



ELSEVIER

Contents lists available at ScienceDirect

## European Journal of Radiology

journal homepage: [www.elsevier.com/locate/ejrad](http://www.elsevier.com/locate/ejrad)

## Letter to the Editor

**Left ventricular clefts and diverticula****Keywords:**

Coronary CT angiography  
Left ventricular cleft  
Apical diverticulum



Dear Editor,

We read with interest the article by Erol et al. [1] describing the congenital left ventricular wall abnormalities in adults who underwent coronary CT angiography. We decided to compare certain results that we deemed interesting with regard to left ventricular wall abnormalities in their article with the data for our patient group.

Erol et al. reported 141 left ventricular clefts in 2093 patients (6.7% of all patients) in their study [1]. We retrospectively evaluated coronary CT angiography images of consecutive 786 patients who underwent coronary CT angiography in our department. We detected left ventricular clefts in 24 (3.05%) of 786 patients. Left ventricular clefts were most commonly located at mid inferoseptal segment (29.2%). The location of the left ventricular clefts were midventricular [inferoseptal segment in 7 (29.2%) patients, anteroseptal segment in 6 (25%) patients, septal segment in 6 (25%) patients] and basal [inferoseptal segment in 4 (16.7%) patients, inferior segment in 1 (4.2%) patients]. We did not observe left ventricular cleft in segments of basal level.

We would also like to share our observation with respect to left ventricular apical diverticula with our colleagues. During coronary CT angiography examinations, left apical diverticula are noticed more commonly. Therefore, we had recently performed a study about apical diverticulum with multidetector computed tomography (MDCT) coronary angiography. We considered the diverticulum as localized outpouching from the cardiac chamber at the apex of the heart. In this study, a total of 786 consecutive MDCT coronary angiography examinations were reviewed retrospectively. Apical diverticula were observed in 9 patients (1.14% prevalence). In the study of Erol et al. neither congenital nor acquired apical diverticulum had been mentioned [1]. Whereas, the incidence of an LV diverticulum was found 0.26% and 0.04% respectively in a cardiac catheterization study and in an echocardiographic study [2,3]. Moreover in this evaluation, we found that myocardial hypertrophy was observed in 4 (44%) of 9 patients who had apical diverticula and an apical diverticulum was observed in

4 (33%) of 12 patients who had myocardial hypertrophy. A statistically significant relationship was found between myocardial hypertrophy and apical diverticulum ( $p$ : 0.011). As a result we concluded that there may be a relationship between myocardial hypertrophy and the development of an apical diverticulum.

**Conflict of interest**

There is no conflict of interest.

**References**

- [1] Erol C, Koplay M, Olcay A, et al. Congenital left ventricular wall abnormalities in adults detected by gated cardiac multidetector computed tomography: clefts, aneurysms, diverticula and terminology problems. *European Journal of Radiology* 2012;81(11):3276–81.
- [2] Ichikawa K, Makino K, Futagami Y, et al. Isolated congenital left ventricular diverticulum in an adult: a case report. *Angiology* 1994;45:743–7.
- [3] Takahashi M, Nishikimi T, Tamao K, et al. Multiple left ventricular diverticula detected by second harmonic imaging. *Circulation Journal* 2003;67:972–4.

Ersin Ozturk\*

Muzaffer Saglam<sup>1</sup>

GATA Haydarpaşa Teaching Hospital, Department of Radiology, Istanbul, Turkey

Ali Kemal Sivrioglu<sup>2</sup>

Aksaz Military Hospital, Department of Radiology, Mugla, Turkey

Kemal Kara<sup>3</sup>

GATA Haydarpaşa Teaching Hospital, Department of Radiology, Istanbul, Turkey

\*Corresponding author. Tel.: +90 532 3748866.

E-mail addresses: [drersinozturk@gmail.com](mailto:drersinozturk@gmail.com)(E. Ozturk), [mzsaglam@yahoo.com](mailto:mzsaglam@yahoo.com) (M. Saglam),[draksivrioglu@gmail.com](mailto:draksivrioglu@gmail.com) (A.K. Sivrioglu),[drkemalkara@yahoo.com](mailto:drkemalkara@yahoo.com) (K. Kara)<sup>1</sup> Tel.: +90 545 6755055.<sup>2</sup> Tel.: +90 505 6298618.<sup>3</sup> Tel.: +90 549 5491234.

14 March 2013