

## Image in cardiology

## Fatty Infiltration Around the Cardiac Nodes

## Infiltración grasa alrededor de los nodos cardiacos

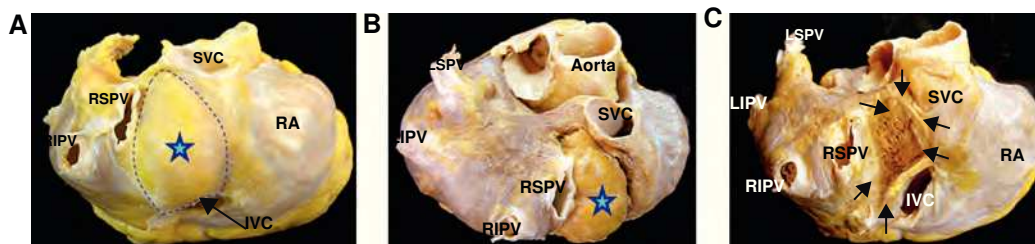
Margarita Murillo,<sup>a</sup> Félix Sánchez-Ugena,<sup>b</sup> and Damián Sánchez-Quintana<sup>a,\*</sup><sup>a</sup>Departamento de Anatomía y Biología Celular, Universidad de Extremadura, Facultad de Medicina, Badajoz, Spain<sup>b</sup>Servicio de Patología Forense, Instituto de Medicina Legal, Badajoz, Spain

Figure 1.

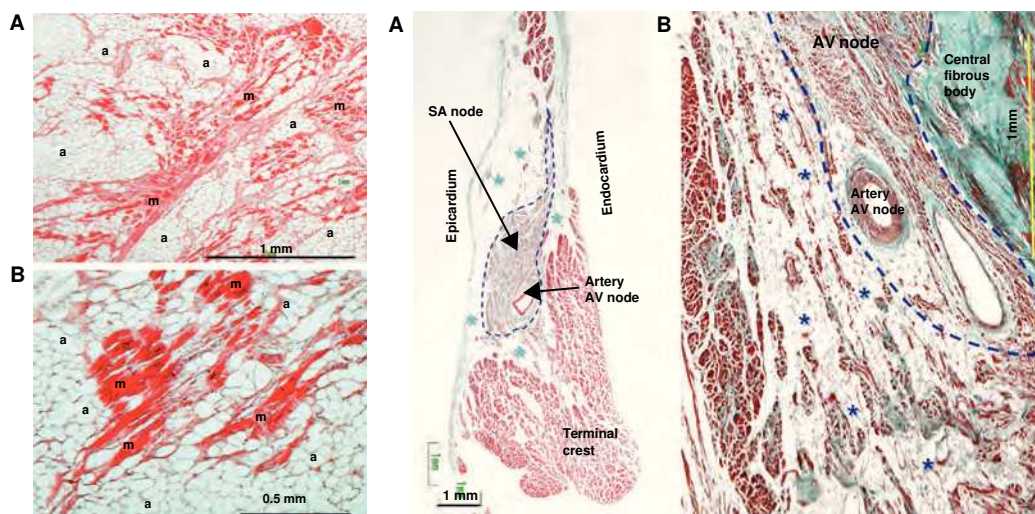


Figure 2.

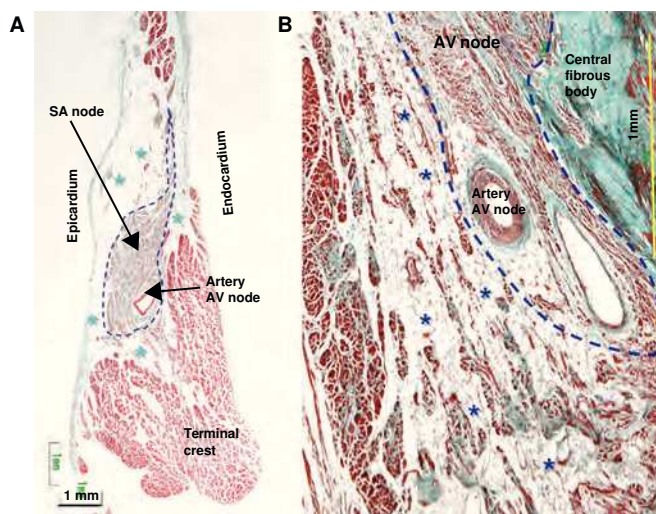


Figure 3.

Lipomatous hypertrophy of the interatrial septum (LHIS) is a rare benign tumor characterized by fat deposition in the interatrial septum, without fossa ovalis involvement. LHIS is often associated with cardiac arrhythmia, generally of supraventricular origin (premature atrial contractions, sick sinus syndrome, atrial flutter, and atrial fibrillation), heart failure, and sometimes, sudden death.

We present the case of a morbidly obese, middle-aged woman (47 years), with dilated cardiomyopathy, possibly caused by alcohol abuse, and congestive heart failure, who died suddenly. An autopsy study of the heart disclosed LHIS. Macroscopic examination showed a fatty tumor located in the interior of the interatrial groove (Fig. 1, star) which, following resection (Fig. 1, arrows), measured 5×2.5 cm. Histological study showed the typical features of this tumor, mature adipocytes (Fig. 2A) intermixed with atrial myocytes (Fig. 2B). On analysis of the sinoatrial and atrioventricular nodes following Masson trichrome staining (Fig. 3), the fat infiltration (asterisks) was seen to externally circle the nodes without completely isolating them from the surrounding working atrial myocardium.

The etiology of LHIS is unknown, but it usually occurs in elderly, obese persons, predominantly women. One of the causal mechanisms of atrial arrhythmia in LHIS may be fat infiltration from the main tumor mass toward the nodes, which could interfere with the muscle architecture and electric transmission between the nodal myocytes and working atrial myocytes, thereby originating re-entry phenomena.

\* Corresponding author:

E-mail addresses: [dasaqui55@yahoo.com](mailto:dasaqui55@yahoo.com), [damians@unex.es](mailto:damians@unex.es) (D. Sánchez-Quintana).

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