Fenestrated AAA

We Can Overcome All Complex Anatomy





Complex Anatomy Aneurysms

16-42% of all AAA repairs

Short neck (< 10 mm) Neck angle over 60° Neck thrombus Neck calcification Nonparallel neck configuration Large neck diameter Involvement of Visceral arteries Involvement of iliac arteries









Limitation Proximal aneurysm extension

Excessive angulation at the visceral Segment

Inadequate renal artery anatomy multiple small accessory arteries or early renal artery bifurcation

Graft of the shelf Custom made

P branch Zfen, Custom



9 fold increase from 2012-2015



Anaconda

Landing zone Diameter Landing zone angle Access >15 mm Aortic
17.5 and 31 mm
up to 90°
Fem and or
upper limb





Custom made



History and Advances

John Anderson 1998 Fenestration Non reinforced, Reinforced Bridging stent None, Uncovered, Covered Low profile Diameter reducing ties Preloaded wires and catheters Imaging CT axial, Center line 3D Workstation 3D models Hardware Carm, Fixed system, Hybrid Theatre, Cone beam CT Software Fusion Contrast Iodine based, Carbon Dioxide





Outcomes of Fenestrated Grafts Type 4 and pararenal

Zfen and Cook Fenestrated Anaconda Global Fact

Single-center reports Multicenter registries Systematic reviews and metanalyses

Technique is reproducible		
High technical success rate		99%
Secondary intervention	Early	2.7%
	Late	14.7%
Morbidity Total (renal commonest)		57%
Low mortality		0-8.9%
Survival	1yr	90%
	3yr	79%
	5yr	65%
Late Vessel Occlusion	1yr	99%
	3yr	91%
	5vr	86%

Van Calster et al J Vasc Surg 2019, Kristmundsson T et al J Vasc Surg 2014, Amiot S et al Eur J Vasc Endovasc Surg 2010, Verhoeven EL et al Eur J Vasc Endovasc Surg 2010, Eagleton et al J Vasc Surg 2016, Oderich GS et al J Vasc Surg 2017, Oderich GS et al J Vasc Surg 2014; Varkevisser J Vasc Surg 2018



Conclusion

Matured Acceptable alternative to open repair especially high risk

Fenestrated grafts: NOT for all complex aneurysm anatomy Elective vs emergency

Complete endovascular approach Parallel Grafts, Branch Grafts, Hybrid grafts may be Possible for all complex anatomy

Long term durability Cost effectiveness needs further research needs further research

Availability of grafts Expertise Learning Curve Planning, Practice, Volume, Patience, Dedication



