Case study

Infected left atrial myxoma :case report

Abstract

37-year-old men presented to our service with a 1-month history of fever, weight loss o, night sweats, fatigue and general malaise. He was previously well with no significant medical or family history. He had no sequelae of endocarditis. He had low-grade pyrexia of 37.7°C, and ECG showed sinus tachycardia at 110 bpm. He had raised inflammatory markers and was started on broad spectrum antibiotics. Blood cultures grew *Streptococcus mitis.* transthoracic echocardiography revealed a large mobile mass attached to the interatrial septum, suspicious for atrial myxoma, flopping into the left ventricle but not causing left ventricular outflow tract obstruction, all valves looked normal in appearance.

He was treated with antibiotics for 2 weeks until inflammatory markers normalised. the patient was referred for cardiothoracic surgery where a large atrial myxoma (5 cm×4 cm) was excised just superior to the mitral valve. He had an unremarkable postoperative course and made a complete recovery.

Key word : endocarditis ,myxoma ,infection ,surgery,antibiotic

UNDER PEER REVIEW

Introduction:

Myxomas are the most common type of primary cardiac tumor in all age groups, accounting for one-third to one-half of all cases at postmortem and for about three-quarters of the tumors treated surgically. The clinical presentation is characterized by obstruction of the mitral valve, embolism, and constitutional symptoms, in addition to fever, anemia, or an elevated erythrocyte sedimentation rate; nevertheless, infection of these tumors is rare Infected myxomas are an extremely rare condition. Accurate diagnosis has consistently increased since the introduction of transthoracic echocardiography Definitive treatment with surgical resection results in favourable outcomes in the majority of cases, with outcomes in the majority of cases, with success rates of over 90% and disease-free survival greater than 80%.

Here, we report one case of infected myxoma caused by *Streptoccocus Metis* . Diagnosis and therapy are also discussed and compared with a review of the contemporary literature.

Case presentation

A 37-year-old men presented with fever up to 38 °C, dyspnoea, fatigue, malaise and weight loss. There was no history of a recent surgical or dental procedure or of intravenous drug abuse. His symptoms were interpreted to be caused by a common viral infection and she was treated for this. When he did not improve, he was admitted to our hospital. In the physical examination, he presented cachexia, a temperature of 38°C, and tachycardia with no murmurs. The analyses disclosed leukocytosis (16710 leukocytes/mL), an erythrocyte sedimentation rate (ESR) of 130 mm/h.

The echocardiography showed a vegetative mass with pedicle in the left atrium, 5.6x4.1 cm in size, of heterogeneous density and adhering to the interatrial septum, with prolapse in the left ventricle, with moderate regurgitation mitral but no significant mitral valve obstruction (Figure 1,2).

The diagnosis of infectiouis endocarditis on myxoma was suspected (Table), empirical antibiotic therapy with C3G and gentamicin was started and blood was drawn for cultures, which were positive for *Streptococcus Metis*. The patient was transferred to cardiothoracic surgery. At operation the left

atrium was explored and a pedunculated gelatinous mass attached to the atrial septum was excised (Fig. 3). Post operatively his temperature quickly returned to normal and the patient made an uneventful recovery with no regurgitation mitral in the control echocardiogtaphy. He was discharged 10 days after surgery.

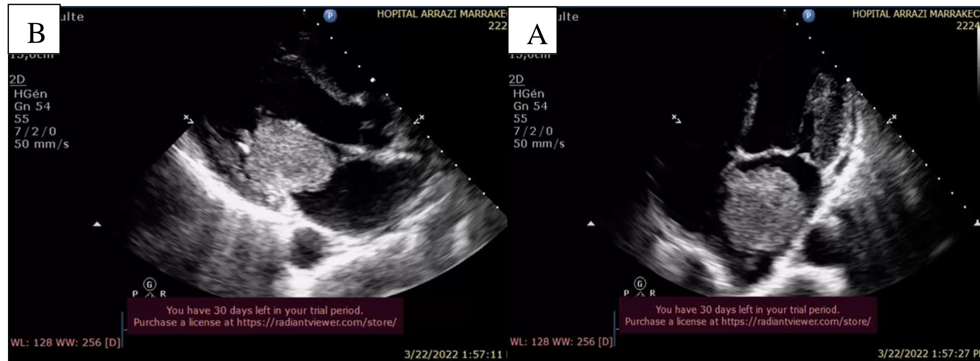

Figure 1: Echocardiography: mass with pedicle, of heterogeneous density and joined to the interatrial septum (A). The mass is adhering to the interatrial septum and has prolapsed through the mitral valve (B).

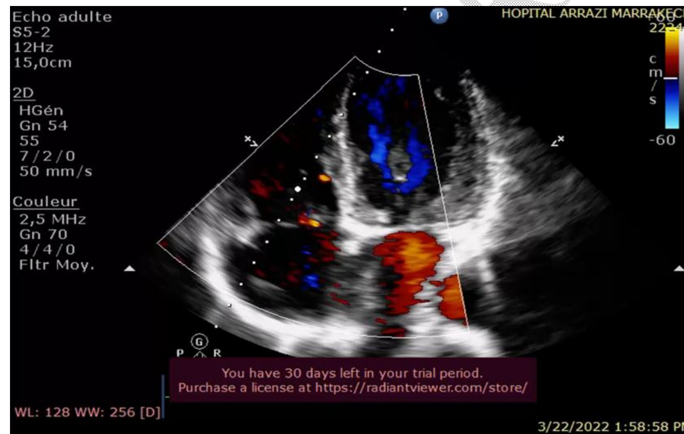

Figure 2 :Moderate mitral regurgitation caused by left atrium myxoma

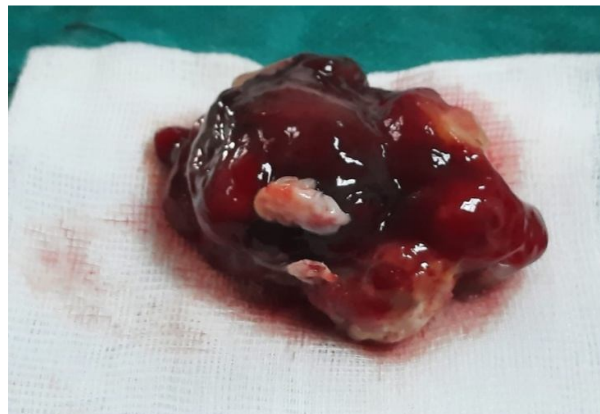

Figure 3 : Cardiac myxoma consisting of friable, gelatinous tissue, with a distinct mucoid appearance

UNDER PEER REVIEW

Discussion :

Myxomas are the most common of all primary heart tumors. The majority occurs in the atria (75% left atrium, 20% right atrium) [1], Very rarely, a myxoma can become infected [1-4], resulting in a clinical picture indistinguishable from an infective endocarditis. Criteria have been proposed to aid in the diagnosis of infected myxoma (table).

TABLE. Criteria for the Diagnosis of Infected Atrial Myxoma

Definitive	1. Myxoma documented by histology, and 2.a. Microorganisms observed in the sample, or 2.b. Positive blood cultures and evidence of inflammation in the sample
Probable	1. Myxoma documented by histology, and 2. Positive blood cultures and evidence of inflammation in the sample
Possible	1. Characteristic appearance on transthoracic or transesophageal echocardiography, and 2. Positive blood cultures

Taken from Horstkotte et al.[8]

Although cardiac myxomas often present with symptoms suggestive of infective endocarditis, they rarely appear infected, 51 clinically diagnosed cases of infected left atrial myxoma have been reported in the literature [2-18], 45% presenting with a risk factor that would have could contribute to the infection. In the majority of cases, the microorganisms involved were Streptococcus viridans (44%) and Staphylococcus aureus (15%) [12], a microbiological spectrum similar to that of native valvular endocarditis. Bacteremia does not prove that the myxoma is infected, as there have been reports of positive blood cultures while the tumors show no inflammation or infection.

Clinical symptoms and signs of infected myxoma have no specific manifestations, which makes it difficult to diagnose the disease. On physical examination, our patient was febrile like the majority of other cases reported in the literature (94%, 48 out of 51 patients). However, fever is common in uninfected myxomas. Auscultation of our patient's heart failed to demonstrate many of the signs commonly attributed to atrial myxoma. They can cause outflow obstruction similar to that caused by subaortic or sub-pulmonary stenosis. Symptoms and signs of myxoma can be sudden.

UNDER PEER REVIEW

The differential diagnosis of infected myxoma mainly includes uninfected myxoma, since fever may appear in the absence of infection, as well as mural endocarditis and infected intracardiac thrombus.

In our case, there was no embolic evidence, although embolic complications were reported in 43% of cases in the literature (22 of 51 patients). However, it is widely recognized that the complication of embolization of uninfected atrial myxoma itself is very common; nevertheless, once infected, the incidence of cerebral and systemic embolization of infected atrial myxoma is much higher (88% of cases) than that of uninfected myxoma (33% of cases) or uncomplicated endocarditis (40% of cases). cases), because it is hypothesized that these vegetations are particularly unstable.On this point, Revankar et al [13] reviewed several case series of uninfected myxoma in order to compare the clinical results with cases of infected myxoma. The authors observed that embolic events attributable to infected myxoma were not significantly higher than those from uninfected myxoma (45% versus 33%)[13]. However, the rate of embolic complications with uninfected myxoma reported in the literature is highly variable, ranging from 20 to 75%.

Furthermore, the advent of echocardiography has revolutionized the diagnostic process for infected myxoma [6, 14]. Echocardiography has become the diagnostic tool of choice for evaluating the patient suspected of having an infected myxoma. Of 51 previously reported cases, 43 were diagnosed by echocardiography. However, thus Tunick et al. noted the presence of a finger-like structure on the surface of a myxoma, suggesting the presence of infected myxoma [14].Recently, Puvaneswary and Thomson [15] observed that MRI showed similar finger-like projections or threadlike appearance of the myxoma surface, which was best demonstrated on gradient and gadolinium-enhanced cine-echo images.

Our patient was treated with combined therapy, consisting of surgical management and antibiotic therapy. The literature review showed that surgical excision was performed in 44 of the 51 patients (86% of cases). For antibiotic therapy, there is some tendency to maintain the standard antibiotic

UNDER PEER REVIEW

regimen for endocarditis, although patients treated for less than two weeks do not seem to have more complications [16].

Surgery usually resolves the condition but should be done early, operative mortality is low. There is some tendency to maintain the standard antibiotic regimen for endocarditis [17]. although patients treated for less than two weeks do not seem to experience more complications [18].

Conclusion :

Infected myxoma is rare, the clinical presentation of an infected myxoma can be similar to an uninfected myxoma, that why blood cultures should be taken whenever a patient with myxoma presents with fever, and a Echocardiography should be performed in patients with fever of unknown origin when initial techniques are inconclusive, to elucidate lesions such as large vegetation or myxoma, both of which may require urgent surgery.

UNDER PEER REVIEW

Bibliography:

[*1] Reyne.n, K..Cardiac myxomas. N Engl J Med, 333 (1995), pp. 1610-7*

[2] ten Berg JM, Elbers HRJ, Defauw JJAM, Plokker HWT. Endocarditis on a left atrial myxoma. Eur Heart J 1992;13:1592-3.4

[3] Revankar SG, Clark RA. Infected cardiac myxoma: case report and literature review. Medicine 1998;77:337-44.5

[4]Vogt PR, Jenni R, Turina MI. Infected left atrial myxoma with concomitant mitral valve endocarditis. Eur J Cardio-thorac Surg 1996 10:71-3.6.

[5] Whitman MS, Rovito MA, Klions D, Tunkel AR. Infectedatrial myxoma: case report and review. Clin Infect Dis 1994

[6] Malloch CL, Abbott JA, Rapaport E. Left atrial myxoma with bacteremia. Am J Cardiol 1970; 25: 353-8.

[7] Graham HV, von Hartitzsh B, Medina JR. Infected atrial myxoma. Am J Cardiol 1976; 25: 658-61.

[8] Rogers EW, Weyman AE, Noble RJ, Bruins SC. Left atrial myxoma infected with histoplasma capsulatum. Am J Med 1978; 64: 683-90.

[9] Rajpal RS, Leibsohn JA, Liekweg WG el at. Infected left atrial myxoma with bacteremia simulating infective endocarditis. Arch Intern Med 1979; 139: 1176-8.

[10] Quinn TJ, Codini MA, Harris AA. Infected cardiac myxoma. Am J Cardiol 1984; 53: 381-2.

[11] Frandsen TM, Prichard JG, Store SO Streptococcus viridans bacteremia associated with atnal myxoma. Am Heart J 1985; 110: 180-1.

[12] García-Quintana A, et al. Infected Left Atrial Myxoma ,2005

[13] Revankar S.G., Clark R.A. Infected cardiac myxo- ma. Case report and literature review. Medicine. 77, 337- 344, 1998.

[14] Tunick P.A., Fox A.C., Culliford A., Levy R., Kronzon I. The echocardiographic recognition of an a- trial myxoma vegetation. Am. Heart J. 119, 679-680, 1990.

[15] Puvaneswary M., Thomson D. Magnetic resonan- ce imaging features of an infected right atrial myxoma. Australas. Radiol. 45, 501-503, 2001.

[16] Sebastiano Leone, Giuseppina dell'Aquila Sergio Giglio[1], Mario Magliocca[1], Patrizia Maio[1], Francesco Saverio. Infected atrial myxoma: case report and literature review ,Italy . Le Infezioni in Medicina, n. 4, 256-261, 2007

[17] Horstkotte D, Follath F, Gutschik E, Lengyel M, Oto A, Pavie A, et al.. Guía de Práctica Clínica sobre prevención, diagnóstico y tratamiento de la endocarditis infecciosa.. Rev Esp Cardiol, 57 (2004), pp. 952-62

[18] Dekkers P, Elbers HR, Morshuis WJ, Jaarsma W.. Infected left atrial myxoma. J Am Soc Echocardiogr, 14 (2001), pp. 644-5

UNDER PEER REVIEW

UNDER PEER REVIEW