Prevalence and Types of Anomalous Coronary Anatomy and Future Utilisation of Such Cohorts to Investigate Cause

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Background: The incidence of anomalous coronary anatomy is about 1%. The embryonic cause is unknown.

Method: We searched cardiac catheterisation cases over 5 years (2013–2017) for the words “anomaly”, “anomalous”, “aberrant”, and common spelling mistake variations. For duplicates, only a patient’s earliest procedure was included. A cardiologist reviewed the report and angiogram of each potential case to confirm coronary anomaly. We excluded cases of high take-off anterior right coronary origin, separate origin of LAD and circumflex, and coronary artery fistulae, because our methodology was unlikely to detect all such cases.

Results: The incidence was 0.8% (109 of 14295) including:
- Circumflex origin from right cusp or as proximal branch of right coronary (n = 61, 36%),
- Right coronary origin from left cusp (n = 36, 33%),
- Left coronary origin from right cusp (n = 8, 7.3%),
- Single cases (n = 1, 0.9%) of:
  - Single coronary from left cusp,
  - Right, circumflex and LAD coronaries with separate ostia from right cusp, and
  - LAD origin from right cusp.

There was no difference between cases and non-cases regarding age, procedure duration, screening time, height, weight or gender.

Conclusions: 0.8% proportion with coronary anomaly is similar to previous series. The commonest anomaly is circumflex arising from the right cusp or as a branch of the right coronary. Our cohort could be leveraged to perform GWAS or whole genome sequencing to investigate genetic contributions to anomalous coronary anatomy. Genetic studies of this phenotype do not yet appear to have been conducted.

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Prognosis of Myocardial Infarction with Non-Obstructive Coronary Arteries – A Systematic Review

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Introduction: Myocardial Infarction with Non-Obstructive Coronary Arteries (MINOCA) is now established as a clinically relevant presentation. MINOCA compromises of both angiographically completely smooth coronaries (0% stenosis) and those with mild coronary artery disease (CAD). This systematic review compares 1-year all-cause mortality and 1-year re-infarction rates in these MINOCA subsets.

Methods: An unrestricted literature search was conducted on the terms ‘Myocardial Infarction (MI), ‘non-obstructive’, ‘angiography’ and ‘prognosis’ using PubMed and Embase. Publications with non-consecutive recruitment, less than 100 MINOCA patients or selection bias were excluded. MINOCA was defined as MI (as per the universal criteria) in the absence of obstructive CAD (i.e. no epicardial stenosis ≥50% at angiography). Unpublished data were accumulated via the MINDOA Global Collaboration. Data from the included studies were pooled and analysed using DerSimonian-Laird random-effects meta-analysis. Heterogeneity was assessed using Cochran’s Q and I2 statistics.

Results: Literature auditing identified 27 prognostic MINOCA publications, of which 4 compared 1-year all cause mortality (n = 5044) and 3 compared 1-year re-infarction (n = 4279) rates between smooth and mild CAD subsets. In regard to 1-year mortality, there was no statistical difference between those with smooth and mild CAD (3.5% [2.4–4.5] vs 3.5% [2.7–4.2], p > 0.05), respectively. However, the 1-year re-infarction rate was significantly higher in those with mild-CAD (2.9% [0.7–5.0] vs 4.6% [1.8–7.5], p < 0.05).