

Mönckeberg calcification in a temporal artery

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ABSTRACT

Mönckeberg's calcification is a disease of low prevalence and unknown etiology that causes calcification of the middle layer of medium and small arteries. It usually presents with a clinical picture similar to giant cell arteritis, so a differential diagnosis with similar entities should be made. The diagnosis is anatomopathological, and there is no treatment that has shown significant results. Herein, we present the case of a 74-year-old male patient with recurrent syncope and chest pain, in whom giant cell arteritis was suspected and a temporal artery biopsy was taken with the incidental finding of calcification of Mönckeberg's media.

Key words: Calcification, Arteritis, Giant cell, Mönckeberg

INTRODUCTION

Mönckeberg's calcification is an uncommon, yet clinically relevant condition characterized by calcification of the middle layer of arteries, particularly medium and small caliber muscular arteries. Although usually asymptomatic, its identification in specific anatomical areas may pose significant diagnostic and clinical challenges [1]. In this context, we present a clinical case of Mönckeberg calcification in the temporal artery, highlighting the importance of its recognition and appropriate management in the context of vascular health assessment and clinical care of patients.

CASE REPORT

This was a 74-year-old patient with a history of atypical chest pain of several months of evolution pending evaluation in Cardiology consultation. He was recently admitted to the pneumology department for pain in the context of left pleural effusion of small amount that could not be drained and elevated acute phase reactants. The patient reported continuous central thoracic pain, with onset at rest, non-radiating,

increasing with deep breathing and prolonged duration, accompanied by dizziness with an orthostatic profile. There was an improvement of pain with dexketoprofen.

Personal history: no known drug allergies. Chronic gastritis. Benign prostatic hypertrophy. CVRF: no hypertension, DM or IHD. Ex-smoker. Hypercholesterolemia controlled with diet. Surgical interventions: benign parathyroid neoplasia. Selective fasciectomy for Dupuytren's disease.

On physical examination, there were no significant findings. The blood test showed IgG4 levels of 112 mg/dL with other normal markers. An exercise stress test was performed, which was clinically positive at 3.5 METS.

A CT scan showed coronary atheromatosis affecting the anterior descending, diagonal and right coronary arteries, as well as circumferential thickening of the wall of the ascending aorta; a finding that suggests vasculitis as a first possibility (arteritis of large vessels).

In view of the symptoms and findings in complementary tests, giant cell arteritis was suspected, and a biopsy

How to cite this article: Burgos Vico B, Peral Cagigal B, González González D, García Martín S, García Sierra C, Redondo González LM. Mönckeberg calcification in a temporal artery. Our Dermatol Online. 2024;15(3):290-292.

Submission: 01.03.2024; **Acceptance:** 23.05.2024

DOI: 10.7241/ourd.20243.17

of the temporal artery was requested to the oral and maxillofacial surgery department to confirm the diagnosis.

An incision was made under local anesthesia in the front-temporal region of about 3 cm, dissection by planes up to the location of the superficial temporal artery. The ends were ligated and a 1 cm sample of the artery was extracted. The incision was closed with 5/0 non-absorbable suture.

The sample was sent to the pathological anatomy, and the analysis showed the following.

- Macroscopic description: grayish tubular fragment measuring 1 cm in length and 0.1 in diameter. 1 BL IT.
- Microscopic description: artery with unaltered internal elastic lamina and the presence of focal calcifications in the media proximal to the external part of the internal elastic lamina and the absence of inflammatory infiltrates. There are no signs of giant cell arteritis (Figs. 1a and 1b).
- Diagnosis: Mönckeberg's calcification without signs of inflammation.

The patient was on corticosteroid treatment (prednisone 30 mg every 24 hours with a descending pattern until reaching 5 mg every 24 hours) with improvement of the symptomatology.

DISCUSSION

Mönckeberg's calcification is a disease that affects medium and small caliber arteries, producing fatty degeneration of muscle cells that then calcify. It is an entity that falls within the differential diagnosis of vasculitis, yet it has little clinical relevance and a low incidence, being considered most of the time an incidental finding when studying another pathology. It has been demonstrated that diabetes mellitus and chronic kidney disease are factors that favor its appearance and progression [1,2].

Studies are currently appearing that relate calcification of the middle layer of the arteries with genetic and inflammatory alterations. These include CD37 deficiency due to the mutation of a gene that increases the activity of nonspecific alkaline phosphatase, which is responsible for bone formation and vascular calcification. It has also been shown that the deposition of nanocrystals causes an inflammatory process in mesenchymal cells derived from smooth muscle cells that induce their calcification [3].

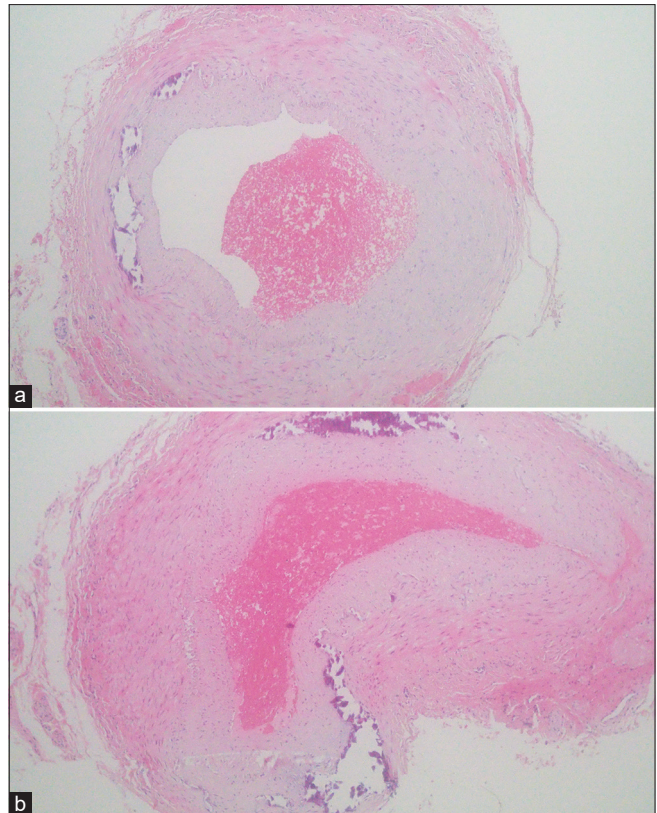


Figure 1: (a and b) Both images show an artery with unaltered internal elastic lamina and the presence of focal calcifications in the media proximal to the external part of the internal elastic lamina and the absence of inflammatory infiltrates. No signs of giant cell arteritis.

It is a disease that causes clinical manifestations when vascular occlusion occurs, which makes it highly similar to most vasculitides, so it must be taken into account in the differential diagnosis. Despite the new advances in its pathophysiology, there are no treatments with clinically significant results, and it is still an entity that is usually an incidental finding in the diagnosis [3].

CONCLUSION

Mönckeberg's calcification is an uncommon yet important condition to consider in clinical practice, especially in elderly patients. Although it is generally asymptomatic and carries no direct health risk, its detection may be relevant due to its association with cardiovascular risk factors and the possibility of being confused with other more serious pathologies, such as arteriosclerosis. Medical care should focus on the management of cardiovascular risk factors and patient education on the importance of a healthy lifestyle to prevent long-term cardiovascular complications.

ACKNOWLEDGMENTS

To the Anatomic Pathology Department of the Río Hortega University Hospital for the images of the histopathological study.

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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Source of Support: This article has no funding source.

Conflict of Interest: The authors have no conflict of interest to declare.