was consistent with recurrent ovarian GCT. The patient was treated with postoperative adjuvant chemotherapy (bleomycin, etoposide and cisplatin [BEP]).

GCTs of the ovary account for < 5% of all ovarian neoplasms. Two different types of GCTs have been defined: the juvenile and the adult types [1]. GTCs characteristically have a low malignant potential and a tendency for local spread and high local recurrence rates, sometimes many years after the initial diagnosis. Five-year survival rates usually are 90-95% for stage I tumors compared to 25-50% for patients presenting with advanced-stage disease. Although 5-year survival rates are quite good, GCTs have a propensity for late recurrence, some of them occurring as many as 37 years after diagnosis [2,3]. The tendency for late recurrence makes GCTs unique among malignant ovarian tumors. It is thought that recurrent tumors arise from peritoneal seeds which begin at a point of contact between the primary tumor and a lower abdominal or pelvic structure [3]. In our case the recurrent mass was localized at the round ligament. Although there is no standard therapy, surgery is the primary choice of treatment which alone provides cure in cases with disease confined to the ovaries and it is similar to that used for epithelial ovarian cancers. Recurrent tumors can be treated with surgical resection, post-operative chemotherapy or radiotherapy. Radiotherapy could play some role in advanced or recurrent disease with minimal residual tumor after operative debulking. Chemotherapy appears advisable in patients with large residual disease, inoperable recurrences, or metastases [1]. Due to the low incidence of these tumors, randomized studies assessing the value of postoperative adjuvant therapy in high-risk patients could not be possible up to date. Therefore, it is still not clear whether the use of postoperative treatment actually confers a survival advantage. Nevertheless, adjuvant platinum-based combination chemotherapy is considered in patients with advanced or metastatic disease [2]. The overall response rate to BEP combination, which is considered to be an effective regimen with tolerable toxicity as a first-line chemotherapy, was reported as 83% in metastatic sex-cord/stromal tumors of the ovary [2].

Signet-ring cell carcinoma can arise in many organs, but it usually occurs in the gastrointestinal tract, especially in the stomach (90% of the cases) [4].

To our knowledge this is the first case with two coexisting tumors composed of signet-ring cell gastric carcinoma and recurrent GCT.

References

1. Uygun K, Aydiner A, Saip P et al. Granulosa Cell Tumor of the Ovary: Retrospective Analysis of 45 Cases. Am J Clin Oncol 2003; 26: 517-521.
2. Schumer ST, Cannistra SA. Granulosa cell tumor of the ovary. J Clin Oncol 2003; 21: 1180-1189.
3. Ayhan A, Salman MC, Velipasaoglu M et al. Prognostic factors in adult granulosa cell tumors of the ovary: a retrospective analysis of 80 cases. Gynecol Oncol 2009; 20: 158-163.
4. Kunisaki C, Shimada H, Nomura M et al. Therapeutic strategy for signet ring cell carcinoma of the stomach. Br J Surg 2004; 91: 1319-1324.

D. Sarikaya[1], O. Varan[1], G. Ozen[1], E. Dogan[2], K. Altundag[2]

[1]Department of Internal Medicine, and [2]Department of Medical Oncology, Hacettepe University Institute of Oncology, Ankara, Turkey

Correspondence to: Kadri Altundag, MD. E-mail: altundag66@yahoo.com

Mitral valve myxoma: usefulness of cardiovascular magnetic resonance imaging

Dear Editor,

Although not uncommon, cardiac myxoma presents a significant finding due to its deleterious effect on morbidity and mortality [1]. Heart valves are extremely rare locations for this tumor, either as primary site or site of recurrence.

A 58-year-old female patient was admitted due to progressive dyspnoea and orthopnoea. Twelve-lead ECG revealed normal sinus rhythm and no signs of acute ischemia. Transthoracic echocardiography (TTE) revealed an intracardiac mass (4.8 × 3.5 cm) in the left atrium prolabing in the diastole through the mitral valve into the left ventricle. Cardiac MRI (CMRI) was performed in order to differentiate primary cardiac tumor and thrombus. The examination confirmed the TTE findings of left atrial myxoma, which arose from the atrial side of the anterior mitral leaflet prolapsing through the mitral valve (Figure 1).

The patient underwent surgical resection of the tumor. Intraoperative findings confirmed the short attachment pedicle of the tumor to be on the atrial side of the anterior mitral valve in close proximity to the mitral annulus. The tumor was completely excised.

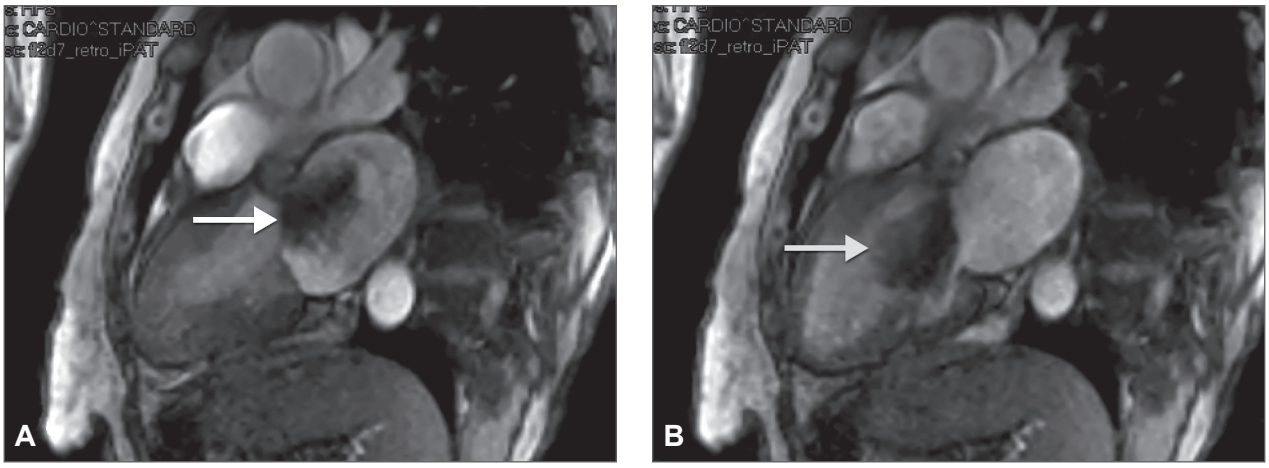

Figure 1. Cine RETRO flash 2D sequence showing long axis view clearly demonstrating the mass in intraatrial (**A**) and transmitral (**B**) location.

Cardiac myxomas are the most common primary cardiac tumors in adults with an estimated incidence of 0.5 per million of population [1]. Myxomas are thought to arise from the primitive undifferentiated multipotential mesenchymal cells that persist in the subendocardium and attachments to other areas of the atrial septum, atrial free wall, mitral valve leaflets and ventricles. Myxomas of the valves are exceedingly rare. Depending on their size and localization their clinical presentation is mainly consisted of improper hemodynamic status related to blood flow obstruction, rhythmic disturbances and embolic potential.

Different imaging modalities are available for detecting cardiac myxomas. Although the CMRI is characterized by high spatial resolution which allows for depiction of intracavitary tumors, these tumors are generally well appreciated and delineated using conventional TTE or transesophageal echocardiography [2]. TTE is the screening modality of choice for the initial evaluation of patients with suspected cardiac neoplasms. On CMRI, myxomas are diagnosed by the typical location close to the interatrial septum, high signal intensity on T2-weighted spin-echo sequences and heterogeneous enhancement following contrast administration. Varying amounts of myxoid, haemorrhagic, ossific, and necrotic tissue give them a heterogeneous appearance on T1 and T2-weighted images.

The first reported case of myxoma involving mitral valve was reported in 1970 by Sandrasagra and colleagues [3]. Sadeghi and colleagues compiled and reviewed the largest series of mitral valve myxoma [4]. So far, 25 cases of mitral valve myxoma were diagnosed pre-mortem; 23 were primary ones, whereas 2 were recurrent myxomas.

Mitral valve myxomas have an increased risk for embolization of tumor fragments and could lead to sudden death [5]. These events may be triggered by high mobility of mitral leaflets, high pressure within the left ventricular chamber and intrinsic properties of tumor mass. Once a myxoma is diagnosed, surgery should be carried out urgently.

Imaging plays a central role in the evaluation of a suspected cardiac tumor. The present case demonstrated the superiority of CMRI in patients with an atypically localized myxoma where the key issue is to differentiate it from intracardiac thrombus.

References

1. Velicki L, Nicin S, Mihajlovic B, Kovacevic P, Susak S, Fabri M. Cardiac myxoma: clinical presentation, surgical treatment and outcome. J BUON 2010; 15: 51-55.
2. Pennell DJ. Cardiovascular magnetic resonance. Circulation 2010; 121: 692-705.
3. Sandrasagra FA, Oliver WA, English TA. Myxoma of the mitral valve. Br Heart J 1979; 42: 221-223.
4. Sadeghi N, Sadeghi S, Karimi A. Mitral valve recurrence of a left atrial myxoma. Eur J Cardiothorac Surg 2002; 21: 568-573.
5. Hoey ET, Mankad K, Puppala S, Gopalan D, Sivananthan MU. MRI and CT appearances of cardiac tumours in adults. Clin Radiol 2009; 64: 1214-1230.

S. Susak[1], L. Velicki[1], I. Burazor[2], O. Adjic[3], N. Cemerlic-Adjic[1], R. Velicki[4]

[1]Institute of Cardiovascular Diseases of Vojvodina, Sremska Kamenica; [2]Oncology Institute of Vojvodina, Center for Imaging Diagnostics, Sremska Kamenica; [3] Clinical Center of Nis, Clinic of Cardiology, Nis; [4]Institute of Public Health of Vojvodina, Hygiene and Human Ecology Center, Novi Sad, Serbia

Correspondence to: Lazar Velicki, MD, MSc. E-mail: lvelicki@gmail.com