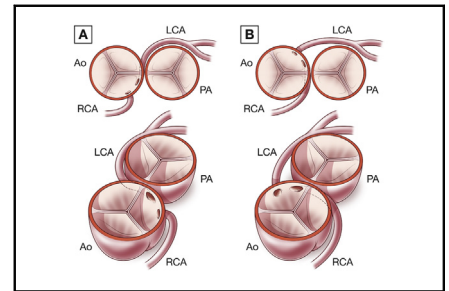


See Article page 757.



Commentary: Surgery for an anomalous aortic origin of a coronary artery: To do, or not to do? That is the question

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Anomalous aortic origin of the left (A) or right (B) coronary artery with an interarterial course.

CENTRAL MESSAGE

The role of surgery, despite its low risk, in asymptomatic patients with AAOCA is unclear.

Management of asymptomatic patients with anomalous aortic origin of a coronary artery (AAOCA) (Figure 1) is a dilemma that has been tormenting surgeons and physicians alike for decades. Does the risk of surgery in asymptomatic patients outweigh the risk of sudden death? What is the risk of sudden death? Will we ever know the true risk of sudden death in the general population with unknown incidence of AAOCA? Despite feverish discussions of the topic at multiple meetings, the research addressing these questions is limited. Will these questions ever be answered?

Clearly, the true incidence of sudden death is difficult, perhaps even impossible, to establish. It has been reported that AAOCA is the second most common cause of sudden death,¹⁻³ with a rate of 0.6 deaths/100,000 people, albeit in competitive young athletes. Although AAOCA of a right coronary artery is 6 to 10 times more common than AAOCA of a left coronary artery, it appears that AAOCA of the left coronary artery has a slightly higher risk of sudden death.^{4,5} Brothers and colleagues¹ calculated a cumulative risk of death over a 20-year period in people aged 15 to 35 years with AAOCA participating in competitive sports to be 6.3% for AAOCA of the left coronary artery and 0.2% for

right coronary artery. One would expect that the incidence of such events should be lower in the general population compared with competitive athletes.

Given that these studies of AAOCA have been performed in competitive athletes, the true incidence of sudden death in the general population due to AAOCA is unknown. Even less is known about the incidence of sudden death in asymptomatic patients with AAOCA. For decades, physicians and surgeons have attempted to risk-stratify patients. Nowadays, observation appears to be reasonable for asymptomatic patients with an AAOCA without ischemia, or physiological evaluation suggesting potential for coronary compromise.⁶

Unfortunately, surgery is not without its risks. Jegatheeswaran and colleagues⁷ report a small (10%), but not insignificant risk of developing new aortic regurgitation, particularly in patients who underwent commissural manipulation. Furthermore, 2% of patients developed a new decrease in ejection fraction following surgery.⁷ Of particular importance, 20% of patients had ongoing symptoms of ischemic chest pain.⁷ Thus, if a patient did not have any inducible symptoms on exercise testing, is it reasonable to observe these patients rather than to expose them to the risk of surgery, albeit small?

Patients presenting after hemodynamic collapse, with ischemic chest pain, or with a positive stress test should be offered surgery. It is clear what to do with these patients. It is not clear what to do with asymptomatic patients. Lifelong observation does not seem unreasonable. Or, do we offer surgery to address the lesion and potentially

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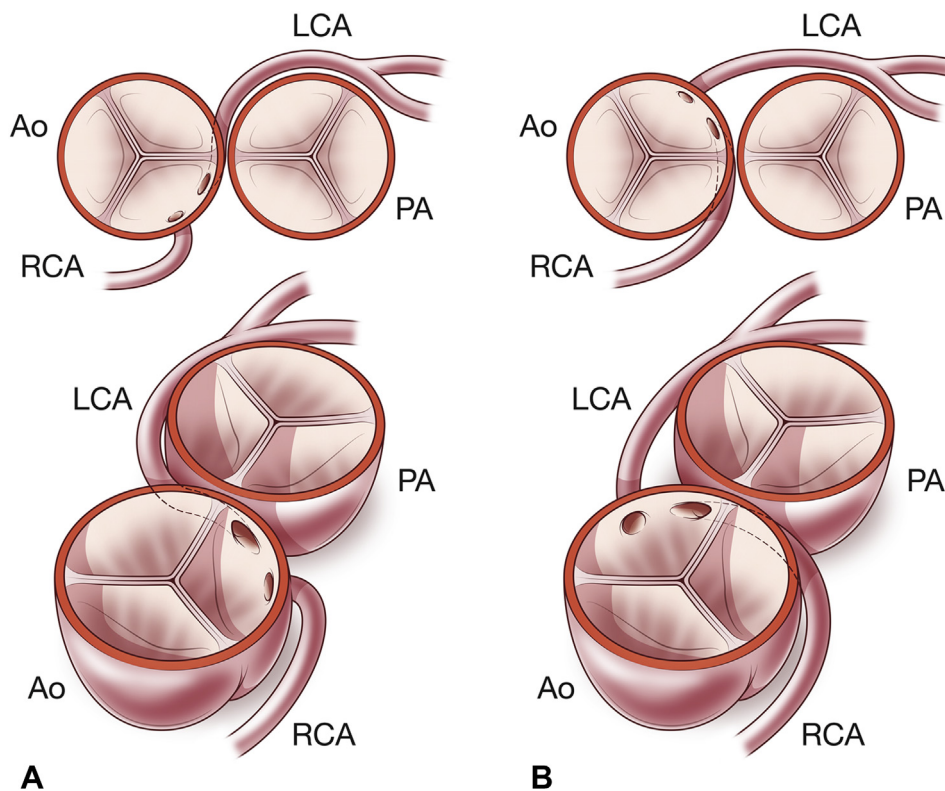


FIGURE 1. Anomalous aortic origin of the left (A) or right (B) coronary artery with an interarterial course. *Ao*, Aorta; *LCA*, left coronary artery; *PA*, pulmonary artery; *RCA*, right coronary artery.

introduce new cardiac complications? To do surgery, or not to do surgery? That is the question.

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