Reviewer's report

Title: Manuscript Title: The prevalence of coronary anomalies in a single center of Korea: origination, course, and termination anomalies of coronary arteries detected by multidetector computed tomography

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Reviewer: Tadhg Gleeson

Reviewer’s report:

The manuscript is well written, concise and well supported by good quality cardiac CT images. The major limitations of the study are acknowledged by the authors, namely the retrospective nature of the study, its single centre nature and the abundancy of similar studies in the published literature. It’s strength lie in it’s interest to the South East Asian community and the reporting of rates in the Korean population, not previously published.

Major Compulsory Revisions:

1. The use of the term multidetector CT is somewhat misleading in its current form and requires clarification. All modern CT scanners are MDCTs, the main advantage of more recent technology is the improved temporal resolution of the scan, due in part to increased number and quality of detector rows, and the coupling of acquisition with ECG gating.

2. Abstract conclusion should concentrate on prevalence and not on diagnostic accuracy as the title states this is an investigation of prevalence and not an assessment of accuracy, as to comment on same would require ‘gold standard’ comparisons in every case included. At the very least the conclusion should include the prevalence rate established and how this compares with previously published data.

3. The term ‘coronary anomaly’ needs to be defined. The omission of ‘anomalies’ such as myocardial bridging and coronary artery aneurysms in this study need to be highlighted from the start, the terms ‘aberrant coronary artery anatomy/origin/number/course/termination’ should be considered.

4. The methodology section requires more detail regarding method of data extraction, how patients were selected and how robust this process is. Were database search terms used on a PACS system or was a standalone database maintained, and if so by whom? Is there any chance cases could have been omitted or missed? Is there the possibility that aberrant coronary anatomy could have been incidentally diagnosed on other forms of MDCT acquisition (eg incidentals on thoracic CT or Aortic CTA)? As this could potentially alter prevalence rates, it either needs to be addressed or the title needs to be more specific and include ‘ECG-gated cardiac MDCT’ or some such more specific term to avoid this confusion.
5. The omission of myocardial bridging because of the ‘uncertain clarity of its definition’ needs to be revised and referenced. It is a ‘lack of clarity’ or ‘uncertainty regarding its definition’. It’s questionable clinical significance and the fact it may be a type of normal variant may also be grounds for exclusion though if this was the case, the majority of cases of aberrant coronary anatomy would have to be excluded given their benign clinical course.

6. ‘Limited information’ is alluded to in the limitations section, we need to know what the methodological limitations were in the methods section.

7. Results:
Is there any data available regarding patient presentation and suspected clinical significance or correlation with symptoms in the 103 patients in question?

8. Discussion:
The phrase ‘the recently developed MDCT’ is misleading, as previously stated MDCT has been an industry standard for >10 years, ECG-gated MDCT with high temporal resolution is what makes newer technologies so suitable for coronary analysis.

9. Retrospective review needs to be included in the limitations section. Exclusion of myocardial bridging seems reasonable too given its common occurrence and questionable clinical significance.

10 Conclusion:
Third sentence requires revision.

On balance, despite the limitations alluded to, I am of the opinion that this article represents a useful contribution to the field and is thus worthy of publication.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests'