

# Une image inhabituelle de l'oreillette gauche

## An unusual image of left atrium

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### Résumé

Les masses cardiaques sont rares et apparaissent sous différents aspects, depuis les thrombi aux tumeurs. Le diagnostic repose sur l'imagerie cardiaque. Nous rapportons le cas d'un homme âgé de 54 ans ayant comme antécédent une insuffisance rénale chronique sous hémodialyse. Il était symptomatique de dyspnée avec un examen physique normal, son électrocardiogramme montrait un rythme sinusal régulier et l'échocardiographie transthoracique (ETT) et transoesophagienne (ETO) montrait une masse intra-auriculaire gauche partiellement calcifiée et multi-vésiculaire sans sténose mitrale suggérant initialement le diagnostic d'un kyste hydatique ou d'une tumeur primitive. L'IRM cardiaque a exclu ces diagnostics et a confirmé le diagnostic de thrombus auriculaire gauche. Le facteur de la thrombogenèse était inhabituel et lié à une calcification mitrale massive secondaire à une hyperparathyroïdie due à l'insuffisance rénale chronique.

### Mots-clés

masse ,oreillette gauche ,  
échographie

### Summary

Cardiac masses are rare and appear in different aspects from thrombi to tumors. The diagnosis is based on cardiac imaging. We report a case of a 54-year-old man with a past history of chronic renal failure on hemodialysis. He was symptomatic of dyspnea with a normal physical examination, his electrocardiogram showed a regular sinus rhythm and the transthoracic (TTE) and transesophageal (TEE) echocardiography showed a partially calcified and a multi-vesicular left intra-atrial mass without mitral stenosis suggesting initially the diagnosis of a hydatid cyst or a primary tumor. Cardiac MRI ruled out these diagnoses and confirmed the diagnosis of left atrial thrombus. thrombogenesis formation factor was unusual and related to massive mitral calcification secondary to hyperparathyroidism of chronic renal failure

### Keywords

mass, left atrium ,  
echography

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## INTRODUCTION

Echocardiography plays a key role in establishing the diagnosis of patients with intra-cardiac mass. The differentiation between tumors, thrombi, or other infectious disease is important because of the distinct treatment strategy. But it is often difficult to triage one from the other.

## CASE

A city origin 54-year-old man (no notion of hydatid contagion) with a past history of chronic renal failure, presented with dyspnea classified as NYHA-III for one month. The patient was hemodialyzed via a branchial fistula. Patient had chronic hypocalcemia and hyperphosphatemia due to secondary hyperparathyroidism and was waiting for parathyroid ablation surgery. He had no palpitations, no chest pain, no syncope, nor fever, and had no history of cardiac disease. There was no history of stroke or embolic event in the past.

Physical examination showed a regular rhythm rate at 100 beats/min; blood pressure of 140/85 mm Hg. His was afebrile and his cardiac auscultation did not reveal a cardiac murmur. There were no clinical signs of heart failure.

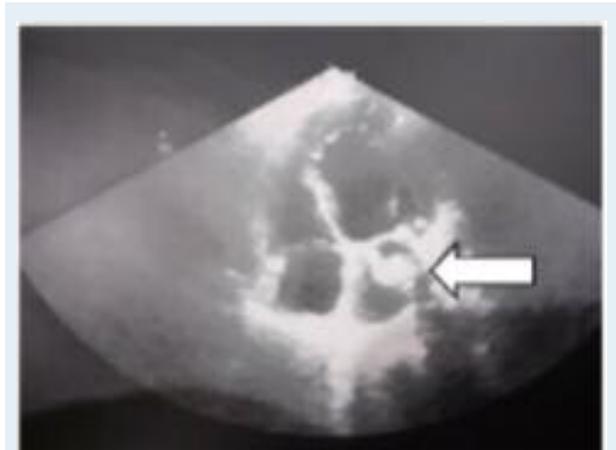
The electrocardiogram noted normal sinus rhythm.

On the chest x-ray our patient had only a dulling of the right pleural fornix.

Transthoracic echocardiography revealed a large, heterogenous, vesicular and partially calcified mass (5 cm in size) in the left atrium (LA), which was prolapsing to left atrium (fig 1). It was unclear whether the mass had any attachment to the interatrial septum

The mitral valve was calcified especially at the mitral annulus. The mean pressure gradient across the mitral valve on doppler was 4 mmHg. The left atrium and the left ventricle were not dilated and ejection fraction was about 60 %.

Transesophageal Echocardiography (TEE) revealed the same mass which seems to be not very mobile with a vesicular aspect and partially calcified, attached to the lateral wall of the atrium (fig 2,3). There was neither mass in the left auricle nor spontaneous contrast.



**Figure 1:** TTE: Apical four-chamber (A4C) view: heterogenous left atrium mass

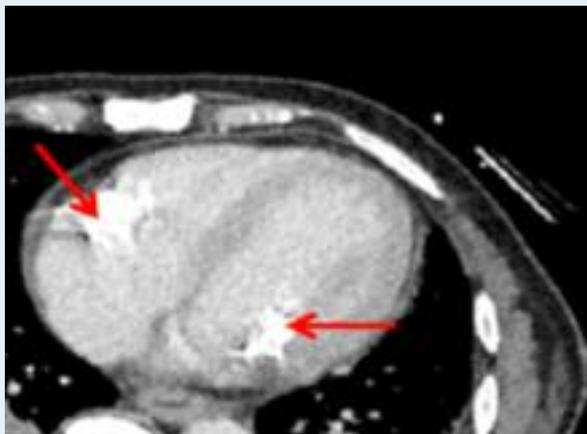


**Figure 2 :** TEE: prolapsing mass

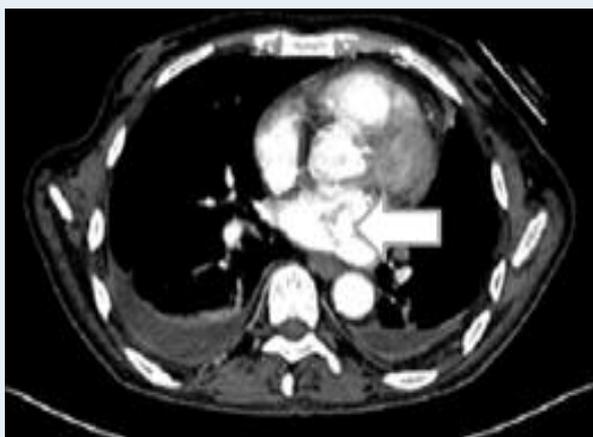


**Figure 3 :** TEE: vesicular and calcified mass

The diagnosis was either a myxoma or a hydatid cyst of the left atrium. The hydatid serology was negative. Further imaging by a CT scan showed the calcified mass, with extension towards the mitral and tricuspid annulus (fig 4,5).

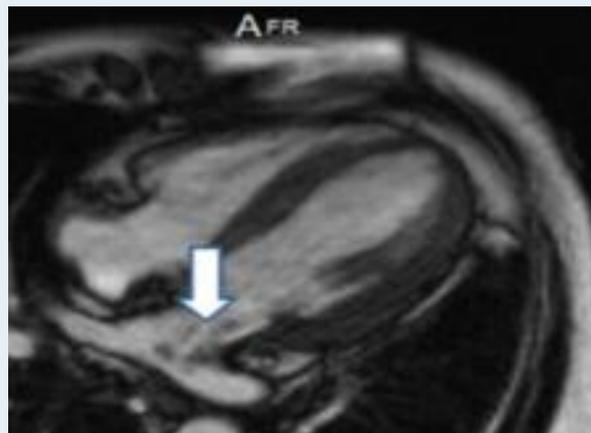


**Figure 4:** Cardiac CT: important annular calcifications



**Figure 5 :** cardiac CT: mediastinal window: left atrial mass

To better characterize the tumor an MRI was requested which showed either on first-pass perfusion or late gadolinium enhancement (LGE) images no evidence of enhancement because of the avascular nature of this mass which is in favor of a thrombus (fig 6).



**Figure 6:** MRI thrombus aspect

The diagnosis of a thrombus of the left atrium was established. The search for a factor favoring the thrombi formation was carried out: we supplemented with a rhythmic Holter to detect paroxysmal or subclinical atrial fibrillation and a thrombophilia assessment was done which were all negative.

Patient was put on anticoagulation with acenocoumarol. A clinical and biological monitoring were carried out

## DISCUSSION

The differential diagnosis for an intra-cavitary cardiac mass includes thrombus, myxoma, and non-myxomatous neoplasm [1,2]. Diagnosis is usually based on ultrasound, besides MRI was the gold standard tools to characterize the mass and to have high diagnostic accuracy to distinguish malignant from benign cardiac masses compared to echography [3].

In our case, it was the cardiac MRI that made it possible to diagnose this left atrial mass.

Thrombus is the most common intracardiac mass and accountable for thromboembolic events. therefore, identification and monitoring impact the patient care [4].

Cardiac-myxomas [5] are the most common benign primary tumors of the heart and generally found in the left atrium (LA) and account for 30-50% of all benign primary cardiac tumors [6]. Non myxomatous neoplasm

like Hydatid disease with isolated cardiac involvement is rare and occurs in only 0.02%-2% of cases [7].

Thrombus most commonly occurs in the left atrium, particularly in the left atrial appendage in patients with atrial fibrillation.

Most of the cardiac thrombi appear to be small, homogeneous, and immobile masses within the chambers [8].

In the present patient, features were consistent with unhabitual thrombus: large, heterogenous, which was prolapsing not mobile suggesting the diagnosis of a myxoma; In addition to that it was partially calcified which testifies to its chronicity, and vesicular which looks like a hydatid cyst.

Also, despite its bigness and its prolapsing movement, our patient had not any embolic accident

The probable predisposing factors for thrombus formation are mitral valve disease, non-valvular atrial fibrillation, severe LV dysfunction, and other causes of atrial contractile failure [9].

Thrombus formation in the presence of sinus rhythm is rare [9]. Any condition predisposing to low flow state can lead to its formation.

This case is interesting because our patient has no known predisposing factor as he was in sinus rhythm, he had no mitral stenosis.

Some authors [10,11] reported that, in chronic renal failure patients mitral, calcifications may be a rare cause of atrial thrombus even in the absence of valvular stenosis.

Similarly, Stein and Soble reported two patients with cerebral embolism and mitral annular calcifications (MAC) in whom TTE identified a mass, which appeared to be a thrombus, attached to the calcified portion of the mitral apparatus. They suggested that thrombus formation on top of MAC may be a pathophysiologic link between ischemic cerebral events and MAC[12].

Eicher et al. described 182 patients who presented with arterial thromboembolic events, 10 of whom (5.5%) had MAC without any other potential embolic source. In three cases (1.64%), TTE disclosed a large, pedunculated, vegetation-like mass, presumed to be a

thrombus, attached to the posterior part of a heavily calcified mitral annulus fibrosis [13].

In addition, Since the introduction of TTE and TEE, several reports of mobile components associated with MAC in patients with CVA cardiovascular accident (CVA) or peripheral emboli have been described. These imaging and echocardiographic reports further support the role of systemic emboli arising from MAC as a primary cause of CVA [14,15].

In our case thrombus formation is most likely due to the presence of these mitral calcifications.

## CONCLUSION

Our case highlights the superiority of MRI over ultrasound in characterizing masses and illustrates a rare aspect of a left intra-atrial thrombus with unusual both ultrasound features and thrombogenesis formation factor.

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