To the Editor:  

In this issue of the Journal, Felmy and colleagues1 retrospectively reviewed their 2-decade experience with the surgical repair of peripheral pulmonary artery stenosis (PPAS). The authors should be congratulated for their outstanding results, with low mortality and a 70% reduction in right ventricle to aorta peak systolic pressure ratios. The authors described the evolution of their surgical techniques and shared their excellent midterm outcome at 26 months (range, 1-220 months). Interestingly, during follow-up, cardiac catheterizations were performed in 59% of the survivors, with 90% maintaining pressure ratios <0.50. Of these 82 postoperative catheterizations, only 19 (23%) were interventional, consisting of balloon angioplasty. Angioplasties were directed at 2 to 7 segments with variable angiographic and hemodynamic improvement. Since the anatomic pathology substrate is highly difficult, it would be interesting to get more information and details about the interventional treatments. Indeed, the authors did not comment on the type of balloon used, balloon/stenosis ratio, inflation pressure rate, inflation duration, balloon waist resolution, procedure length, radiologic exposure, and complication rate. Moreover, they stated that the results of interventional catheterization techniques have been extremely disappointing, citing 2 papers dated back to 2001 and 2003.

In the last 20 years, interventional catheterization techniques have dramatically evolved, and new and more sophisticated tools have been included in the routine armamentarium of congenital interventionists. High-pressure balloons in Alagille syndrome have been used with significant acute increase in the minimal luminal diameter and interval growth in comparison with lesions in which a bare metal stent was implanted, despite no significant change in right ventricular systolic pressure.2 Moreover, cutting balloons of every size, length, and profile are now available, which can guarantee more regular luminal cuts and controlled tears in thickened lesions before using common high-pressure balloons.3 A small promising experience exists in the use of drug-eluting balloons in these conditions, with some improvement in in-stent restenosis and possible benefit in the arteriopathy due to the local release of the antiproliferative drugs.4

Finally, PPAS stenting as an option was never mentioned, and patients with previous stenting were excluded. It would be interesting to know the authors’ thoughts and practice on this issue.

In conclusion, the question regarding the role of transcatheter interventions in PPAS is of some interest and remains open, considering the rarity of this condition and the heterogeneity of percutaneous treatments offered to these patients worldwide. Probably, some solutions will come from the development of computational fluid dynamics models to better predict PPAS intervention results, as shown by the Stanford group itself,5 or from the development of new technologies that could help in these challenging situations.

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