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PROGNOSIS OF ANOMALOUS CORONARY ARTERIES ORIGINATING FROM THE OPPOSITE SINUS OF VALSALVA (ACAOS): 15 YEAR EXPERIENCE FROM TWO LARGE CMR CENTRES

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Introduction Aberrant coronary arteries represent a diverse group of congenital disorders, many of which may have no clinical significance. Post mortem studies show a high risk of exercise related sudden cardiac death in those with an anomalous coronary artery originating from the opposite sinus of Valsalva (ACAOS) that takes an inter-arterial (anterior) course. However, there is little documentation in life of the long term natural history of anomalous coronary arteries.

Methods Databases from two cardiovascular magnetic resonance (CMR) centres (Leeds General Infirmary and Royal Brompton Hospital) were reviewed. Patients with anomalous coronary arteries undergoing CMR over a 15 year period (1995–2009) were identified. Anomalous coronary arteries were classified according to their anatomy and course. Both the electronic and paper records of all patients were reviewed for major adverse cardiovascular events (MACE) defined as cardiovascular mortality, myocardial infarction, revascularisation (PCI or CABG). Cause of death was verified by the Office for National Statistics. Revascularisation or myocardial infarctions were only counted if they occurred in the distribution of the anomalous artery.

Results 173 consecutive patients with coronary artery anomalies were retrospectively identified with a median age 54 years (range 1–85). The median follow-up time was 4.3 years (IQR 2.5–7.8)

Table 1

	Anterior (n=65)	Posterior (n=52)	Significance
Cardiovascular deaths, n	3	2	NS
PCI, n	4	2	NS
Surgical revascularisation, n	23	1	p<0.0001
Myocardial Infarction, n	18	6	p<0.05

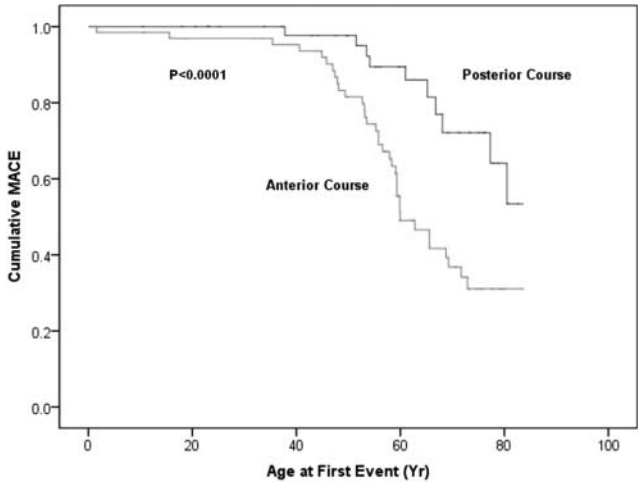

Figure 1

with a maximum of 15.6 years. Of the 173 patients, 117 had ACAOS of which 111 were alive, 5 deceased and 1 lost to follow-up. 65 patients (56%) had an inter-arterial course and 52 (44%) a posterior course. In those patients with ACAOS there were 59 MACE events (5 cardiovascular deaths, 6 PCI, 24 CABG and 24 had myocardial infarction). 48 MACE events occurred in ACAOS with an anterior course and 11 with a posterior course ($p<0.0001$) the statistical difference driven by surgical revascularisation and myocardial infarction (table 1).

Conclusions We have demonstrated that in life, patients with an anomalous coronary artery originating from the opposite sinus of Valsalva taking an anterior course, have higher rates of both myocardial infarction and surgical revascularisation during long-term follow up, compared to those with a posterior course.