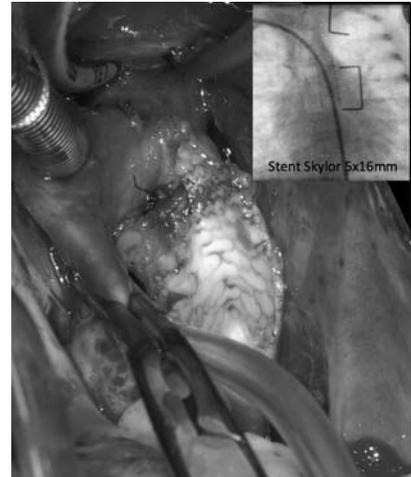


## Coronary Stent Implantation in Critical Aortic Coarctation as Bridging Therapy to Surgery in Very Low Birth Weight Infants

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**Introduction** Surgical treatment of critical aortic coarctation (CoA) is extremely difficult in very low birth weight (VLBW) newborns and is usually postponed until at least 2 kg of weight. Sometimes earlier treatment is warranted due to brachiocephalic hypertension, systemic underperfusion or pulmonary overflow. Surgery remains a high-risk option at this weight when prostaglandin infusion had to be discontinued.



**Objectives** To review the results of primary interventional coronary stent implantation as bridging therapy to surgery in VLBW newborns with CoA.

**Methods** Clinical, echocardiographic, catheterization, surgical and neurodevelopmental data were retrospectively reviewed of all VLBW newborns who underwent primary stent implantation.

**Results** Between 2010 and 2015, 5 VLBW neonates underwent primary stent implantation. In all children initial treatment with prostaglandin was discontinued due to severe side effects and/or ineffectiveness. Median age and weight at intervention were 14 days (range 12-16) and 1200 gram (680-1500) respectively. Median invasive gradient was 42.5 mmHg (40-45) before and 2 mmHg (0-10) after stenting. Coronary stent diameter ranged from 3 to 5 millimeter. The femoral artery used for intervention was occluded in 4/5 infants without clinical compromise. There were no other procedural complications. In one infant early restenosis and severe aneurysm occurred 2 months after stenting and was treated with covered coronary stents. To date 4/5 children received surgical correction at a median age of 189 days (111-130) and weight of 5400 gram (4500-6800). No reinterventions were indicated during a median postoperative follow-up of 821 days (186-1622). Neurodevelopmental outcome was unremarkable in all patients. Median Griffiths scores were normal and comparable between patients and their siblings (4/5 patients were gemelli), 89.5 (80-102) and 88 (81-107) respectively.

**Conclusions** Coronary stent implantation is a feasible bridging therapy to surgical repair in VLBW newborns with CoA in whom prostaglandin therapy fails.