Prevalence and characteristics of coronary artery anomalies in an adult population undergoing multidetector-row computed tomography for the evaluation of coronary artery disease.

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PURPOSE

Congenital coronary anomalies are uncommon with an incidence ranging from 0.17% in autopsy cases to 1.2% in angiographically evaluated cases. The recent development of ECG-gated multi- detector row computed tomography (MDCT) coronary angiography allows accurate and noninvasive depiction of coronary artery anomalies.

The aim of this study was to evaluate the prevalence of anomalous origin, course and termination of coronary arteries in consecutive symptomatic patients, who underwent cardiac 64- slice MDCT coronary angiography.

METHODS

This retrospective study included 2572 patients who underwent coronary 64- slice MDCT coronary angiography from January 2008 to March 2012.

RESULTS

- Of the 2572 patients, sixty (2.33%) were diagnosed with coronary artery anomalies (CAAs), with a mean age of 53.6 ± 11.8 years.
- High take-off of the RCA was seen in 16 patients (0.62%), of the left main coronary artery (LMCA) in 2 patients (0.08%) and both of them in 2 patients (0.08%).
- Separate origin of the LAD and Cx from Left Sinus of Valsalva (LSV) was found in 15 patients (an incidence of 0.58%).
- In 9 patients (0.35%) the RCA arose from the opposite sinus of Valsalva with a separate ostium.
- In 6 patients (0.23%) an abnormal origin of LCX from the right sinus of Valsalva (RSV) was found.
- A single coronary artery was seen in 3 patients (0.12%).
- In 2 patients (0.08%) left coronary trunk was found to originate from the RSV with separate ostium from the RCA.
- LCA from the pulmonary artery was seen in one patient (0.04%).
- A coronary artery fistula was detected in 4 patients (0.15%).

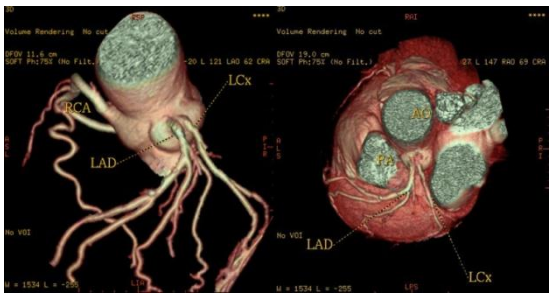

Fig. 1: Separate orifices for the left anterior descending and the circumflex artery

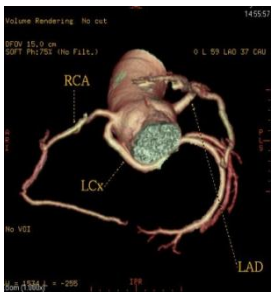

Fig. 2: Anomalous origin of the circumflex artery from the right sinus of Valsalva

Fig. 3: Origin of the left coronary artery from the pulmonary artery

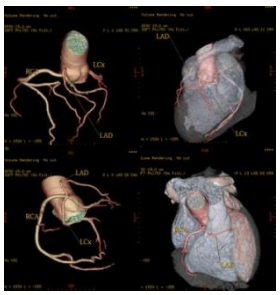

Fig. 4: Origin of all coronary arteries from the right sinus of Valsalva with separate orifices

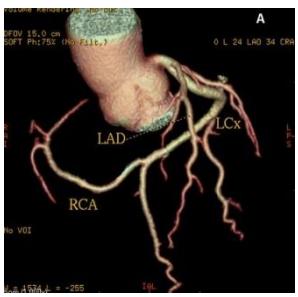

Fig. 5:Congenital absence of the right coronary artery

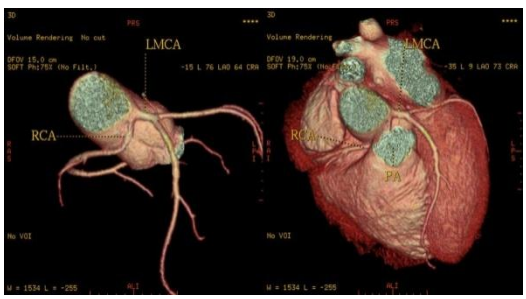

Fig. 5: Separate origin of the right coronary artery from the left sinus of Valsalva

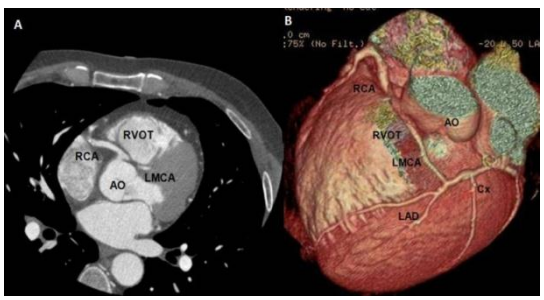

Fig. 6: Solitary conary artery from the right sinus of Valsalva

CONCLUSIONS

The results of this study support the use MDCT coronary angiography as a safe and effective noninvasive imaging modality for defining CAAs in an appropriate clinical setting, providing detailed three-dimensional anatomic information that may be difficult to obtain with invasive angiography.

I do not have any potential conflict of interest