

Long-term results after implantation of an unrestrictive Babystent in the infant population

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Rationale: All conventional stents suited for the implantation in newborns or infants have a maximum dilatable diameter below the expected growth of nearly all vessels in those patients. Either their use has to be avoided or later surgical removal is implicated.

Method: The Babystent (BS) is a premounted, balloon expandable metal stent of 6 mm diameter and 20 mm length. Due to its special design the stent struts will open up along the full length of the stent from a diameter of 10 mm on, so that there is no limiting upper diameter.

Population: Between 2010 and 2014, seventeen BS were implanted in 14 patients (mean age 4 months [1 – 14 months]). All but one stent were placed into the aortic isthmus for coarctation. One stent was used to enlarge the superior vena cava in a 6 months old after Glenn anastomosis.

Redilations were performed in all patients between one and 7 times. One BS was falsely explanted by a surgeon not realising the nature of the BS. Summarized follow-up time is 47.2 patient years ranging from 2 to 6 years.

Results: Sixteen BS are still in place in 13 patients. Circumferential integrity is lost in 5 patients with redilations of minimal 10 mm. Mean BS diameter is 8.8 mm [7 – 12 mm]. None of the patients has received a different stent in the position where the BS was implanted, no related re-operation was necessary. In-stent tissue proliferation was found early in 5 BS, but was considered mild. A small dissection occurred in one patient after redilation.

Conclusion: The BS shows good results in treating coarctations. Despite intimal proliferation occurred quite frequently it was found early after implantation and did not grow later on. Multiple BS implantations in one patient are an option in hypoplastic vessels. The loss of the circumferential integrity of the BS does not necessarily lead to collapse of the stented area. As the BS comes premounted and does not tolerate curvy delivery routes, the treatment of coarctations seems to be the optimal location for BS placement.