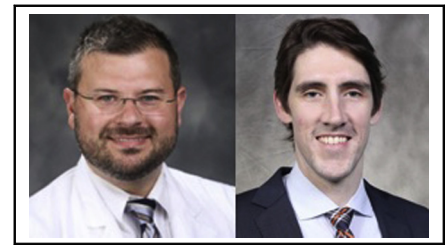


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Commentary: Aortic root endocarditis and coronary reimplantation

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Guenther and colleagues¹ describe their approach to a uniquely complex case of prosthetic valve endocarditis complicated by aortic root abscess. They employed a technique free of prosthetic material using aortic homograft for aortic valve and root replacement, bovine pericardial patch repair of the mitral valve, and cryopreserved superficial femoral artery interposition grafting (modified Cabrol) for restoration of coronary continuity in the setting of coronary ostia not amenable to direct reimplantation.

Choice of aortic root conduit in the setting of acute prosthetic valve endocarditis has been the subject of intense debate for decades. Hagl and colleagues² have long advocated for continued use of mechanical valved prosthetic conduit, provided that all infected tissue is debrided. Their largest series (28 patients) reported 96% freedom from reoperation or recurrent endocarditis at a median of 44 months. Conversely, Lytle and colleagues³ championed the use of aortic homograft as an alternative conduit citing anecdotally higher re-infection rates in patients with prosthetic conduit. Hagl and colleagues² 27-patient series likewise reported 96% freedom from reoperation at a mean of 47 months. The Ross procedure has also emerged as an alternative to prosthetic conduit. A recent 38-patient series demonstrated 89% freedom from reoperation or recurrent endocarditis at 10 years.⁴

CENTRAL MESSAGE

Complex aortic root replacement utilizing biologic conduits is feasible, but controversy remains regarding optimal conduit in the setting of acute endocarditis with regard to long-term outcomes.

Among the only studies to directly compare mechanical composite graft (n = 43), biologic nonhomograft conduit (n = 55), and homografts (n = 36) showed 74%, 89%, and 64% freedom from reinfection at 5 years, respectively ($P = .10$).⁵ Finally, although not specific to aortic root replacements, a large recent meta-analysis of 1 studies with 4393 patients undergoing either mechanical or bioprosthetic aortic valve replacement for infective endocarditis showed similar rates of reoperation between the 2 treatments (hazard ratio, 0.82; 95% confidence interval, 0.34-1.98; $P = .66$).⁶

Management of anatomically fixed coronaries that cannot be adequately mobilized for tension-free reimplantation in the setting of reoperation is an area that will benefit from continued study. In the noninfected field, a modified Cabrol technique with individual Dacron (Dupont, Wilmington, Del) interposition between the native coronary arteries and the aortic root has been shown to maintain 100% patency through a mean of 39 months in a series of 47 patients.⁷ In contrast, a small study of 19 patients whom underwent cryopreserved saphenous vein grafting for coronary artery bypass demonstrated quite poor patency at a mean of 7 months: 41%.⁸ There are no available data on patency of cryopreserved arterial conduit in the setting of coronary interposition or rate of reinfection in patients whom have undergone modified Cabrol with Dacron in the setting of endocarditis.

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Although each technique carries specific technical benefits and limitations, the above data highlight the importance and requirement of lifelong clinical and imaging surveillance in all patients undergoing root replacement for endocarditis. Each patient presents with unique clinical and anatomic considerations and surgical approach must be tailored to achieve optimal outcomes. This report describes an additional tool that may be utilized by surgeons managing complex endocarditis. Time and continued study will tell which intervention will most benefit the individual patient.

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