For Juxta- and pararenal AAAs:
Snorkel/chimney versus Fenestrated:
THE TWO TECHNIQUES ARE COMPLEMENTARY

Disclosures
• No personal financial conflicts
• Research funding to Stanford from WL Gore, Cook, Medtronic
• Off-label use of devices

Long term concerns FOR snorkel/chimney
• Renal patency
• 2nd interventions
• Renal function
• Migration/kinking
• Arch issues

898 parallel grafts placed into 517 patients
– 692 renal arteries, 156 SMAs, 50 celiacs
• 94% patency
• 5.7% type I endoleak
• 2 year survival 79%
Early experience and lessons learned with fenestrated endografts compared with the snorkel/chimney technique

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Objectives: To compare the technical success, overall procedural success, and overall 30-day mortality rate of complex juxtarenal aortic aneurysms (AAA) treated by Snorkel Endovascular Aneurysm Repair (Sn-EVAR) or ZFEN (ZF Endovascular Aneurysm Stent Graft, ZFEN, Inc.) Endovascular Aneurysm Repair (EVAR). The Snorkel Endovascular Aneurysm Repair System is a new treatment option for complex juxtarenal and suprarenal aneurysms. The ZFEN (ZF Endovascular Aneurysm Stent Graft, ZFEN, Inc.) Endovascular Aneurysm Repair System is a new treatment option for complex juxtarenal and suprarenal aneurysms.

From the Western Vascular Society

Renal Cannulation Angles

In contrast to Sn-EVAR, Downward angulation - most challenging

Complex Juxtarenal AAA 2009-current
77 snorkel, 69 ZFEN

Renal Cannulation Angles

The rate limiting step
- Time to complete the procedure
- Overall procedural success

In contrast to Sn-EVAR
Downward angulation - most challenging

30 Snorkel
69 ZFEN

90
80
70
60
50
40
30
20
10
0
Renal Cannulation Angles

In contrast to Sn-EVAR

Downward angulation - most challenging

71 yo male
9.3 cm AAA
Double angle with downgoing renal
SMA at same level as renal

Iliac Access
“The Kitchen Sink” for type 4 TAAA

- Scallop for Celiac
- SMA Fenestration
- R Renal Snorkel
- L Renal Periscope
CT-A 1 year

Long term concerns- renal conformational changes

Summary
- Snorkel, chimney, periscope, sandwich techniques are all here to stay
  - Raises theoretical concern of gutters
- Techniques have demonstrated acceptable outcomes and patency for juxtarenal AAAs in multiple studies
- ZFEN is on-label treatment for short-neck AAA
  - Wait time
  - Iliac access
  - Some design limitations (3 holes)

ZFEN vs. SNORKEL?

Thank you!