

# Y-STENTING IN COMPLEX PULMONARY ARTERY BIFURCATION STENOSIS

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## BACKGROUND

In complex pulmonary artery bifurcation stenosis (PBS) the distal pulmonary artery (PA) as well as the right and left PA ostia are involved. Surgical angioplasty in PBS often results in residual stenosis. An interventional approach with stent implantation is an alternative treatment to release this three-location obstruction. However, literature on the effectiveness of different interventional strategies for PBS treatment is limited.

## OBJECTIVE

We report on 11 children who were treated for complex PBS using the Y-stenting technique. Procedure data and long-term outcomes were analyzed.

## METHODS

A stent is placed traversing the MPA to one PA branch. A telescopic system, prepared outside the patient, is used to obtain access to the contralateral PA through the stent struts. By balloon dilatation the stent struts are opened. The guide catheter is advanced through the strut opening by withdrawing the coronary balloon on deflation ("anchor" technique). Next, a second stent is advanced through the stent struts into the contralateral PA. The second stent is placed with a 3-4 mm overlap with the MPA stent (clinched) or in the PA ostium (non-clinched).

## RESULTS

11 Y-stenting procedures were performed, 9 in the main pulmonary bifurcation and 2 in the PA periphery. The youngest patient was 4 months old and weighted 7.4 kg. The oldest patient was 19.2 years old with a weight of 62 kg. Control angiography showed unrestricted blood flow after all procedures. No major or minor adverse events were seen after stent implantation. 6 children needed re-intervention due to restenosis during median follow-up of 39 months. 4 of them received non-clinched bifurcation stents during the initial procedure.

## CONCLUSION

Y-stenting was a safe and effective treatment in 11 children with complex PBS. It creates an artificial bifurcation close to the natural anatomy. Stenting sequence, the right materials and the telescope- and anchor technique are essential for a successful procedure. Due to high rates of restenosis in non-clinched stents, bifurcating stents should always be clinched.