

challenging procedures in 2 and uneventful in 12. Kappa agreement coefficient was 0.44, $P=0.007$.

Conclusion 3D printed cardiac models are useful to predict challenging PPVI but lacks accuracy to size the outflow tract. Prospective studies are needed to corroborate these preliminary results and better define the interest of this new tool before PPVI.

Disclosure of interest The authors have not supplied their declaration of competing interest.

<https://doi.org/10.1016/j.acvdsp.2019.06.013>

PC 6

Longterm outcome after branch pulmonary artery stenosis stenting in congenital heart diseases

Iris Ma^{1,2}, Nathalie Soulé¹, Jacques Poinot¹, Jean Marc El Arid¹, Paul Neville¹, Bruno Lefort^{1,2,*}

¹ Congenital Cardiology Unit, CHU Tours, 37000 Tours, France

² Tours University, 37000 Tours, France

* Corresponding author.

E-mail address: lefort81@gmail.com (B. Lefort)

Abstract

Introduction Primary or secondary branch pulmonary artery (BPA) stenosis complicates the management of congenital heart diseases. Surgical pulmonary plasty is the gold standard treatment, but is associated with a low freedom from reintervention rate of 46% at 10 years [1]. As an alternative, percutaneous or intraoperative stents have been implanted to improve efficiency, but limited data are available concerning longterm outcome [2–5]. We hypothesized that prognosis of intraoperative or percutaneous stent implantation in BPA stenosis is good with further re-expansion and limited complications.

Methods We conducted a retrospective cohort study at CHU de Tours. All stents implanted by surgery or catheterization in BPA with a minimum follow-up of 12 months and at least 1 catheterization control have been included. The primary endpoint was composite, combining cardiovascular mortality, surgical stent removing or percutaneous implantation of a new homolateral stent.

Results Between February 2007 and December 2017, 76 stents in 51 patients were included (62 stents implanted by surgery, 14 by catheterization). At the time of implantation, patients had mean

age and weight of 56.3 months (IQR 65.4) and 17.4 kgs (IQR 11.0) respectively. There was 68.4% of secondary stenosis. Mean BPA minimum size was 4.1 mm (mean Z-score of -5.0), and mean initial stent diameter was 9.1 mm. During a mean follow-up of 5.3 years (range 0–11,2 years), freedom from primary endpoint was 86.8% (CI 79.6–94.8%) at 1 year, 78.9% (CI 70.2–88.6%) at 2 years, 71.5% (CI 61.9–82.7%) at 5 years and 69.6% (CI 59.6–81.2%) at 10 years (Fig. 1). Among surviving stents, mean BPA size Z-score at last evaluation was increase of $+4.69$ compared to initial size ($P<0.001$) (Fig. 2). A lower BPA size at implantation seemed to be associated with a worse outcome of the stent ($P<0.05$).

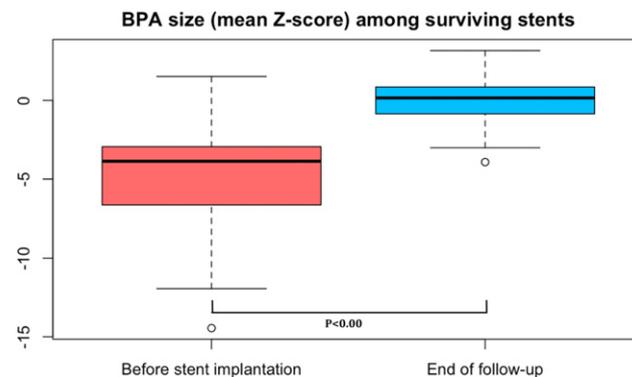


Fig. 2 Branch pulmonary artery (BPA) size (mean Z-score) before stent implantation and at the end of follow-up among surviving stents.

Conclusion Our results suggest that percutaneous or intraoperative stent implantation could constitute a good alternative to BPA plasty alone.

Keywords Congenital heart disease; Branch pulmonary artery stenosis; Stent

Disclosure of interest The authors declare that they have no competing interest.

References

- [1] Cresalia NM, Armstrong AK, Romano JC, Norris MD, Yu S, Rocchini AP, et al. Long-term outcomes after surgical pulmonary arterioplasty and risk factors for reintervention. *Ann Thorac Surg* 2018;105(2):622–8.
- [2] O’Laughlin MP, Perry SB, Lock JE, Mullins CE. Use of endovascular stents in congenital heart disease. *Circulation* 1991;83(6):1923–39.
- [3] Hallbergson A, Lock JE, Marshall AC. Frequency and risk of in-stent stenosis following pulmonary artery stenting. *Am J Cardiol* 2014;113(3):541–5.
- [4] Duke C, Rosenthal E, Qureshi SA. The efficacy and safety of stent redilatation in congenital heart disease. *Heart Br Card Soc* 2003;89(8):905–12.
- [5] Ooi YK, Kim SIH, Gillespie SE, Kim DW, Vincent RN, Petit CJ. Pre-mounted stents for branch pulmonary artery stenosis in children: a short term solution. *Catheter Cardiovasc Interv Off J Soc Card Angiogr Interv* 2018;92(7):1315–22.

<https://doi.org/10.1016/j.acvdsp.2019.06.014>

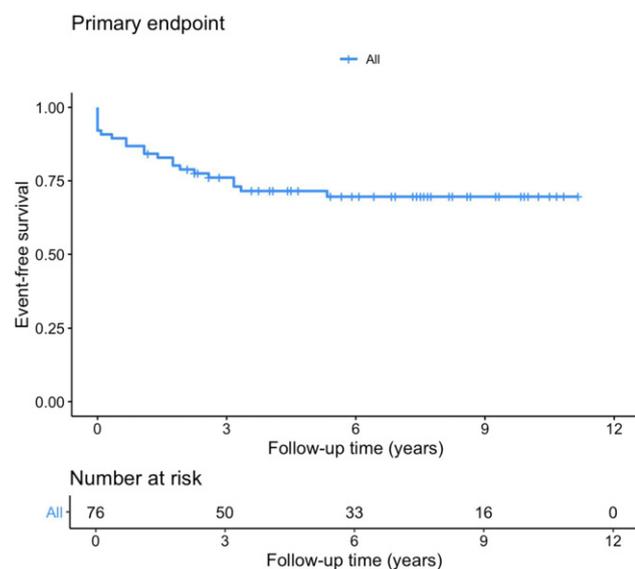


Fig. 1 Freedom from cardiovascular mortality, surgical stent removing or percutaneous implantation of a new homolateral stent (Survival analysis Kaplan-Meier).