A multimodality imaging approach to multifocal intracardiac masses

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SOUHRN

Autoři popisují případ 75leté ženy vyšetřené pro synkopu, se sarkomem endometria v anamnéze. Echokardiografické vyšetření při příjmu odhalilo dva útvary v srdci (jeden v pravé síni o velikosti 32 × 38 mm, druhý v levé komoře o velikosti 42 × 32 mm), oba mobilní a působící dynamickou překážku trojcípé chlopně a výtokového traktu levé komory. Anamnéza pacientky vedla nejdříve k podezření na metastatické léze; proto bylo nutno v rámci diferenciální diagnózy provést multimodální vyšetření kardiovaskulárního systému zobrazovacími metodami. Endometriální stromální sarkom je vzácný nádor dělohy představující 0,2–1 % všech malignit postihujících dělohu. S endometriálním stromálním sarkomem metastazujícím intrakardiálně se lze setkat zřídkakdy. Ve většině případů se metastázy šíří z pravostranných srdečních oddílů; naše kazuistika tak popisuje vzácný případ postižení levé srdeční komory.

Keywords:
Mass
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ABSTRACT

The authors expose a case report of a 75-year-old woman admitted due to syncope and history of endometrial sarcoma. Echocardiography at hospital admission revealed two cardiac masses (in the right atrium [32×38 mm] and the other in the left ventricle [42×32 mm]), both with mobility and causing dynamic obstruction of the tricuspid valve and left ventricular outflow tract. Metastatic lesions were promptly suspected, considering the previous history, and an approach based on multimodality cardiovascular imaging was performed for differential diagnosis. Endometrial stromal sarcomas are rare tumors of the uterus corresponding to 0.2–1% of all uterine malignancies. Intracardiac metastasis from endometrial stromal sarcoma is a rare finding. The majority of reported metastasis is to the right side of the heart, being this case report a rare case of left chamber involvement.

Introduction

Endometrial stromal sarcomas are rare tumors of the uterus corresponding to 0.2% to 1% of all uterine malignancies.[1] Intracardiac metastasis from endometrial stromal sarcoma is a rare finding and the majority of reported metastasis are to the right side of the heart with direct invasion of the inferior vena cava.[2]

Case description

A 75-year-old woman was admitted to the emergency department due to tiredness and a history of syncope. She denied chest pain, dyspnea, lower limb edema or previous episodes of syncope.

Relevant past medical history included arterial hypertension, dyslipidemia, and a history of high-grade endometrial stromal sarcoma, treated with total hysterectomy and adjuvant chemotherapy one year earlier. Since then, the patient has been considered in remission. Chronic medication consisted of atorvastatin and lisinopril. The patient denied alcohol, drugs, or tobacco abuse.

Physical examination revealed tachycardia (105 b.p.m), normal blood pressure, normal cardiopulmonary auscultation, and no signs of hypoperfusion or hypervolemia.

Transthoracic echocardiography was performed at admission, revealing two cardiac masses, one in the right

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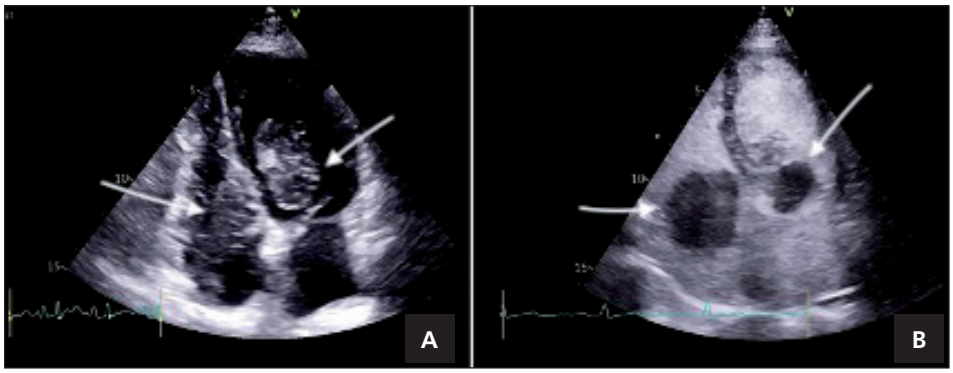

Fig. 1 – Transthoracic echocardiography revealed two cardiac masses (white arrows): right atrium (32×38 mm) and left ventricle (42×32 mm), both with mobility and causing dynamic obstruction of the tricuspid valve and left ventricular outflow tract (A). Contrast echocardiography revealed hyper-enhancement of these masses with contrast (B, white arrows).

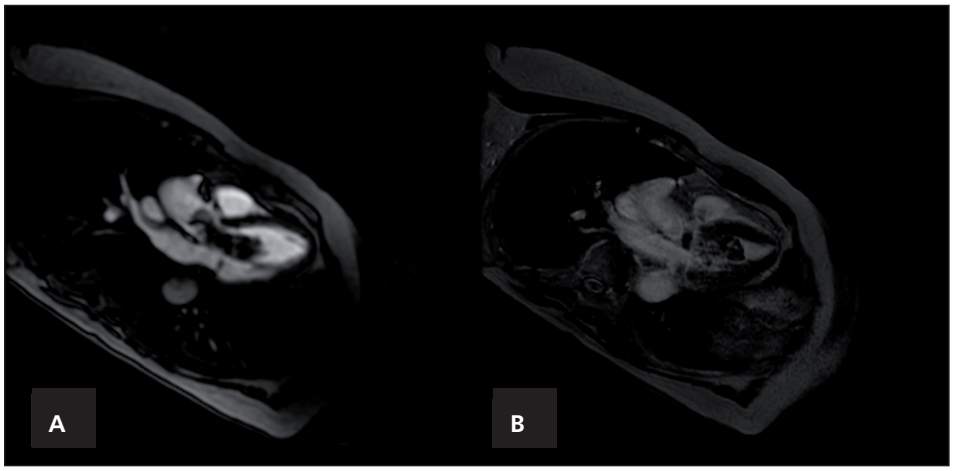

Fig. 2 – Cardiovascular magnetic resonance with first-pass perfusion and late gadolinium enhancement demonstrating two irregular masses, showing evidence of scarce perfusion and heterogenous contrast enhancement (A, B).

atrium (32×38 mm) and the other in the left ventricle (42×32 mm), both with mobility and causing dynamic obstruction of the tricuspid valve and left ventricular outflow tract, respectively (Fig. 1A). Contrast echocardiography revealed hyper-enhancement of these masses with contrast, raising the suspicion of vascularization (Fig. 1B).

Cardiovascular magnetic resonance with first-pass perfusion and late gadolinium enhancement demonstrated two irregular masses, showing evidence of scarce perfusion and heterogenous contrast enhancement, more compatible with neoplasm, raising the suspicion of metastatic masses, having in mind the previous history (Figs 2A and 2B).

Contrast-enhanced CT revealed two hypodense and irregular cardiac masses, one on the right atrium (45×40 mm) and the other on the left ventricle (45×28 mm), in close relation with the interventricular septum, with mild and progressive contrast enhancement in late sequence acquisitions, suggesting cardiac neoplasm.

No signs of local relapse of the endometrial sarcoma or extracardiac masses were found. Positron emission tomography (PET) using fluorodeoxyglucose (18F-FDG) revealed that these two cardiac masses were hypermetabolic, with anatomic and functional characteristics suggestive of active secondary lesions (Fig. 3B).

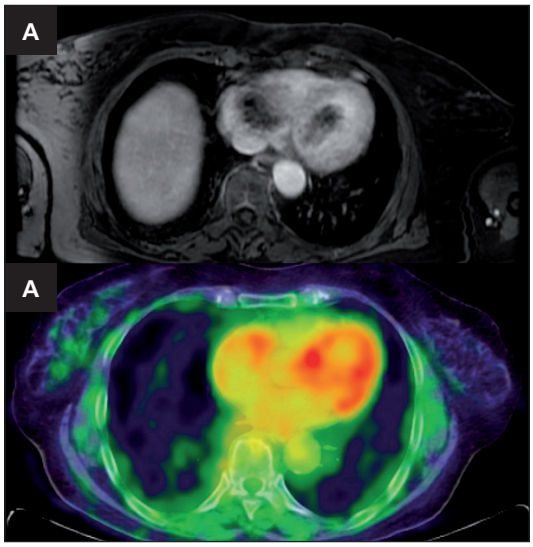

Fig. 3 – Contrast-enhanced CT revealing two hypodense and irregular cardiac masses, one on the right atrium (45×40 mm) and the other on the left ventricle (45×28 mm), in close relation with the interventricular septum, with mild and progressive contrast enhancement in late sequence acquisitions (A). Positron emission tomography (PET) using fluorodeoxyglucose (18F-FDG) revealing two hypermetabolic cardiac masses (B).

The case was presented to the cardiac surgery team, but the invasive intervention was denied due to high risk of complications. Posteriorly, the patient was referred to cardiac biopsy for histologic characterization. Before the procedure, however, the patient suffered cardiopulmonary arrest and died 40 days after hospital admission. Permission for an autopsy was not granted at the time of death. Final diagnosis was a presumptive diagnosis of cardiac metastasis of endometrial stromal sarcoma.

Conclusion

This case report presents a multifocal cardiac metastasis, with involvement of left cardiac chambers. Cardiac metastasis of uterine sarcoma cancer with antemortem diagnosis is an extremely rare finding.[3] Cardiac metastasis from this rare neoplasm usually occurs in the right chambers, with few reports in the literature of left chambers involvement.[2] A treatment strategy for this situation has not been standardized thus far, and the prognosis is dreadful.[3,4] Although multimodality imaging can help in mass characterization, histological diagnosis is needed to initiate specific treatment. Standardizing the approach for the treatment of cardiac masses and creating protocols between healthcare facilities can lead to a more efficient diagnosis and earlier treatment.

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