undergoing surgical treatment for streptococcal infection was higher (MV repair, 60%; MVR, 48%), although no description of the responsible streptococcal strains was reported. The low rate of repair might be related to the higher aggressiveness of *Staphylococcus aureus* infection. Nevertheless, from this large Asian experience, it appears that the repair practice for mitral IE is still very heterogeneous across the world and remains in the hands of experienced centers. Is it time for a subspecialty within the subspecialty?

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MINIMIZING THE GAP BETWEEN EXPECTATIONS AND REALITY OF MITRAL VALVE REPAIR IN

INFECTIVE ENDOCARDITIS

Reply to the Editor:

We thank Nappi and colleagues for their letter in response to our report, which used a nationwide population-based database to demonstrate the superior outcomes achieved through mitral valve (MV) repair compared with MV replacement in patients with infective endocarditis (IE), even after correction of confounders including basic

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demographics, comorbidities, and level of hospital.¹ Shortly before the publication of our study, Toyoda and colleagues² used the New York State database and reported similar findings in the *Journal*. In our study, the proportion of MV repair was 21.2% and varied widely between hospitals, ranging from 45.3% in centers in the highest quartile of MV repair volume to 3.3% in the lowest volume quartile.¹ Despite the known benefits of MV repair relative to MV replacement and guideline recommendations,³ the overall repair rate in the real world has not been ideal; as Nappi indicated, “The expectation for MV repair in IE has not been realized,” especially with respect to procedures performed in hospitals or by surgeons with less experience in MV repair.

IE surgery is one of the few procedures in which cardiac surgeons have the privilege of performing effective treatment without the challenge of endovascular intervention. As cardiac surgeons, we are responsible for providing patients with the best surgical results. To bridge the gap between expectations and reality, several steps can be taken. First, publicizing current evidence and the latest information is crucial, because it makes an increasing number of cardiac surgeons and cardiologists aware of the benefits of MV repair in patients with IE and that the repair rate can potentially reach 50% or more in the hands of experienced surgeons.⁴ Second, adopting a coordinated multidisciplinary approach in which various professionals are brought together to comprise a Heart Team for decision making of early referral to surgery is also crucial to improving the repair rate. Third, implementing a reasonable algorithm that describes various repair techniques according to the extent of MV destruction should be helpful.⁵ In the future, more convincing evidence concerning this issue will be required.

Finally, the concept of “subspecialty within subspecialty” deserves considerable emphasis. Toyoda and colleagues² analyzed the number of MV operations for isolated active IE in New York State between 1998 and 2010, with a median of 2 cases for each surgeon. In other words, approximately half of the surgeons performed 2 or fewer MV operations for IE during a period of 12 years. It thus appears difficult to accumulate the adequate experience that would translate to an increased MV repair rate. Furthermore, operations performed in low-volume hospitals or by low-volume surgeons were associated with fewer optimal outcomes. We therefore believe that early referral of patients with MV endocarditis to centers experienced in MV repair can increase the MV repair rate and improve patient outcomes.

Indeed, it is time for a subspecialty within a subspecialty. And it is time to realize the full potential of a subspecialty

within cardiac surgery for the treatment of MV endocarditis to meet our patients' expectations of the best possible outcomes.

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MITRAL VALVE REPAIR VERSUS REPLACEMENT FOR INFECTIVE ENDOCARDITIS, AGAIN

Reply to the Editor:

In a letter to the Editor published in this issue of the *Journal*, Nappi and Spadaccio,¹ from Paris and Glasgow, comment on an earlier article by Lee and colleagues,² from Taiwan. In that article, Lee and colleagues² analyzed a series of 1999 adult patients in their country who had undergone first-time mitral valve surgery because of native valve endocarditis and found that “mitral valve repair for infective endocarditis has better perioperative results and lower rates of late mortality and composite end point outcomes than mitral replacement, and is recommended whenever possible, even for patients with an active infection status.” This analysis, which was based on their country's database, also showed that “patients were more likely to undergo valve replacement (78.8%) than repair

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(21.2%), but with a trend to increasing repair rate during the period.”² Nonetheless, “in low-volume centers, the repair rate was significantly lower and the beneficial effect of repair was less apparent.”² Lee and colleagues,² concluded with a plea for repair rather than replacement of the mitral valve in this setting.

In an editorial accompanying that article by Lee and colleagues,² I³ then supported this plea but raised the point that mitral valve repair requires experience that may not be present in most institutions and individual surgeons of the “real world.” This is also implicitly acknowledged by Lee and colleagues.² This was also an indirect comment in an earlier article on the same subject published by the New York group of David Adams,^{4,5} well known for their expertise in mitral valve repair, that indicated a repair rate that increased from 10.7% to 19.4% toward the end of their experience, a rate not much different from that reported by Lee and colleagues.²

Preference for repair is obvious in patients in whom the infectious process is either healed or limited to a localized area of the valve leaflets or chordal apparatus. And it is in this respect that the letter from Nappi and Spadaccio¹ is pertinent. They emphasize the value of using homografts and autografts or other homologous tissues to preserve valves with a more extensive infectious process, techniques that they and other authors have mastered and proposed before. Whether some of these methods can be considered in the repair category is debatable, but they still achieve the main objective of avoiding the implantation of a prosthesis, which should be used only in grossly destroyed valves and in those colonized with highly aggressive microorganisms, such as *Staphylococcus aureus* and fungi.

In conclusion, it is now widely accepted that mitral valve repair, whenever feasible, yields better short and long-term results than replacement, even in infected native valves. Surgeons should therefore become acquainted with and master the multiple techniques that have proved useful in this setting. Otherwise, these patients should perhaps be referred to more experienced surgeons and centers.

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