# [Surgery for anomalous aortic origin of coronary arteries: a multicentre study from the European Congenital Heart Surgeons Association†.](https://www.ncbi.nlm.nih.gov/pubmed/30897195)

Padalino MA, Franchetti N, Hazekamp M, Sojak V, Carrel T, Frigiola A, Lo Rito M, Horer J, Roussin R, Cleuziou J, Meyns B, Fragata J, Telles H, Polimenakos AC, Francois K, Veshti A, Salminen J, Rocafort AG, Nosal M, Vedovelli L, Guariento A, Vida VL, Sarris GE, Boccuzzo G, Stellin G.

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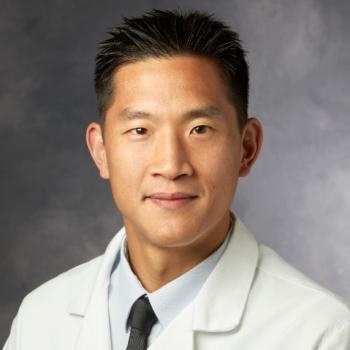
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**Take-Home Points:**

* AAOCA can be clinically very significant, resulting in sudden cardiac death and/or acute profound ventricular dysfunction. The management of clinically significant AAOCA involves surgical correction by a number of techniques that are generally very safe, with little morbidity and mortality.
* In the largest surgical AAOCA series published to date, operative and long-term mortality was 1.3% and 2.2% respectively. Event-free survival was estimated to 74.6% at 20-25 year follow-up. Most patients remained in excellent functional status, and a small subset continued to have poorly-defined chest pain after surgical repair.



***Commentary from Dr. Michael Ma (Stanford, CA), section editor of Congenital Heart Surgery Journal Watch:*** This multi-center retrospective review comprises the largest surgical AAOCA series to date, and demonstrates immediate and long-term results after surgical management for this condition. While it does not specifically try to answer controversies around appropriate patient selection, it does conclude that surgical therapy is very safe with little long-term morbidity or mortality.

156 patients with isolated AAOCA from 1991-2016 were studied. Generally, indications for intervention included all AAOLCA (anomalous left), symptomatic AAORCA (anomalous right), and asymptomatic AAORCA with preoperative testing suggestive of inducible ischemia. 85.9% of the cohort was considered symptomatic. Coronary unroofing (56.4%), coronary reimplantation (19.2%), and coronary artery bypass grafting (CABG) (15.4%) were most commonly employed. Two (1.3%) patients died in the immediate post-operative period; both patients presented with low cardiac output prior to surgical intervention and ultimately succumbed to complications of ventricular dysfunction. 14 (9%) patients suffered post-operative morbidity, including low cardiac output syndrome in nine with six of those requiring mechanical circulatory support, early re-intervention in seven, and mild-moderate aortic valve regurgitation (after unroofing) in two (1.3%).

At late follow-up (median two years), three (2.2%) deaths occurred in septuagenarians. Long-term morbidity included three (2.3%) operative re-interventions (aortic valve replacement, followed by pacemaker in the same patient, ascending aortic replacement with myocardial bridge unroofing in a separate patient), five (3.7%) non-operative re-interventions (three coronary stents, one electrophysiologic ablation, one internal cardioverter-defibrillator). 91.2% of late survivors were in NYHA Class I or II. 14.2% of patients continued to have symptoms, primarily undefined chest pain, with only one correlated to an ongoing positive cardiac stress test.



These findings corroborate existing, primarily single-center studies that examine the overall safety of surgery for AAOCA in a population of patients that meet consensus criteria for intervention. Despite generally favorable results, immediate and long-term complications and death did occur, and were not statistically linked to one particular subset of patients or procedure choice. Importantly, these findings add yet an additional data point for consideration in the more controversial management question of what, if any, therapies to offer the asymptomatic patient who is diagnosed with AAOCA through incidental imaging.