Postgraduate Medical Journal (1989) **65**, 671 – 673

Infected atrial myxoma

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Summary: A patient is reported in whom a left atrial myxoma was found to be infected with *Staphylococcus aureus*. The clinical presentation, diagnosis and treatment are described and discussed.

Introduction

Although atrial myxomas often present with constitutional symptoms simulating infective endocarditis, they are rarely actually infected. We report a patient with an infected atrial myxoma who was treated successfully by antibiotic therapy and surgical excision of the tumour.

Case report

A 52 year old man presented to a general hospital with a 3-week history of fever and malaise. Chest X-ray revealed mottlings at the lung apices. He was given antituberculous drugs and symptoms gradually resolved.

Two months later, however, fever recurred. In addition, he had right hemiparesis of mild severity. A heavy growth of *Staphylococcus aureus* was isolated from 3 consecutive blood cultures. It was sensitive to cloxacillin and gentamicin. He was then referred to our unit for further management.

On admission, he was pale and lethargic with a temperature of 38°C. The pulse rate was 90 beats/minute and blood pressure 140/90 mmHg. The first heart sound was loud and a diastolic rumble could be heard at the cardiac apex. Right hemiparesis of mild severity was also detected.

The haemoglobin was 8.9 g/dl and the leucocyte count was 9.0×10^9/l with 80% polymorphs. The erythrocyte sedimentation rate was 113 mm/h and serum total globulin measured 52 g/l. Urea and electrolytes were essentially normal. Chest X-ray and electrocardiography were normal. Computerized axial tomographic scan of the brain showed a small left parietal infarct. Cross-sectional echocardiography revealed a lobulated mass in the left atrium (Figure 1). It was attached to the interatrial septum and prolapsed into the left ventricle when the mitral valve opened in diastole. The features were consistent with an atrial myxoma.

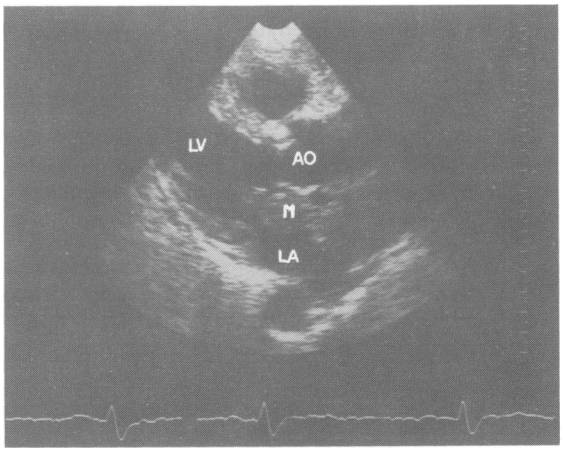

Figure 1 Cross-sectional echocardiography in parasternal long axis view showing the presence of a myxoma (M) in the left atrium (LA). LV, left ventricle; AO, aorta.

He was given cloxacillin (12 g daily) and gentamicin (150 mg daily) intravenously. Fever abated and during the 4th week of antibiotic therapy, the atrial myxoma was surgically excised. On gross examination, the tumour was not obviously infected. At histology, typical polygonal and stellate myxoma cells embedded in a mucinous stroma but no bacteria were seen. Scattered throughout the tumour, however, was a polymorphonuclear infiltrate indicating that it was the seat of an infective process (Figure 2). Culture of the tumour was negative.

Postoperatively, he continued to improve and received antibiotic therapy for a total of 6 weeks. Subsequently, he had an uneventful recovery.

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Accepted: 9 March 1989

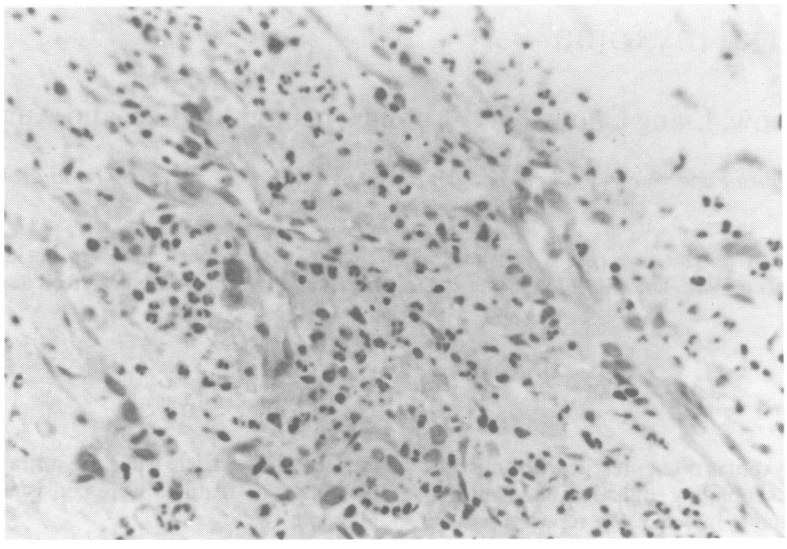

Figure 2 Photomicrograph of section of the infected atrial myxoma (haematoxylin and eosin stain × 240). Polymorphonuclear infiltration of the tumour is evident.

Discussion

Infected atrial myxomas are rare, with only 16 previously reported cases in English language publications (Table I).[1-16] The present reported case represents the 17th one. Of these, the majority were located in the left atrium, with only 3 in the right atrium.

Clinically, it is difficult or almost impossible to distinguish between infected and non-infected atrial

Table I Infected atrial myxomas

Reference	*Age & Sex*	*Organism(s)*	*Site*	*Diagnosis*	*Surgery*	*Outcome*
1	39 M	*Staphylococcus aureus and Candida parapsilosis*	LA	Blood culture, autopsy	–	Dead
2	48 M	*Streptococcus faecalis*	LA	Blood culture, autopsy	–	Dead
3	50 F	*Streptococcus viridans and Staphylococcus albus*	LA	Blood culture, Angio	+	Alive
4	15 M	Gamma haemolytic streptococci	LA	Blood culture, Echo	+	Alive
5	17 F	*Staphylococcus aureus*	LA	Blood culture, Angio	+	Dead
6	48 F	*Staphylococcus aureus*	LA	Blood culture, Echo	–	Dead
7	48 F	*Histoplasma capsulatum*	LA	Echo	+	Alive
8	29 M	*Pasteurella multocida*	LA	Blood culture, Echo	+	Alive
9	60 M	Veillonella	RA	Blood culture, Echo	+	Alive
10	58 M	*Streptococcus mutans*	LA	Blood culture, Angio, Echo	+	Alive
11	36 M	*Candida tropicalis*	LA	Blood culture, Angio, Echo	+	Alive
12	51 F	*Streptococcus viridans*	LA	Blood culture, Echo	–	Alive
13	68 F	*Streptococcus faecalis*	LA	Blood culture, Echo	+	Alive
14	59 F	Dysgonic fermenter	TV	Echo	+	Dead
15	31 F	*Streptococcus MG intermedius*	LA	Blood culture, Echo	+	Alive
16	16 M	*Staphylococcus aureus*	RA	Blood culture, Echo	–	Alive
Present case	52 M	*Staphylococcus aureus*	LA	Blood culture, Echo	+	Alive

LA, left atrium; RA, right atrium; TV, tricuspid valve; Angio, angiography; Echo, echocardiography

myxomas. Both may present with severe constitutional symptoms and cause considerable morbidity or even mortality from atrio-ventricular valve dysfunction. Embolic phenomena, however, appear noticeably commoner in patients with infected atrial myxomas. Nearly all reported cases had complications from systemic or pulmonary emboli. Presumably, the superimposed infective process had rendered the myxoma even more friable and hence be predisposed to embolization.

A diagnosis of infected atrial myxoma is made when one can isolate the offending organism and demonstrate the presence of an atrial myxoma which, naturally, provides a nidus for infection. Since the simultaneous occurrence of endocarditis and an uninfected atrial myxoma has been reported,[17] definitive diagnosis should also be confirmed by careful histological and bacteriological examination of the excised tumours. Cross-sectional echocardiography or angiography is useful in locating the tumour but gives no clues to diagnosing ongoing infection, for which isolation of the offending organism is necessary. This can often be accomplished by sampling blood for cultures, although in occasional cases[7,9] they have been negative. At operation, microabscesses sometimes can be seen on the surface of the myxoma, but organisms may not be detected or cultured since most patients have usually been well into their therapeutic course of antibiotic therapy. In such circumstances, the unusual presence of polymorphonuclear infiltrates in the myxoma on histology, as in our patient and other reported cases,[16] provides useful evidence for infection and helps to support the diagnosis retrospectively. Of the 16 reported cases, unfortunately, the diagnosis of infected atrial myxoma in 2 patients was only made at autopsy.[2]

Treatment of infected atrial myxoma consists of appropriate antibiotic therapy and surgical excision of the tumour. In the 16 reported cases, 13 infections were purely bacterial, 2 were fungal, and 1 was mixed. A total of 12 patients survived, all but one having had surgery. The one without surgery was lucky enough to have survived because of spontaneous cure following a non-fatal tumour embolus to the aorta.[12] No patient would otherwise survive without surgery. Although it is difficult to draw conclusions based on this small number of cases, it is likely that surgical excision of the tumour early in the course of treatment is important to prevent potentially fatal tumour emboli.

Moreover, the nidus of infection must be removed so as to avoid continuous seeding of the blood stream. Our patient underwent surgery at the 4th week of antibiotic therapy and had an uneventful recovery.

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