BeGrow™ - a new stent with special design for growing vessels: First results of a preclinical animal study

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Background: There still does not exist an ideal treatment solution for stenotic pediatric vessels with growth potential. The presented cobalt-chromium-stent (BeGrow™, Bentley Innomed GmbH, Germany) with a designated diameter of 5-6mm can be introduced and implanted via a 4 Fr sheath. It allows redilation up to 12mm with preserved stent integrity and stent length. Beyond this diameter it can be opened/dilated with the help of predetermined circular breaking points. Thereby this stent allows a thorough interventional treatment approach into adulthood. Methods and results: Within the animal study 11 pigs with a body weight of 4-5kg received in each case 3 BeGrow™ stents into the abdominal aorta via a transfemoral vessel access. Implantation procedure was successful and uneventful in all. Within the following 3-4 months the stents were redilated and finally opened in repeated procedures up to a vessel diameter of 12-18mm. At each step of the procedure some of the stents together with the circumferential aortic vessel wall were analysed histologically. They did not show any signs of inflammation or thrombus formation. The results will be presented in detail.

Summary: The BeGrow™ stent can be implanted safely and straightforwardly via a 4 French sheath. Repeated redilations without stent shortening are possible. Beyond 12mm stent diameter an opening of the stents can be achieved under preserved vessel configuration. A clinical multicentre trial is in preparation.