Commentary: Nothing Lasts Forever

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Running Head: Commentary

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Central Message

Although conduit longevity may be important, the health of the right ventricle is even more important.

Central Picture Legend: Nothing lasts forever
Van de Woestijne and colleagues have reported their series of 70 patients who underwent placement of a right ventricle to pulmonary artery conduit in patients with pulmonary atresia with ventricular septal defect (1). The majority (47) of the patients in this series had systemic to pulmonary collateral arteries (SPCA), while one-third (23) did not have SPCA. The median duration of follow-up was 20 years—freedom from any re-intervention was 15%, freedom from conduit replacement was 32%, and there was no difference in conduit longevity in those with or without SPCA.

One of the great strengths of this paper is the duration of follow-up—a remarkable 20 years. An extended period of follow-up is essential in evaluating the durability of all valve replacement options given the fact that valve failures occur in a non-linear timeline. Essentially all valve replacement options perform well in the early years or else they would not remain a viable option. By definition then, it is the mid-term and late performance that really defines the success or limitations of any given strategy. This conundrum has been highlighted very nicely in recent years by the transcatheter aortic valve replacement (TAVR).

Unfortunately, conduit longevity does not tell the whole story. Pulmonary artery conduits are attached proximally to the right ventricle, and the health of the right ventricle is crucially important to the longevity of the person. If I were to choose between a healthy conduit or a healthy right ventricle, I would pick the healthy right ventricle every time. There were several decades in the 1970’s through the 1990’s where pulmonary regurgitation was ignored and the consequence was irrevocable damage due to the right ventricle which often manifested as sudden death. In recent years we have developed criteria for when to intervene on conduits before the right ventricle is permanently damaged (2). Following these criteria means that some conduits will be replaced earlier in exchange for preserving right ventricular function.
In the final analysis, the goal of maintaining conduit longevity must be counterbalanced by the goal of maintaining a healthy right ventricle—a sort of equipoise. Or stated differently, there should be a recognition that “Nothing lasts forever”.
References

