Severely Angled Aortic Necks
May Remodel Beneficially After EVAR,
Minimizing the Need for Open Repair.

Boonprasit Kritpracha, MD
Dhanakom Premprabha, MD
Wittawat Thansattannee, MD
Sarpit降 Rakaphan, MD
Pongsritratan, MD
Supitbaswans, MD
Prince of Songkla University
Hat Yai, Thailand

Disclosure
Medtronic

Challenging Aortic Necks

3 issues:
1) Can we successfully deploy the device?
2) Good long term result?
3) What are the limits?
   How much angled is severely angled?

71 year-old male, symptomatic 6.5 cm AAA
Recent stroke, Significant CAD

Options:
1. Open repair X
2. Conservative treatment
3. Endovascular Repair “a safe and effective option ???”
Prince of Songkla U. experience

January 2009 – June 2015

Reviewed all AAA patients with neck angle >60° treated with Endurant stent graft in Songklanagarind hospital

Study – demographic data
perioperative data
follow up imaging studies

RESULTS

EVAR in neck angle >60°

115 patients

90 males, 25 females

Average age 75.3 years (58-89)

AAA diameter, average 68 mm (34-112)

Neck diameter, average 22 mm (16-32)

Neck length, average 27 mm (12-58)

Neck angle, average 92° (62-166)

30-day mortality – 2 cases (1.7%)
RESULTS

Follow up, average 23 months (1-83)
No device migration
1 late proximal endoleak
@ 5 years PO

Late Proximal Endoleak @ 5 years PO

Decrease in Aortic Neck angulation over the years

EVAR in severe angulated neck

115 patients – 3 groups

Neck angle

61° – 75°

24 cases

76° – 90°

40 cases

91° – 105°

28 cases

106° – 120°

15 cases

AAA shrinkage
No migration
No Proximal endoleak
Less neck angle

Pre-op
1-month PO
5-year PO

AAA 45 x 50 mm
AAA 28 x 34 mm

EVAR in severe angulated neck

68 yo male, 62 mm AAA
AAA shrinkage
No migration
No Proximal endoleak
Less neck angle

Pre-op
1-month PO
5-year PO

AAA 62 x 60 mm
AAA 60 x 50 mm
EVAR in severe angulated neck

77 yo male, 91 mm AAA

AAA shrinkage
No migration
No Proximal endoleak
Less neck angle

Pre-op
AAA 91 x 75 mm

1-month PO
AAA 83 x 64 mm

2-year PO

120°

AAA shrinkage
No migration
No Proximal endoleak
Less neck angle

But........
There are some technical difficulties.

Quite good results !!!

Shortened neck
From 3 cm-long neck

Accuracy of device deployment
When in doubt, deploy a little low
Removal of delivery system

Stuck?!?!
What to do?

Change its angle

Belly pushing

Prince of Songkla University
Hat Yai, Thailand

chimney procedure to maximize neck length

Neck diameter 22 mm
Neck length 13 mm
Neck angle 84°

Prince of Songkla University
Hat Yai, Thailand

RESULTS
Proximal extension needed in 34 cases (29%)

EVAR in severely angulated neck

- Neck may be shortened during the procedure
- Accuracy of the deployment below to the renal arteries
- Belly-pushing may help
- Chimney procedure (occ. Needed)
- Proximal extension cuff may be needed (29%)

Prince of Songkla University
Hat Yai, Thailand

Neck Diameter 22 mm
Neck Length 13 mm
Neck Angle 84°

Percentage of cases needed cuff extension

61-75 76-90 91-105 106-120 >120
71 year-old male, symptomatic 6.5 cm AAA
Recent stroke, Significant CAD

Options:
1. Open repair
2. Conservative treatment
3. Endovascular repair

Conclusions
EVAR may be offered for AAA patients with severely angulated neck, who are not candidate for open repair.

Need longer neck length, there are technical challenges, and the procedure can be difficult.

Thank you