CASE REPORTS

LEFT ATRIAL MYXOMA INFECTED WITH *FUSOBACTERIUM NUCLEATUM*

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Abstract

Cardiac myxomas are the most common primary cardiac tumours in adults. Clinical presentation is variable, with few cases of infected myxomas reported in the literature. We describe a rare case of a 63-year-old patient who presented with splenic abscesses and a left atrial mass suggestive of emboligen myxoma. The patient underwent a successful emergency surgical excision of the atrial mass followed by splenectomy. Blood cultures were positive for Fusobacterium nucleatum, whereas the histopathological examination of the excised mass confirmed the presence of a myxoma with a marked inflammatory infiltrate. All these findings allowed us to confirm the diagnosis of definite infected myxoma. Some aspects related to the aetiology, diagnosis and management of this entity are discussed.

Keywords: *cardiac myxoma, endocarditis, tumor, septic emboli, splenic abscess*

CASE REPORT

Myxomas are the most common primary cardiac tumours in adults. They derive from multipotential mesenchymal cells located within the endocardium. Clinical presentation frequently includes constitutional symptoms such as fever, anaemia, and elevation of serum inflammatory markers[1]; however, myxomas rarely become infected[2-5].

We describe a rare case of a 63-year-old patient who presented with splenic abscesses secondary to septic emboli from left atrial myxoma infected with Fusobacterium nucleatum.

CLINICAL CASE

A 63-year-old male patient presented to Emergency Department with a 2-weeks history of high temperatures, up to of 39.5ºC, with nocturnal worsening. He also complained of sweating, epigastric discomfort and weight loss of 2 kg during the previous two weeks.

The patient had a history of type 2 diabetes mellitus and arterial hypertension. He had no other cardiovascular risk factors or any other clinical conditions.

On admission his physical examination was unremarkable and his temperature was 38°C.

Blood laboratory tests showed a white cell count 14.11x103/μL (neutrophils 92.5%, lymphocytes 4.2%, monocytes 1.9%); hemoglobin 13.1 g/dL; platelets 312x103 /μL; glucose 123 mg/dL; serum creatinine 1.57 mg/dL; total bilirubin 1.8 mg/dL; indirect bilirubin 1.2 mg/dL; C-reactive protein 17.92 mg/dL and procalcitonin 8.61 ng/mL. In his blood smear 9% of staffs and 1% of metamyelocytes were detected.

Peripheral blood cultures were withdrawn, and empirical antibiotic therapy was initiated. Bedside abdominal ultrasound was initially requested to assess the biliary tract as a potential cause of abdominal discomfort, raised bilirubin and fever. Several hypoechoic lesions in the spleen, the largest of which was 10 cm in diameter, were observed, raising

Table 1 **Criteria for the diagnosis of infected atrial myxoma according to Revankar et al[4].**

Definite infected cardiac myxoma
1. Documented myxoma by pathology and
2a) Microorganisms seen on pathology or
2b) Positive blood cultures and inflammation on pathology
Probable infected cardiac myxoma
1. Documented myxoma by pathology and
2. Positive blood cultures or inflammation on pathology
Possible infected cardiac myxoma
1. Characteristic appearance by transthoracic or transesophageal echocardiography and
2. Positive blood cultures

the suspicion of multiple splenic abscesses. Subsequently, a computed tomography (CT) scan of the abdomen confirmed the presence of multiple splenic abscesses with inflammatory changes extending into the perisplenic fatty tissue.

Transthoracic, followed by transesophageal, echocardiography was obtained to exclude a possible cardiac origin for septic emboli, and confirmed the presence of a large heterogenous left atrial mass, with approximately 55x23x21 mm attached to the interatrial septum (figure 1).

The patient underwent an urgent surgical procedure for the excision of the intra-cardiac lesion to minimize the risk of any further embolic events. The surgery was uneventful, and the patient did not develop any significant complications in the postoperative period.

Pathological examination of the cardiac mass confirmed the diagnosis of myxoma with wide-spread inflammatory changes and abundant polymorphonuclear leukocytes infiltration, although no microorganisms were observed (figure 2). Serial blood cultures were positive for Fusobacterium nucleatum.

Three weeks later, the patient underwent an uneventful laparoscopic splenectomy. The pathological study of the spleen demonstrated the presence of abscessed cavities as well as organized thrombosis of the splenic artery with myxoid foci concordant with remains of emboli from cardiac myxoma. No microorganisms were observed. The postoperative course was satisfactory, and the patient completed a total of 6 weeks of antibiotic therapy.

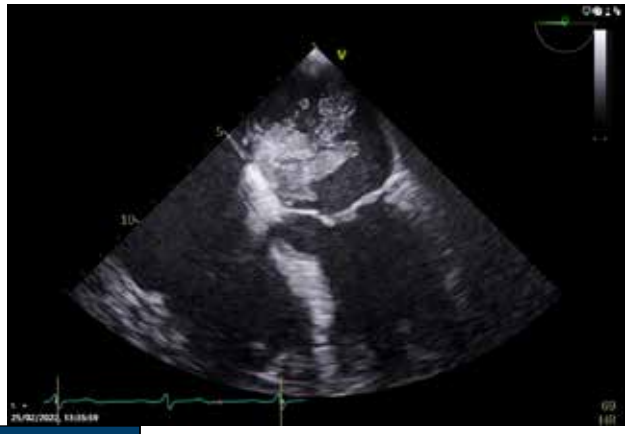

Figure 1 *Four-chamber apical mid-oesophageal plane transesophageal ultrasound. Left atrial mass of heterogeneous echogenicity and frayed edge are observed.*

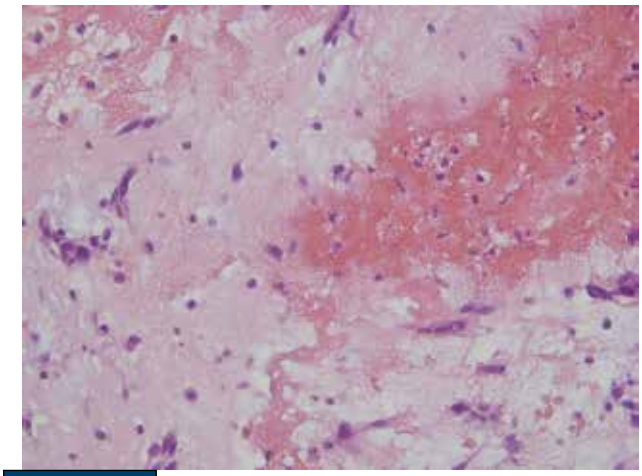

Figure 2 *Histological image. Fusiform cells of eosinophilic cytoplasm and rounded nucleus bathed in the myxoid stroma with inflammatory infiltrate and abundant polymorphonuclears are observed (hematoxylin-eosin x40).*

DISCUSSION

Cardiac myxomas are rare primary cardiac tumors with variable clinical presentation that ranges from general constitutional symptoms to intra-cardiac obstruction and systemic embolization[1]. Very rarely, myxomas are infected, with less than a hundred cases described in literature[2-6]. Es-

tablishing the diagnosis of infected myxoma can sometimes be challenging since the clinical picture can resemble valvular endocarditis or mural thrombus infection[3,4]. Therefore, it has been suggested to adopt the specific criteria that were initially proposed by Revankar et al to establish an accurate diagnosis of infected myxoma[4] (table 1). Factors that may increase the risk of myxoma infection include invasive dental procedures, systemic infections, invasive procedures, intra-venous drug use, and immune system disorders[2,5].

Infected myxomas predominantly present with high fever, weight loss, and peripheral embolism[2,4]. It has also been suggested that infection of myxomas may increase the peripheral embolic risk due to the presence of loosely adherent vegetations on the surface of the myxoma4. Peripheral embolism affects mainly the cerebral and splenic vascular beds2. The most frequent microorganisms responsible for myxoma infection are the genus Streptococcus followed by Staphylococcus[2-5].

Surgical excision associated with antibiotic treatment is the treatment of choice for infected cardiac myxomas since antibiotic therapy alone is not enough to resolve this disease[2]. The interval between diagnosis and surgery varies – between a few hours and several weeks – with an average of 14 days[2]. In our case, we decided to intervene urgently to prevent the repetition of new embolic episodes.

Currently, there is no consensus on the duration of antibiotic treatment; however, it is generally accepted to give antibiotics for a period of four weeks[2-6]. Overall, excellent outcomes have been reported after surgical resection and antibiotic therapy[2, 4]. Our patient remained clinically stable and asymptomatic at six-months follow up.

In conclusion, infected left atrial myxoma remains a challenging clinical entity with an associated risk of peripheral septic embolism. Extended course of antibiotic and surgical excision remain the gold standard therapeutic strategy.

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