Intra-atrial course of the right coronary artery: depiction of a potentially hazardous entity on dual-source CT

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DESCRIPTION

A 45-year-old man presented in the outpatient clinic with occasional atypical chest pain. ECG was normal, and echocardiography did not reveal any wall motion abnormality. The patient was referred to us for CT angiography (CTA) to rule out coronary artery disease. The CTA, done on 192(×2)-slice dual source scanner (Siemens SOMATOM Force) revealed intracavitary course of the mid-segment of the right coronary artery (RCA) within the right atrium (RA) (figure 1A, arrow) for a length of 4.5 cm with a normal epicardial course of the rest of the RCA (figure 1B, asterisk and figure 2A–C). There was no significant coronary artery stenosis.

Anomalous intracavitary coronary arteries were first described by McAlpine in 1975.1 Previously considered to be extremely rare abnormality, it is increasingly being recognised as a commoner entity with advent of CT. A recent study evaluating 7847 coronary CTA studies estimated the prevalence of intracavitary RCA to be 0.36%.2 Though this incidentally detected anomaly seems to be unrelated to our patient’s chest pain, it is important to know about this entity before various interventions. The procedures which put the intracavitary RCA under risk of inadvertent damage include: (1) those requiring catheter manipulation in RA such as angiography, central venous catheter and pacemaker placement; (2) electrophysiological studies—during electrode placement, trans-septal puncture for LA access, RF ablation of arrhythmias; (3) CAGB—during coronary localisation and grafting; (4) open heart surgery—during IVC/coronary sinus cannulation, dissection of target vessel and so on. CTA proves to be extremely helpful to forewarn the interventionist/surgeon of the presence of this entity before planning such procedures to avoid catastrophic damage to the coronary artery, thereby preventing myocardial ischaemia on table.

Learning points

► Intra-atrial course of the right coronary artery (RCA) is a rare variant anomaly.
► This anomalous course of the RCA puts it at risk during cardiac interventions and can result in myocardial ischaemia on table.
► It is imperative for the radiologist to diagnose and document this on the report so that necessary precautions can be taken during interventional procedures or during surgery.

Acknowledgements The surname of the patient is same as one of the coauthors, but the patient is not related to the coauthor in anyway.

Contributors Dr KPG contributed to the planning, data collection, preparation, design and final approval of this manuscript. Dr VO contributed to the preparation, editing, data interpretation and design of the manuscript. Dr MS contributed to the preparation, editing and approval of the manuscript. Dr SK contributed to the planning, editing and final approval of the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.
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REFERENCES

