Letters to the Editor

Myocardial Cleft: An Anatomical Anomaly to Bear in Mind

To the Editor:

The doubts in the interpretation of images, whether angiographic or echocardiographic, due to clefts in the left ventricular myocardium, may lead to a chain of complementary explorations, more or less aggressive, to clarify their origins. Cardiac magnetic resonance imaging (CMR1) is a non-invasive imaging technique with an excellent spatial resolution, that allows for the anatomical diagnosis to be made of these myocardial clefts or crypts that may appear in healthy individuals as well as in patients with some kind of cardiovascular disorder.1-3

We present a case of a 58-year-old male who, after seeking medical care for atypical chest pain, underwent a diagnostic coronary catheterization due to discrepancies between the clinic signs that he presented and the complementary explorations carried out. The coronary catheterization did not show any lesions in the coronary arteries, but in the ventriculography, a finger-shape image was observed, with contrast penetration, in the inferior basal segment (Figure 1). In the echocardiography performed afterwards, various myocardial protrusions were observed that corresponded to the endocardial edge of the cleft which were interpreted as corresponding to a myocardial mass, and therefore a CMR was requested to complete the etiological study. In both the MR-film sequences, where no contractility alterations were observed, and in the sequences of the late enhancement after the administration of contrast, that showed the existence of a focal fibrosis, a characteristic image of a myocardial cleft was observed, located in the basal segment of the inferior portion (Figure 2). The patient...
level of the inferior basal segment, only observed in
healthy volunteers, and one at the mid-apical septal
level, observed both in healthy volunteers and in
patients sent for a CMRI for other conditions. The
importance of this series lies in that it demonstrates
that in more than 6% of healthy individuals CMRI
detects myocardial clefts. This finding has no
pathological meaning, but it is important to know
it given that an erroneous diagnosis, such as non-
compaction cardiomyopathy, could be harmful to
the patient.

The cause of the clefts is unknown, although it has
been postulated that in patients with hypertrophic
 cardiomyopathy it could be due to myocardial
ischemia from micro-vascular dysfunction and/or
myocardial disarray, an alteration that could be
related with the spiral position of the myocardial
fibres. Nevertheless, until now, it has not been
demonstrated that its identification in healthy
individuals implies myocardial disease.

To conclude, the CMR allows for the
identification of the presence of clefts in the left
ventricle that, although it may be an infrequent
finding, is important to know about to avoid an
incorrect diagnosis. According to the information
found in the literature, it would seem that the most
characteristic localisation in healthy individuals is
the inferior basal segment.

Sandra Pujadas,a Juan Sánchez-Rubio,b
José G. Galache,b and Francesc Carrerasa

aUnidad de Imagen Cardiaca, Servicio de Cardiología, Hospital de Sant
Pau, Barcelona, Spain
bServicio de Cardiología, Hospital Miguel Servet, Zaragoza, Spain

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