Le calcaire, quel enfer….

CIAO
CALC

L. Iacuzio

F. Levy

CENTRE CARDIO-THORACIQUE DE MONACO

- Ce mois-ci, on part sur la thématique des calcifications mitrales, suite à quelques publications sur le sujet qui peuvent vous servir au quotidien (et pas que pour nettoyer la salle de bain…)

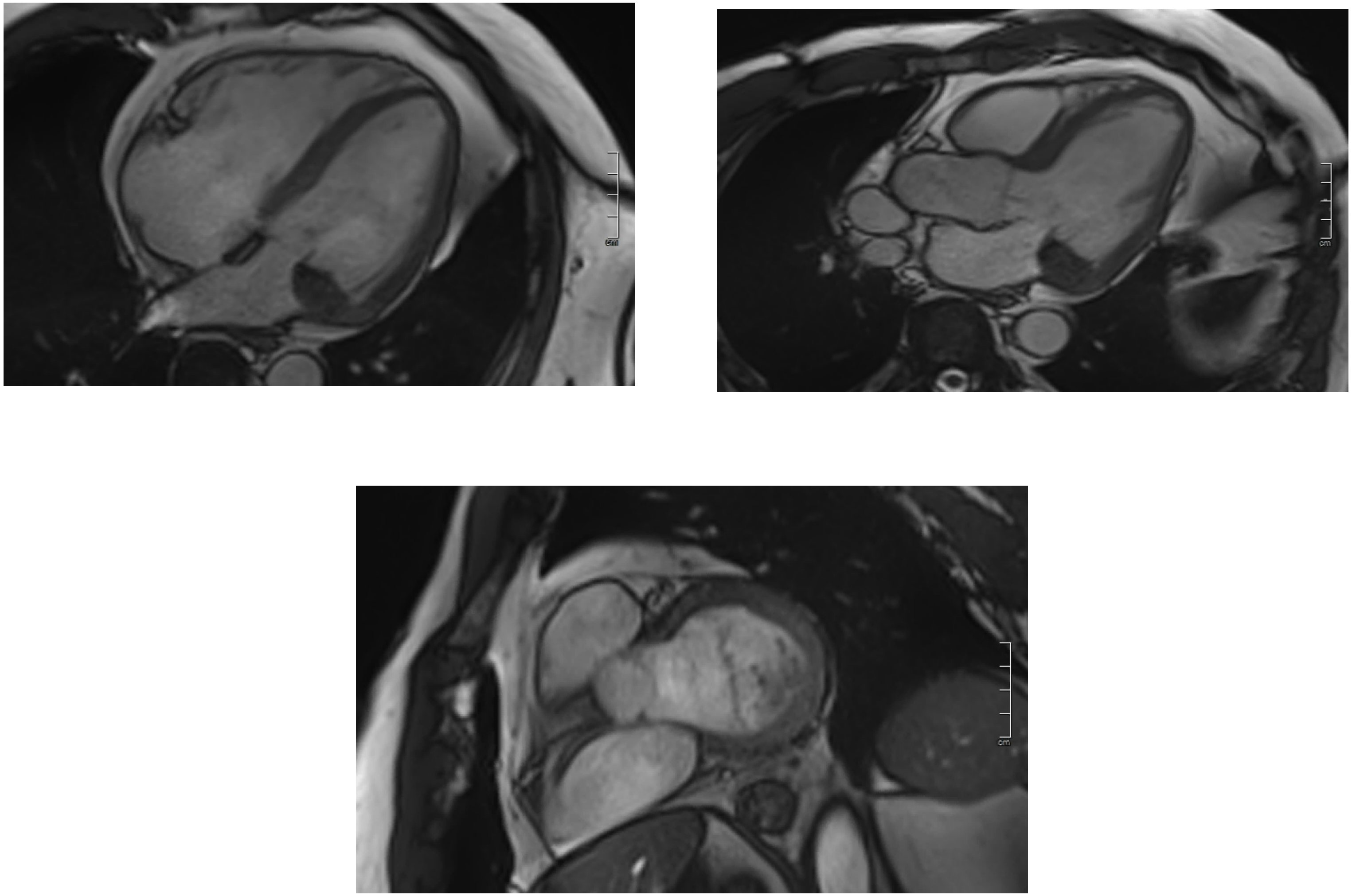
- Ces calcifications annulaires mitrales (MAC en anglais) sont actuellement mises en examen pour: AVC, endocardite et entrave à l'évaluation des pressions de remplissage.

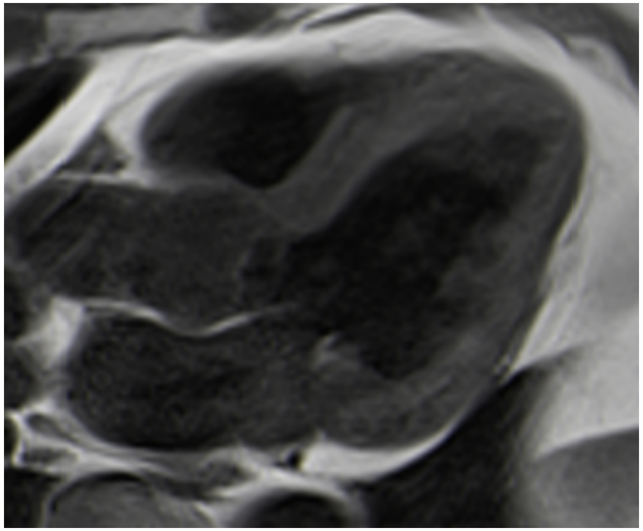
- Commençons par un cas clinique…

Homme, la soixantaine

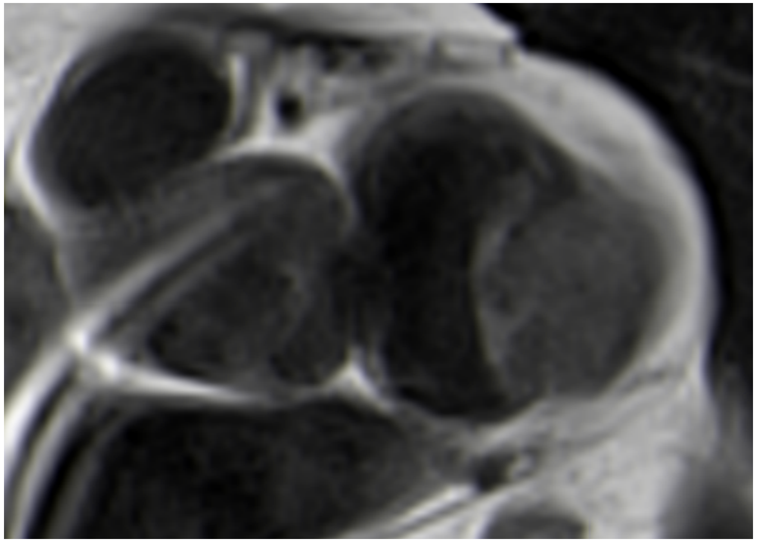
- découvert fortuite à l'ETT d'une masse hyperéchogène de structure hétérogène de contours lisses, peu mobile, de 35 x 24 mm, développée au niveau de la base d'implantation du feuillet mitral postérieur (P2), de découverte fortuite, chez un patient asymptomatique.
- absence de sténose mitrale, insuffisance minime associée.

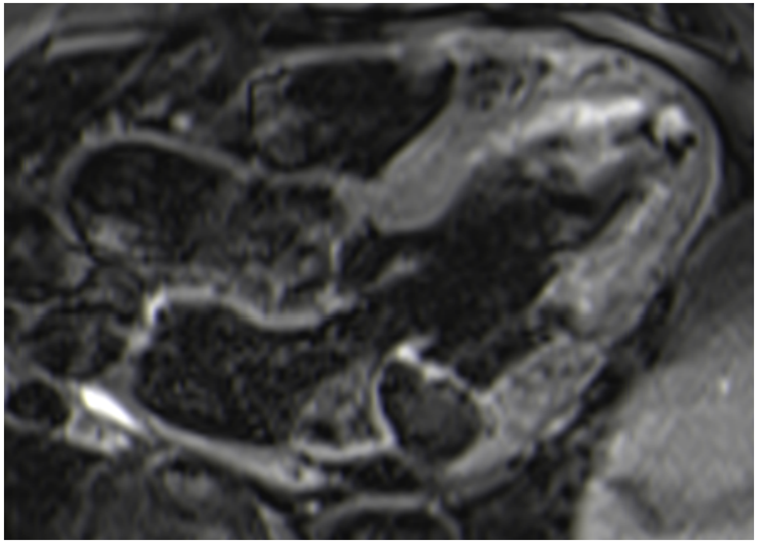
IRM



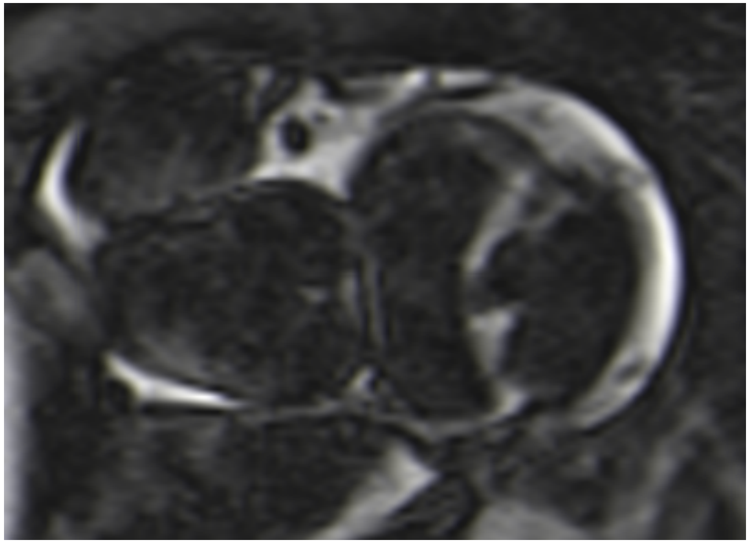


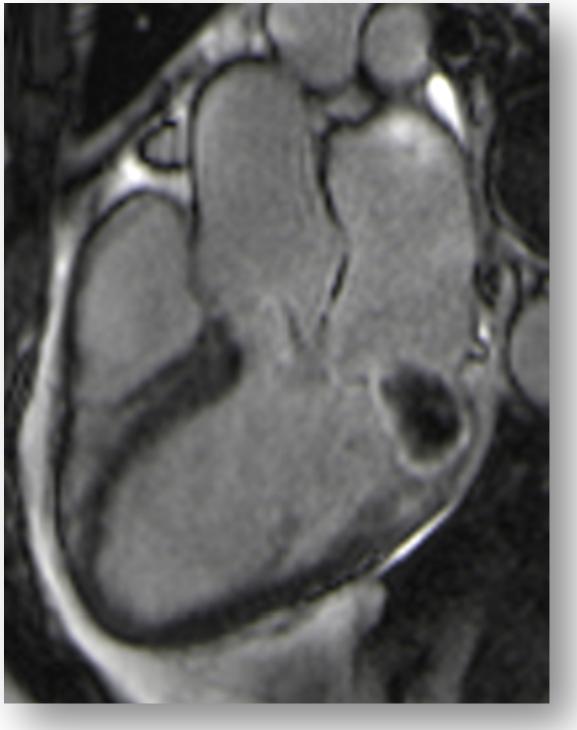
TSE T1



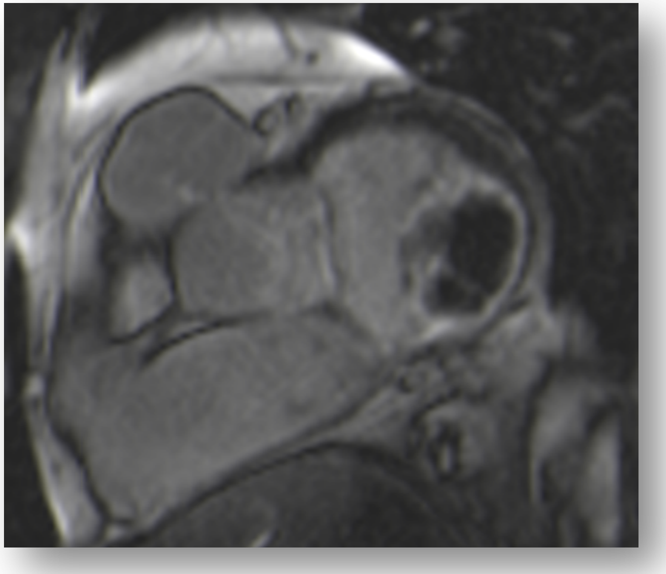


TIRM

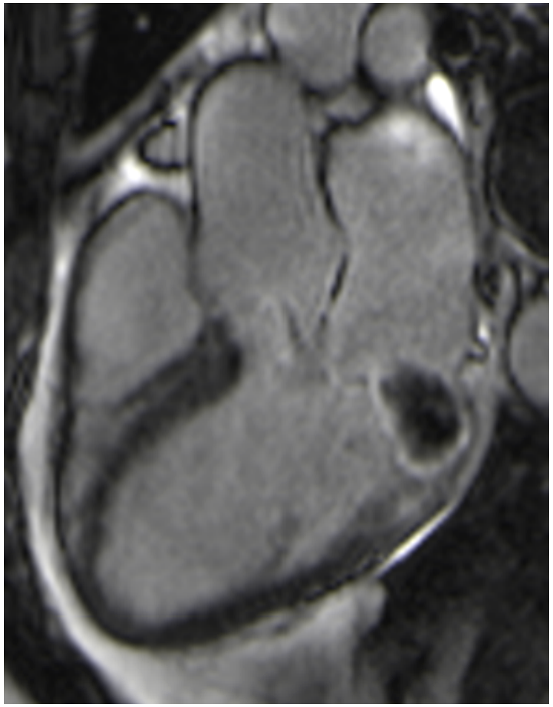


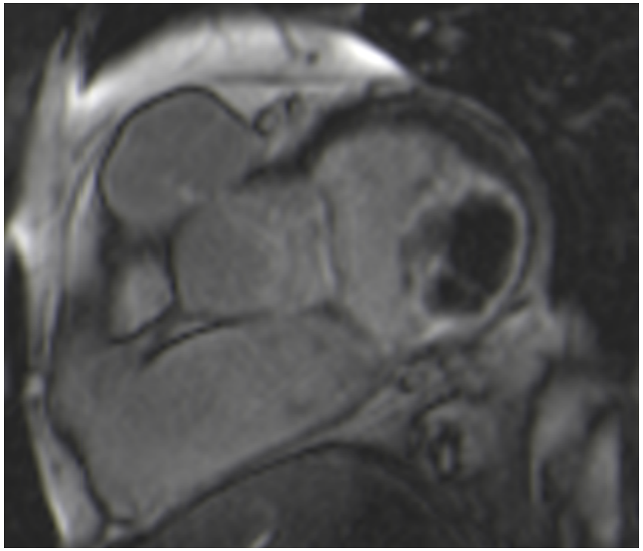


Late
enhancement

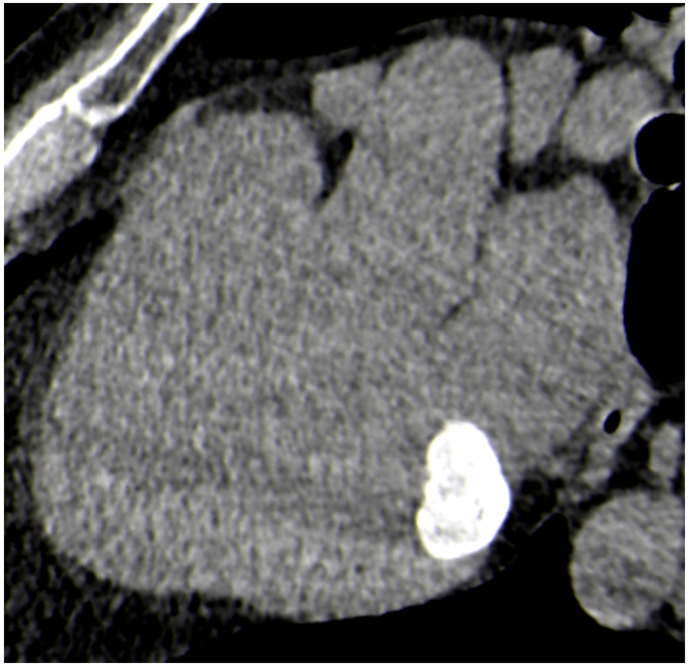


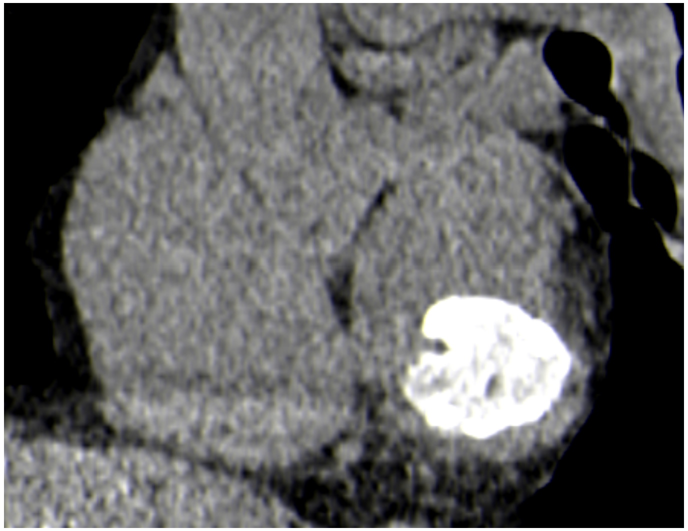
CALCAIRE = SCANNER





Late
Enhancement
(IRM)

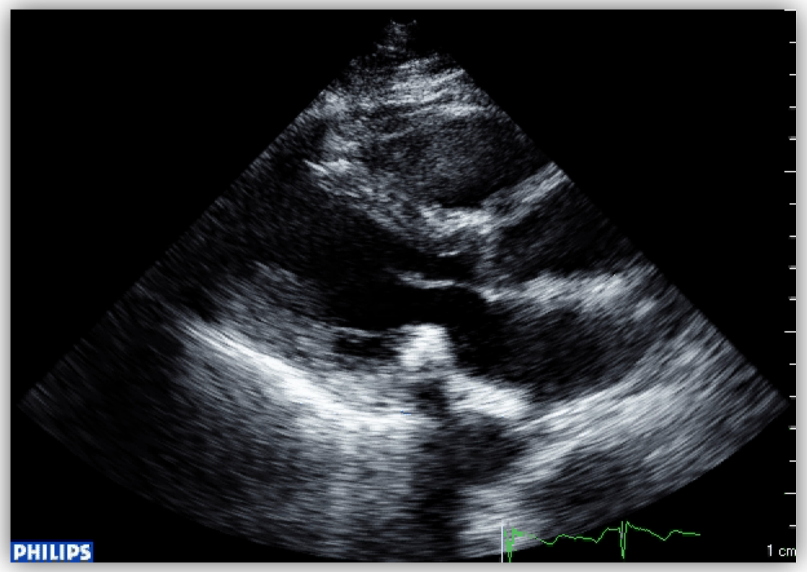


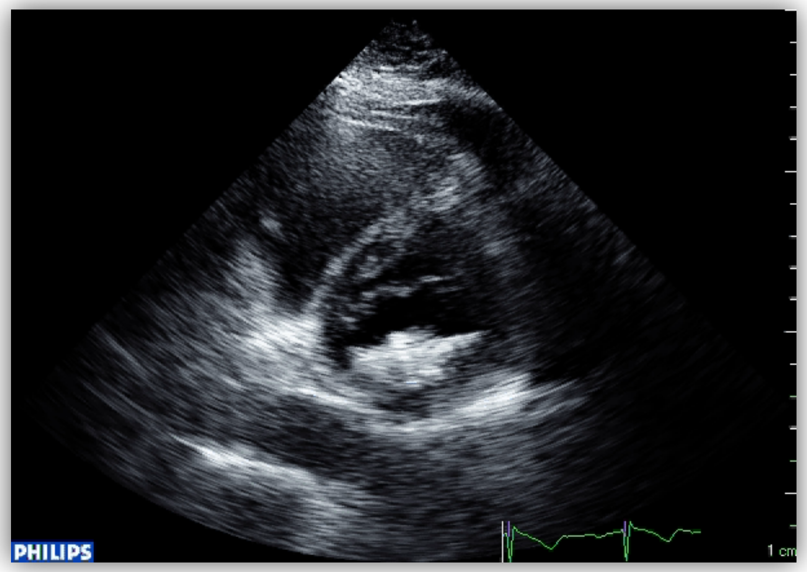


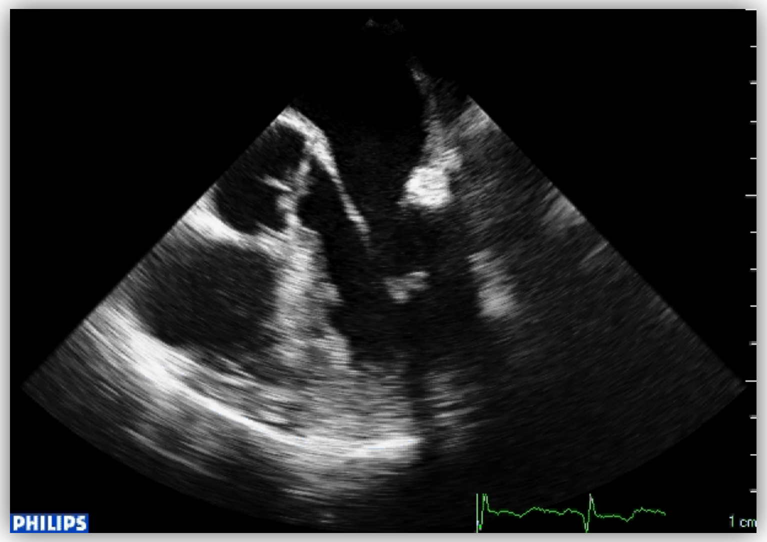
CT scanner

- **Ces éléments sont en faveur d’une calcification caséeuse de l’anneau mitral**.

Voila l’aspect typique en ETT et ETO


PHILIPS
1 cm

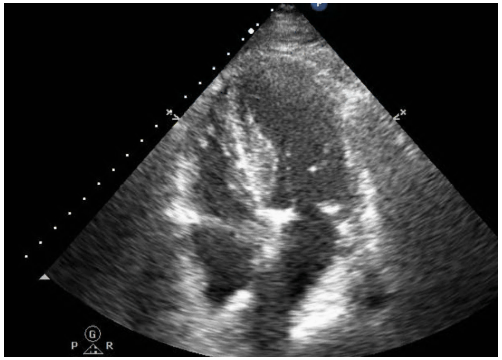

PHILIPS
1 cm


PHILIPS
1 cm

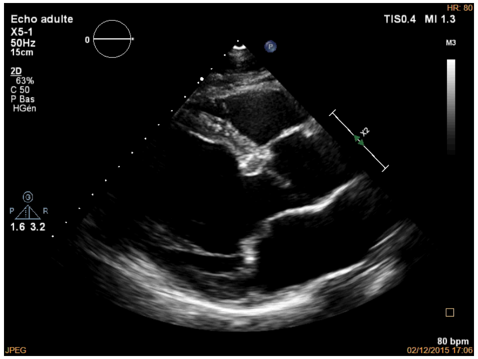
Cône d’ombre postérieur

Localisations les plus fréquentes

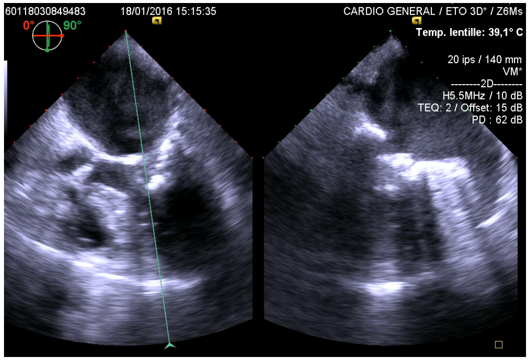
Anneau antérieur et postérieur



Anneau postérieur (site le plus fréquent)


Echo adulte
X5-1
50Hz
15cm
2D
63%
C 50
P Bas
HGén
TIS0.4 MI 1.3
HR: 80
M3
1.6 3.2
80 bpm
JPEG
02/12/2015 17:06

RM serré calcifié


60118030849483
18/01/2016 15:15:35
CARDIO GENERAL / ETO 3D° / Z6Ms
0°
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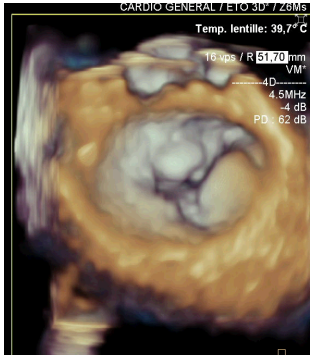
Temp. lentille: 39,1° C
20 ips / 140 mm
VM*
--------2D--------
H5.5MHz / 10 dB
TEQ: 2 / Offset: 15 dB
PD : 62 dB


CARDIO GENERAL / ETO 3D° / Z6Ms
Temp. lentille: 39,7° C
16 vps / R 51,70 mm
VM*
--------4D--------
4.5MHz
-4 dB
PD : 62 dB

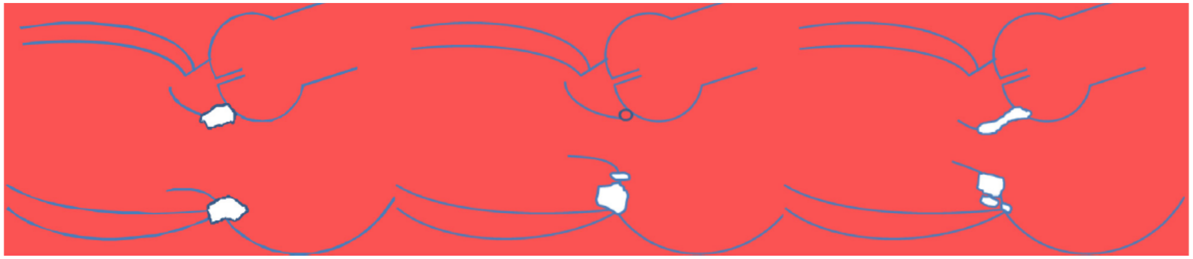


Figure 1 Illustration of various calcium distributions with accompanying echocardiographic still frames. **(A)** Anterior and posterior annular calcification. Both calcifications protrude beyond the normal bounds of the annulus. **(B)** Calcification of the posterior annulus extending onto the posterior leaflet and restricting its excursion. **(C)** Calcification of the anterior and posterior annulus; in each case, calcium extends onto the corresponding leaflet, restricting its excursion. Note that overall valve opening is significantly reduced.

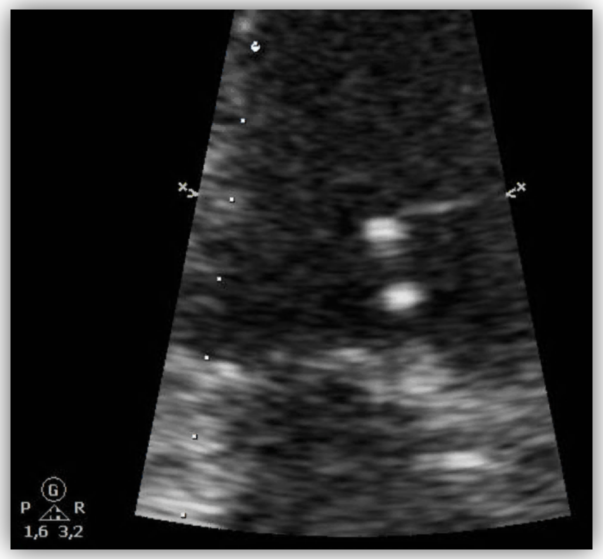
J Am Soc Echocardiogr 2013;26:1135-42

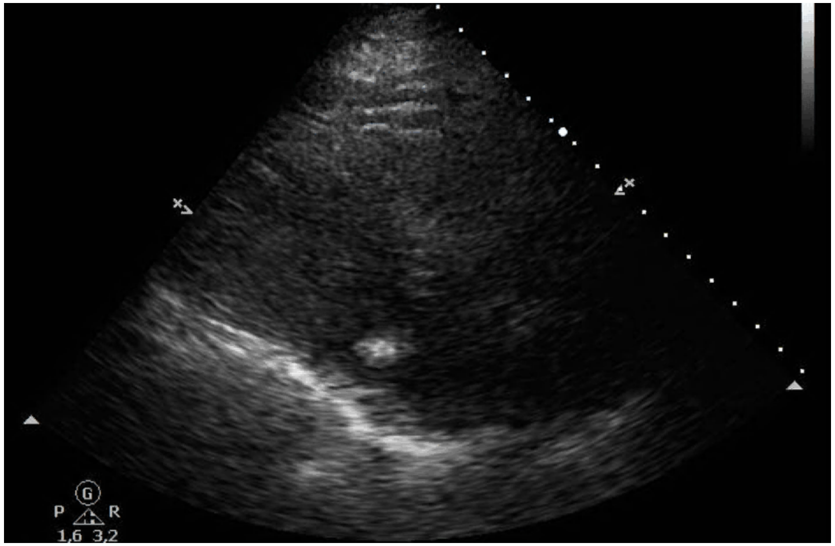
- Ces calcifications annulaires mitrales (MAC) sont fréquemment rencontrées chez le sujet âgé et chez l'hémodialysé ou l'insuffisant rénal chronique

- Prévalence entre 8 et 15%

- Les MAC sont associées à un risque accru d'AVC et d'endocardite infectieuse

AVC ischémique





Voici le cas d'une patiente ayant présenté un AIT avec découverte d'une image mobile hyperéchogène appendue à une MAC, d'origine thrombotique probable.

Le traitement anticoagulant (AVK) permettra la régression de cette image
et l'absence de récidive d'accident embolique clinique.

La liquéfaction du calcium et l'ulcération de l'endothelium de la mitrale peut favoriser ce phénomène

Available online at www.sciencedirect.com
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Case Report

Mobile thrombus originating from densely calcified mitral annulus with cerebral embolism

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ABSTRACT

Mitral annular calcification (MAC) has been considered a predisposition and an association of thrombo-embolic disease. Superimposed thrombus on MAC is under-appreciated as a potential cause of systemic thrombo-embolism. This report describes an elderly gentleman, who had recurrent cerebral embolism and in one of the episodes, a large mobile thrombus was detected on the ventricular surface of calcified mitral annulus. The thrombus disappeared after initiation of anti-coagulation.

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1. Introduction

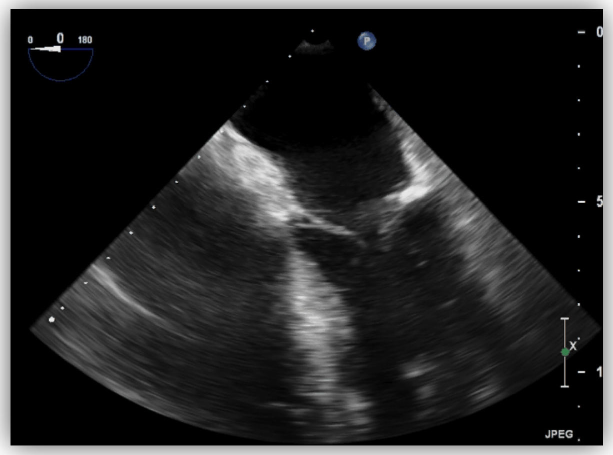
Mitral annulus calcification (MAC) is a non-inflammatory chronic degenerative process of the fibrous support structure of the mitral valve, preferentially involving the posterior part of the mitral annulus and often associated with risk factors of athero-thrombosis.[1] It is observed in 10% of the elderly men and about 16% of the elderly women.[2] MAC may also occur in younger patients with advanced renal disease or other metabolic disorders that result in abnormal calcium metabolism. The putative sequelae of MAC include mitral stenosis, mitral regurgitation, infective endocarditis, atrial arrhyth-

a thrombus on the mitral annulus.[4] A recent study has shown spontaneous fistulization of the caseous calcification and extrusion of the cheesy material mixed with calcium as the mechanism of embolic stroke.[5] The exact mechanism of stroke in MAC is speculative and possibly multi-factorial; however a total of about twenty cases have been reported so far in the literature with vanishing mobile masses on the calcified annulus consistent with thrombi.[6–14] This report deals with an elderly person with recurrent cerebral embolism, who was detected to have a large mobile mass on the ventricular surface of the mitral annulus consistent with thrombus in one of the several echocardiographic examinations. The mass and neurological symptoms disappeared on

Un cas similaire est ici publié

indian heart journal 68 (2016) s131–s134

Endocardite infectieuse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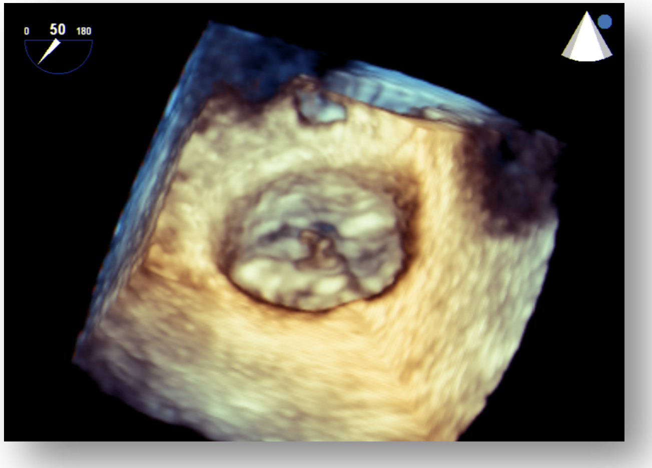
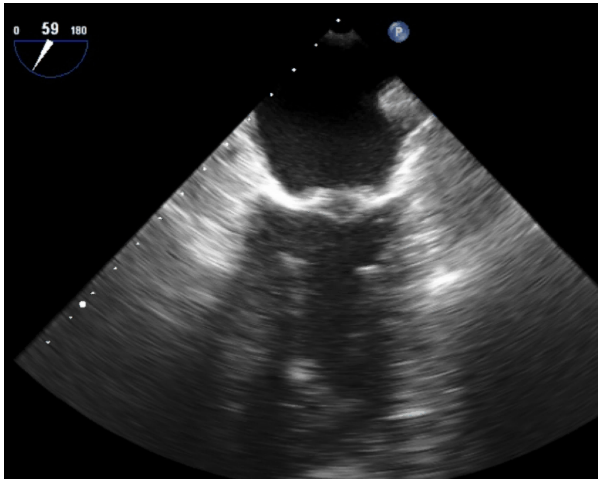
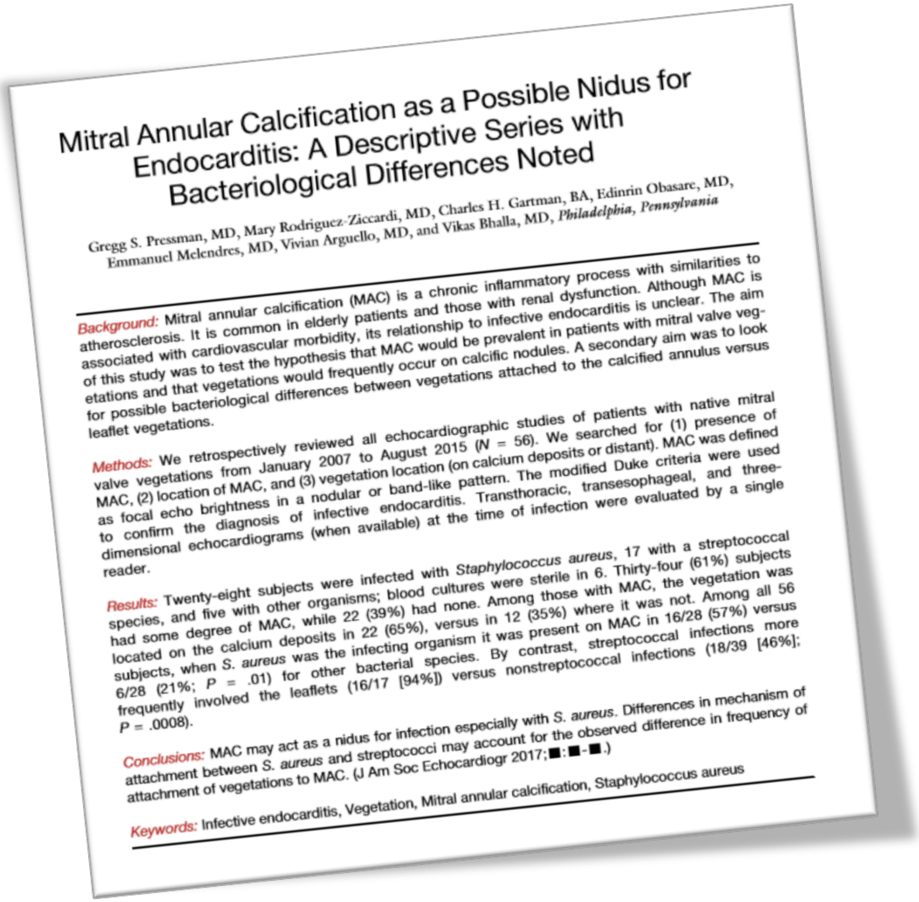




Végétation appendue à une MAC dans le cadre d’une endocardite à staph doré



Mitral Annular Calcification as a Possible Nidus for Endocarditis: A Descriptive Series with Bacteriological Differences Noted

Gregg S. Pressman, MD, Mary Rodriguez-Ziccardi, MD, Charles H. Gartman, BA, Edinrin Obasare, MD, Emmanuel Melendres, MD, Vivian Arguello, MD, and Vikas Bhalla, MD, *Philadelphia, Pennsylvania*

Background: Mitral annular calcification (MAC) is a chronic inflammatory process with similarities to atherosclerosis. It is common in elderly patients and those with renal dysfunction. Although MAC is associated with cardiovascular morbidity, its relationship to infective endocarditis is unclear. The aim of this study was to test the hypothesis that MAC would be prevalent in patients with mitral valve vegetations and that vegetations would frequently occur on calcific nodules. A secondary aim was to look for possible bacteriological differences between vegetations attached to the calcified annulus versus leaflet vegetations.

Methods: We retrospectively reviewed all echocardiographic studies of patients with native mitral valve vegetations from January 2007 to August 2015 ($N = 56$). We searched for (1) presence of MAC, (2) location of MAC, and (3) vegetation location (on calcium deposits or distant). MAC was defined as focal echo brightness in a nodular or band-like pattern. The modified Duke criteria were used to confirm the diagnosis of infective endocarditis. Transthoracic, transesophageal, and three-dimensional echocardiograms (when available) at the time of infection were evaluated by a single reader.

Results: Twenty-eight subjects were infected with *Staphylococcus aureus*, 17 with a streptococcal species, and five with other organisms; blood cultures were sterile in 6. Thirty-four (61%) subjects had some degree of MAC, while 22 (39%) had none. Among those with MAC, the vegetation was located on the calcium deposits in 22 (65%), versus in 12 (35%) where it was not. Among all 56 subjects, when *S. aureus* was the infecting organism it was present on MAC in 16/28 (57%) versus 6/28 (21%; $P = .01$) for other bacterial species. By contrast, streptococcal infections more frequently involved the leaflets (16/17 [94%]) versus nonstreptococcal infections (18/39 [46%]; $P = .0008$).

Conclusions: MAC may act as a nidus for infection especially with *S. aureus*. Differences in mechanism of attachment between *S. aureus* and streptococci may account for the observed difference in frequency of attachment of vegetations to MAC. (J Am Soc Echocardiogr 2017;■:■-■.)

Keywords: Infective endocarditis, Vegetation, Mitral annular calcification, Staphylococcus aureus

Pour les plus passionnés
(ou ceux qui ne se sont pas encore endormis à la lecture de ce délicieux catalogue),
Voici un article à paraître confirmant le risque d’endocardite des MAC et l’affinité du staph pour le calcaire

Conclusion MAC

- Cône d’ombre
- AVC ischémique
- Endocardite (plutôt staph)

Si vous êtes sages, nous verrons la prochaine fois comment évaluer les pressions de remplissage quant il y a une MAC…