Risks of Valve Replacements in Young Women
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Attempts to evaluate performance of cardiac valves by retrospective analysis are notoriously difficult because of the complexity associated with preoperative illnesses, types of replacement valves available or used, use of anticoagulant medications in some but not all patients, and a myriad of other differences. When a diverse group of women having multicultural backgrounds receive valves under various circumstances and at various intracardiac locations over an interval of ≥20 years, the difficulty of showing by rigorous statistical techniques that differences in individual outcomes are related to demonstrable or predictable circumstances relating to the valve is very great.

Nevertheless, Dr North and her associates have carefully analyzed their data with 93% complete follow-up in 232 patients who received 323 valves between 1972 and 1992 and have presented the findings in as clear a manner as possible.

Principal conclusions include the observation that prosthetic valves had higher rates of thromboembolism; bioprosthetic valves were less durable; and homograft valves, suitable only for aortic valve replacement, were not useful for the much larger proportion of young women who required mitral valve replacement.

For young women who require heart valve replacement, the current need is for bioprosthetic valves that can be used in either the aortic or mitral position and that do not require warfarin-type or heparin anticoagulants.

For many patients, it has become possible to perform valveoplasty, which allows preservation of the native mitral valve apparatus. The durability of mitral valve repair operations performed for degenerative disease seems adequate, with 90% freedom from reoperation reported by Gillinov and associates from the Cleveland Clinic. Thus, many patients with mitral valve disease who would have undergone valve replacement 10 or 15 years ago would now be candidates for reparative operations. In mitral stenosis, compared with degenerative disease with predominant mitral insufficiency, the availability of prosthetic valves, such as the St Jude Medical mitral prosthesis, raises the question whether such modern valves may replace the need for reparative operations for mitral stenosis.

Together with the availability of better reparative procedures and superior replacement valves, the techniques for repairing or replacing both mitral and aortic valves have been altered to provide less traumatic and safer procedures. Although minimally invasive approaches for valve surgery may not be applicable for some patients, the majority of candidates for primary valve replacement or repair operations will experience a shortened hospital stay and accelerated recovery with minimally invasive procedures.

Another cause of complications for patients during the past several decades has been atrial fibrillation. New pharmacological entities as well as less traumatic cardiac surgical injury may provide some promise of relief from atrial fibrillation in the short term as well as the long term after cardiac surgery.

To summarize briefly, with regard to the better expected outcome for young women with a need for surgical treatment of valvular heart disease, one may consider the following (which represent improvements not apparent in Dr North’s data).

1. Both bioprosthetic and homograft aortic valve replacement devices will probably last 12 to 15 years or more for most patients.
2. Bioprosthetic valves in the mitral position probably will last >10 years but will not do as well as aortic replacement valves.
3. Reparative operations on the mitral valve may enable a substantial number of women with rheumatic as well as degenerative valve disease to postpone valve replacement for ≥10 years in selected patients.
4. Thromboembolic complications from currently used prosthetic valves are less likely to occur even when lower doses of anticoagulant drugs are used.

It seems probable that results overall in young women through pregnancy should be improved because of better valves available, but there is still a need for more durable bioprosthetic valves.

References

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