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heart disease are actually “permanent,” and we frequently exchange one problem today for another tomorrow, again emphasizing motives, values, and priorities. Even while acknowledging the lethal nature of heart valve disorders, we appear satisfied to “kick the can down the road,” deferring definitive management in lieu of temporary fixes. In a society now dominated by immediate information exchange, do trends in cardiovascular disease management reflect an inexorable move toward easier and quicker problem resolution instead of longer-lasting solutions for difficult problems? Does avoiding the tough solution truly yield “quality” when the problem is incompletely managed? This strategy may be valid for mundane issues but seems ill advised when applied to life-threatening difficulties.

Commenting on a previous report of extreme durability from the ball-in-cage valve and perhaps reflecting skepticism toward contemporaneous therapies, Starr and Grunkemeier⁷ observed “the satisfactory functioning of an artificial heart valve to 24 years is a rather notable event. It requires that both the patient and the valve continue to function.” Of course, these concepts remain relevant for contemporary prostheses and patients, but our concepts of *functioning* appear to have evolved.

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VALVE CHOICES: NO FREE LUNCH Reply to the Editor:

A multifactorial paradigm shift in the management of valvular heart disease has occurred during the last several decades, from the introduction

of the Starr-Edward valve to the multiple generations of mechanical and bioprosthetic valves and beyond to the revolutionary transcatheter valve technologies. Likewise, a parallel evolution of digital technology has resulted in well-informed patients who are able to weigh the risk of lifelong anticoagulation associated with mechanical valves against the risk of future interventions associated with bioprosthetic valves, tempered with the prospect of a valve-in-valve procedure. Nonetheless, the durability and engineering prowess of the Starr-Edwards and later generations of mechanical valves are noteworthy and cannot be ignored.¹ As Atkins and colleagues² point out in their letter to the Editor, the valve choices of patients and practitioners have clearly shifted toward a strong preference for bioprosthetic valves. Arguably, it appears that enthusiasm regarding transcatheter approaches and lifestyle choices in younger patients is the principal contributor to this overall trend.³⁻⁵ A retrospective review of the Society of Thoracic Surgeons' database showed bioprosthetic valve use had increased from 43.6% in 1997 to 78.4% in 2006.⁵ Similar trends have been observed at our institution, both for patients aged less than 60 years (with an increase from 20% to more than 60%)⁶ and for those aged less than 50 years (with an increase from 16% to 47%).⁴ We therefore expect this trend to continue further in the years ahead.

We agree with Atkins and colleagues² that our concept of valve function appears to have evolved. The interpretation of the data is made more difficult by the difference between valve-related deaths and all-cause mortality and by the difference between bioprosthetic valve degeneration and the need for reoperation. Moreover, the validity of the traditional outcome measure of all-cause mortality is in question. For instance, a recent retrospective study of 416 patients aged less than 60 years who underwent bioprosthetic aortic valve replacement demonstrated an overall survival at 15 years of 62.1% but a freedom from valve-related death of 97.1%.³ Our own retrospective review demonstrated that the increased risks of reoperation with bioprosthetic valves and of major bleeding incidents with mechanical aortic valves were not reflected

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in the midterm and long-term survival differences between the 2 groups.⁴ As such, mortality is not the only measure of long-term outcomes. A rather important measure (and one that is almost never reported) is the quality of life of patients related to lifelong anticoagulation therapy.

The debate regarding bioprosthetic versus mechanical valve choice is complex and will continue until the optimal valve has finally been designed. At the end of the day, what matters is the fundamental fact that valve choice comes at a cost, and the choice in any specific case depends on which cost (risk of bleeding or thromboembolism vs reoperation) the patient is willing to bear. It is crucial for physicians to educate their already well-informed patients about the risks and benefits of their choices, both to clarify expectations and to help determine the best path forward on a case-by-case basis. As such, when it comes to valve choice, there is no free lunch.

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