well-encapsulated 2.5 cm mass was then found in the interatrial space. The tumor had cystic features, and the diagnostic impression from the operative finding was a bronchogenic cyst. The mass was excised from the interatrial space without rupture. Extreme care was taken to prevent injury to the coronary sinus. The tumor had no identifiable stalk. After excision of the mass, the empty interatrial space was filled with Tisseel (Baxter Healthcare Co., Westlake Village, CA, USA) glue. The interatrial septum, left atrial roof, and right atrium were then anatomically reconstructed.

The tumor was a well-encapsulated cystic mass measuring 2.8×2.7×2.5 cm. The cut surface of the tumor consisted of...
multiple cystic nodules (Fig. 2). The largest cystic nodule measured 2.0×1.5×1.2 cm and had a serous component. A microscopic section showed typical biphasic architecture with Antoni A (hypercellular) and B (hypocellular) patterns (Fig. 3A, B). In the hypercellular area, the tumor cells contained spindle-shaped nuclei and had a wavy appearance. Immunohistochemically, S-100 protein staining was strongly positive in most cells, which is consistent with schwannoma (Fig. 3C). Therefore, the final pathologic diagnosis was schwannoma.

The patient recovered and was discharged on postoperative day 10 without complications. Postoperative echocardiography confirmed no residual tumor. The patient underwent colon
A Case of Intracardiac Schwannoma

DISCUSSION

Primary cardiac tumors are rare. Their incidence has been reported to be 0.0017% to 0.28% in autopsies. Overall, 76.5% of these tumors are benign, and 40% are myxomas [1]. Primary cardiac schwannoma is extremely uncommon. Currently, fewer than 15 cases of atrial schwannoma can be found in a PubMed search. Further, to the best of our knowledge, there have been no reports on cardiac schwannoma located in the interatrial space.

According to the previous case reports, patients with intracardiac schwannoma had various presentations, such as new-onset atrial fibrillation, recent shortness of breath, pleuritic chest discomfort, and chronic cough [2-5]. There was one patient without symptoms from the tumor [6]. In our case, the diagnosis was made during a preoperative work-up for colon cancer surgery. Even benign cardiac tumors should be completely excised, irrespective of the symptoms, because the tumors may grow and compress the cardiac chambers and cause thromboembolism, arrhythmia, or even sudden death [7]. Therefore, the patient underwent tumor excision before the colon cancer operation.

All the previously reported cardiac schwannomas were located outside the cardiac chambers. Therefore, cardiac tumors outside the cardiac chambers might also be schwannomas. However, in this case, the tumor was in the interatrial space. We think that the initial misdiagnosis could be attributed to the unusual anatomic location of the tumor. In fact, the tumor was located inside the heart but outside the cardiac chambers; therefore, accurate preoperative characterization of the tumor was difficult, even with echocardiography and cardiac MRI.

Although imaging studies did not suggest the possibility of metastatic cancer, one of our initial differential diagnoses was a metastatic tumor from the patient’s colon cancer. Therefore, we took extreme care to excise the tumor en bloc. In particular, the dissection of the inferior pole of the tumor was relatively challenging because the margin was immediately above the coronary sinus. We shaved the intramuscular portion of the coronary sinus wall.

In conclusion, this case report describes a rare presentation of intracardiac schwannoma in the interatrial space. The tumor was completely excised, and the patient recovered without problems. Cardiovascular surgeons should consider schwannoma in the differential diagnosis of a low-mobility mass close to the interatrial septum.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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