

INITIAL CLINICAL RESULTS WITH THE NEW BEGRAFT AORTIC COVERED STENT IN COARCTATION OF THE AORTA

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OBJECTIVE

Report initial experience with the new premounted BeGraft Aortic covered stent (Bentley; Hechingen –Germany) in the treatment of coarctation of the aorta.

BACKGROUND

Transcatheter treatment of coarctation of the aorta with covered stents is safe and effective and reduces the probability of aortic wall injury. However the need for relatively large delivery systems and risk for femoral arterial damage, rigid stents and flimsy PTFE covering are significant limitations for use and success.

MATERIALS AND METHODS

The BeGraft Aortic Stent Graft System consists of a 0.035" guide wire-compatible stent delivery catheter with a premounted ePTFE-covered balloon-expandable Cobalt Chromium stent. Balloon sizes range from 12[9Fr] - 24mm[14Fr] and stent length ranges from 19 - - 59 mm.

PATIENTS

7 patients [6M, 1F] of median age 22.1 years [9.2-35.4] and weight 64.4kgs [26.3-104.7] with coarctation of the aorta [2 native, 2 s/p surgical repair, 2 s/p stent, 1 residual aneurysm s/p endocarditis and CP stent] underwent transcatheter stent implantation via a 9Fr femoral arterial access. In all cases a 12mm Begraft Aortic stent was used and post dilated through the 9Fr sheath as needed.

RESULTS

The stent was successfully implanted in all cases. Systolic peak pressure gradient decreased from 18.7 ± 7.8 to 2.3 ± 2.1 mmHg [$p=0.001$] and the diameter of the coarctation increased from 8.2 ± 2.6 to 15.1 ± 1.6 mm [$p=0.002$]. The final stent diameter was at least 90% of the transverse arch diameter. There was no acute aortic wall injury nor other immediate complications and 1 patient underwent successful occlusion of the pre-existing aneurysm. At one month follow up all patients are well with normal femoral pulses and normotensive.

CONCLUSIONS

The initial results of treatment of types of coarctation of the aorta with the BeGraft Aortic Stent are encouraging. The potential advantage of a relatively low profile [9Fr] delivery system and premounting on a high pressure balloon and ability to post-dilate should allow for safe use in smaller patients. Long

term outcome of blood pressure control, stent integrity and prevention of aortic wall injury need to be evaluated.