Commentary: Multidisciplinary management of pediatric endocarditis: No PIE in the sky

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Infected endocarditis (IE) in children is relatively rare, and, as such, there are only a few single-center reports on its surgical management. Current recommendations for the management of children with IE are largely derived from adult guidelines.1 However, the appropriateness of extrapolating adult guidelines to children is unclear; hence, there is a need for further data on outcomes of children undergoing surgery for IE. Furthermore, the burden of endocarditis in children is likely to increase due to greater use of endovascular prostheses and indwelling lines, as well as the growing population with repaired congenital heart disease.

In this issue of the Journal, an interesting article by Carrillo and colleagues2 is published that reviewed 94 children with IE who were treated between 2004 and 2020. Of these patients, 50% underwent surgery, whereas the rest were medically managed. The authors observed an early mortality of 6%, which is similar to previous reports of surgery for endocarditis in children.3,4 Interestingly, this was lower than the 20% mortality observed with medical treatment, and the 15% to 20% mortality observed in adults with infective endocarditis undergoing surgery.5

Of particular interest, Carrillo and colleagues2 provide details of their recently introduced protocol for the management of suspected and confirmed endocarditis, the Pediatric Infective Endocarditis (PIE) team. They emphasize a high index of suspicion for endocarditis in children with sepsis, multidisciplinary involvement, and early referral to surgery when indicated. Since introducing their standardized approach, they have observed a reduction in the time to diagnosis and definitive treatment, although these protocols are only in their infancy.

Efforts to improve multidisciplinary involvement and reduce delays in therapy are extremely important in the management of IE.6 There has been a move toward earlier intervention in recent years, based on evidence from adult populations.7 In addition to reducing the risk of thromboembolism and hemodynamic deterioration, an additional benefit of early intervention may be preservation of valve repairability. Importantly, in the study by Carrillo and colleagues,2 the rate of valve replacement was almost 80%, despite the fact that the mitral valve was the most commonly affected. In our experience, repair was feasible in nearly 60% of cases, and in mitral endocarditis in particular, repair was possible in more than 90% of patients, Figure 1.3,8 Valve repair is the optimal approach not only to minimize the use of prosthetic material but especially in children in whom prosthetic valve sizing and somatic growth provide additional challenges.

A move to earlier diagnosis and surgical treatment may mean that some valves are operated on earlier in the course of endocarditis, when the valves are more likely to be repairable. This approach may be more reasonable in children in whom the risks of surgery appear to be less than those observed in adults with infective endocarditis. The
The pathway proposed by Carrillo and colleagues is logical and promises to improve diagnosis and timeliness of treatment in endocarditis in children. As the cohort of patients treated with their algorithm increases in size, it will become apparent if multidisciplinary care and earlier diagnosis improve outcomes in these children. In the meantime, as a specialty we should strive to achieve repair whenever possible for children who require surgery for endocarditis.

References

FIGURE 1. A large vegetation affecting the A1 segment and anterolateral commissure of the mitral valve in an 8-year-old patient. Despite the extensive destruction of the segment, it was able to be repaired using a pericardial patch and neochordae.