



SHORT COMMUNICATION

An unusual outcome of a right atrium wall abscess in an infant. A case report



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KEYWORDS

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Abstract Echocardiography is known as an accurate tool for the diagnosis of myocardial abscess (MA). Surgery resection is compulsory as therapy for this intracardiac mass. Though, we report the first case in an infant, of a right auricular MA without valvular involvement, diagnosed retrospectively in a occasion of a purulent pericarditis, leaving place spontaneously to a new cavity and displacing the tricuspid ring. Treatment is not codified and remains different depending on each case.

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1. Introduction

MA is commonly associated with valvular infective endocarditis. Nonvalvular mural abscesses are rare^{1,2} and mostly due to underlying disease processes such as thrombophlebitis, bronchiectasis and paralysis agents.³ Few cases of atrial wall abscesses have been reported in the literature, most of them were related to endocarditis by sepsis³ or intracardiac devices.⁴ One case of isolated left atrium abscess with purulent pericarditis was published.³ Our case report concerned the right atrium (RA) lateral wall and pericardial effusion was at the forefront.

2. Case report

A 2 years-old infant from a rural environment without any medical history, presented a cellulite of the left inferior member. At admission, he had fever, tachycardia, dyspnea and signs of acute right cardiac failure (jugular venous distension and pulsus paradoxus). The chest-X-ray showed cardiomegaly

but no pulmonary infiltrates or pleural effusion. Cultures of serial blood specimens grew *Staphylococcus aureus*. The echocardiography revealed a compressive and fibrinous pericardial effusion. Surgical drainage was practiced in emergency and vancomycin and aminoside antibiotics were administered with good evolution. In the fourth week of hospitalization, we noted the appearance of an edema and ascites syndrome. The diagnosis of constrictive chronic pericarditis was suspected and confirmed in the cardiac catheterization showing signs of an early diastole and dip and plateau pattern in Ventricular pressure tracing. Surprisingly, at echocardiographic control we discovered a new cavity in the external wall of the right atrium repressing the mural tricuspid valve to the apex. In addition, there was a distension of right cavities with paradoxical interventricular septum, pulmonary systolic pressure at 25 mmHg, mild tricuspid regurgitation and incompressible distension of the inferior vena cava. At the revisualization of the anterior echocardiography, we found that this new cavity corresponded to an hyperechogenic area beneath the tricuspid ring. This image matched with a myocardial abscess which probably fistulized to the RA and left this new cavity. A CMR-imaging confirmed the modification of the cardiac architecture showing three right cavities: a RA measuring 13 cm²

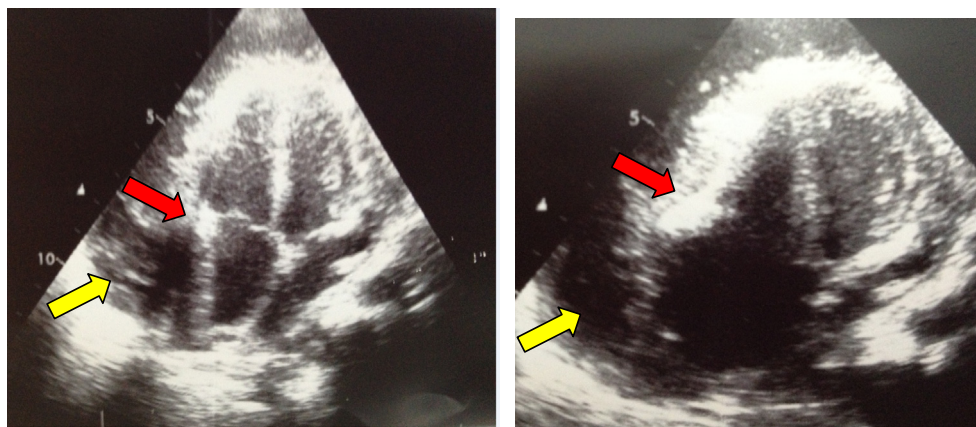
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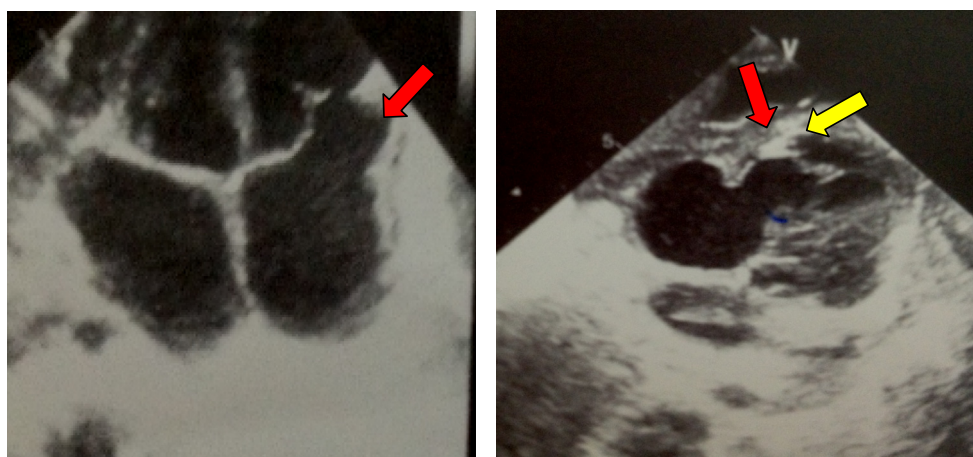
Figures 1 and 2 In the first echocardiography, pericardial effusion and RA MA beneath the tricuspid ring notice the normal leaflets of tricuspid valve.

and a supplementary cavity limited by tricuspid ring (6 cm^2) reducing the right ventricle area to 15 cm^2 . There were no abnormal signal abnormalities of myocardial wall. We prescribed anti-aggregant treatment (aspirin) in order to prevent thromboembolic complications, and pericardiocentesis was performed (see Figs. 1 and 2).

3. Discussion

There are two principle ways of heart abscess formation: by dissemination from a distant infectious focus or by contiguity from a process located in the heart itself.⁵ In fact, infective endocarditis has become the most common condition underlying MA and mural abscess without valvular involvement is very rare.^{1,2} The predilected sites are the valve ring area and the atrio-ventricular junction mainly because these area are fibrous and relatively avascular.³ Bacterial agents usually implicated are *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Escherichia coli*, *Klebsiella*, *Streptococcus viridans* and *Salmonella* species.⁶ This case represents, in our knowledge, the first report of a lone right atrium lateral wall abscess due

to *Staphylococcus sepsis* concomitant to suppurative pericardial effusion without valvular endocarditis. Previously reported cases of isolate MA were related to septic foci such as decubitus ulcer, infected burns and thrombophlebitis among patients with immunodeficiency.^{1,2} In our case, no history of infections has been reported and viral and immunologic serologies were negative. RA abscesses were described in the presence of intracardiac catheter or implantable defibrillator.^{4,7} Venous catheterization was not performed in this case. Moreover, no intracardiac anomalies predisposing the abscess formation have been noted. Although echocardiography is known to diagnose MA in most cases, clinical presentation was dominated by compressive pericardial effusion indicating an urgent drainage. The association to a purulent pericardial effusion was reported and could be explained by inoculation of the pericardium directly from the MA or by hematogenic bacteremia. We focalized on the tamponnade and MA was ignored. As a matter of fact, the treatment was surgical drainage and antibiotherapy. Constrictive pericarditis appeared unfortunately because of late diagnosis. Involution of the abscess spontaneously may be due to fistulization in RA cavity under antibiotics. Such evolution has been



Figures 3 and 4 The new cavity with tricuspid annulus displacement.

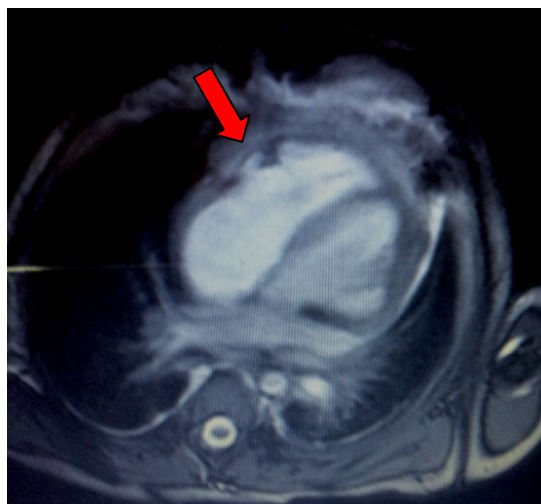


Figure 5 CMR-imaging of the right new cavity.

described in the left ventricle.⁸ The formation of a new cavity displacing the tricuspid ring was an unusual outcome of this infectious process, so that its management was difficult and subjected to many interrogations. Does this displacement lead to hemodynamic disturbances and arrhythmia? For medical treatment, anticoagulation is necessary? Is surgical resection recommended? No rhythmic troubles were registered, only a mild tricuspid regurgitation was noticed and the RA residual wall was thick. As a result, we decided to put the patient under antiaggregant treatment and pericardiocentesis was performed without resection of the cavity (see [Figs. 3 and 4](#)).

4. Conclusion

MA should be suspected in staphylococcus sepsis specially when associated with a suppurative pericardial effusion. Several complications may occur in this serious and life-threatening disease, and in this case RA external wall localization and a right new cavity miming an aneurysm were special (see [Fig. 5](#)).

Conflict of interest

No conflict of interest.

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