The Colt device – branched stent-graft for TAAA treatment

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Aim
We present a single center results of the treatment thoraco-abdominal aneurysms (TAAAs) with the use of new stent-graft device. The Colt is a self-expanding stent-graft, composed of nitinol metal stents creating a special exoskeleton with asymmetric springs covered with polyester material. The main body is available in two different diameters on both ends with three lengths. It has four branches directed downward and coming from the main stent graft at the two levels. It gives the physician an opportunity to decide which branch to choose for the target vessel. The device may be implanted alone or extended proximally and distally.

Patients and methods
Between August 2015 and January 2020, twenty one Colt stent-grafts were implanted in 20 males and one female (aged 56-80) with a TAAAs (eight Type II; ten Type III; three Type IV). The mean aneurysm diameter was 73.4 mm (range 64-83) and all patients were asymptomatic. In two cases Colt was implanted as a rescue device for failed EVAS.

Case 1
• 69y male, thoracoabdominal aneurysm (Type II)
• h/o: open repair of rAAA – tube prosthesis

Case 2
• 80y male, thoracoabdominal aneurysm (Type III)
• h/o EVAS two years before, Type Ia endoleak

Results
There were no intraoperative deaths. No paraplegia has been noticed. Problems with the cannulation of the left renal artery required implantation of a custom made stent-graft with upward branches in two cases. One patient died on the 7th postoperative day from multiorgan failure. One patient had extended hospital stay due to pancreatitis. During the course of follow-up (range 1-53 months) all prostheses have remained patent, except one branch to the coeliac trunk. Two type II endoleaks were treated conservatively, one patient underwent angioplasty with stenting for bilateral restenosis of renal branches, one renal branch dislocation was reconnected with Viabahn and one Type Ia endoleak was treated with molding balloon.

Conclusion
This study shows the feasibility of a new custom made extra design stent-graft device for treating TAAA. The Colt stent-graft can accommodate a variety of TAAA anatomy, however long-term follow up and a larger group of cases are needed to prove applicability of this novel device in the treatment of TAAA.

More details about the use of Colt device for failed EVAS will be presented on 30 Jan 2020 at Speaker’s corner Room 7 at 11:40