Aortic Dissection

I do treat when appropriate

Johnny Steuer, MD, PhD
Stockholm South Hospital
Disclosure

Speaker name: Johnny Steuer

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Shareholder in a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Management of aortic dissection

**Medical**


**Surgical/Endovascular**


Indication for TEVAR in (complicated) aortic dissection

- **Malperfusion:** visceral, renal, limb ischaemia
- **Periaortic haematoma/rupture**
- **Uncontrolled pain/hypertension** despite adequate medical therapy

- **Disease progression/rapid expansion**
Why we shouldn’t treat all patients with (uncomplicated) dissection – TEVAR complications

- **Stroke**: manipulation in the arch and ascending aorta, left subclavian artery (vertebral) coverage

- **Spinal cord ischaemia**: extent of aortic coverage, previous aortic surgery

- **Arm ischaemia**: possible consequence of left subclavian artery coverage

- **Retrograde type A dissection**: balloon dilatation, oversizing
Why we shouldn’t treat all patients with (uncomplicated) dissection – lack of evidence

Levels of evidence

- Single- and multicentre trials
- Registry: IRAD
- Randomised controlled trials
  - ADSORB
  - INSTEAD/XL
Early and Long-term Outcome after Thoracic Endovascular Aortic Repair (TEVAR) for Acute Complicated Type B Aortic Dissection

J. Steuer a,*, M.-O. Eriksson b, R. Nyman b, M. Björck a, A. Wanhainen a

- Death, n=2 (3%)
  - Cerebral haemorrhage
  - MOF

- Spinal ischaemia, n=4
  - One permanent paraplegia (2%)

- Cerebral lesion, n=3 (5%)

- Other
  - Bowel ischaemia, n=4 (6%)
  - Amputation, n=1 (2%)

30-d mortality 3%
5-yr survival 87%

Eur J Vasc Endovasc Surg 2011;41(3):318-23
A significant proportion (18%; n=22) of patients presented with acute complications requiring TEVAR 15-85 days after onset of dissection.

This indicates that there is a sub-acute, unstable phase during which acute and life-threatening complications might occur, which questions the relevance of the current (2 w) definition.
TEVAR in acute uncomplicated type B dissection

**ADSORB**
- 61 patients (non-consecutively) randomised to BMT or BMT + TEVAR (TAG)
- Composite morphological endpoint

- “...the question arises as to whether endovascular treatment can reduce mortality further. This question will not be answered by the present study.” (Eur J Vasc Endovasc Surg 2012;44:31-36)

- Favourable remodelling at 1 year with BMT + TEVAR (Eur J Vasc Endovasc Surg 2014;48(3):285-291)

- The patients are interested in (event-free) survival rather than remodelling (?)
TEVAR in uncomplicated chronic stable type B dissection

**INSTEAD** *(Circulation 2009;120:2519-2528)*

- 140 patients randomised to BMT or BMT + TEVAR
- Primary end point **all-cause death at 2 years**; secondary aorta-related death, progression, remodelling
- TEVAR effective in remodelling (91% vs 19%), no difference in survival at 2 years (89% vs 96%)

**INSTEAD XL** *(Circ Cardiovasc Interv 2013;6:407-416)*

- Extended follow-up demonstrating lower aorta-related mortality (7% vs 19%) and disease progression (27% vs 46%) after 5 years, but no difference in all-cause mortality
Algorithmic strategy (DISSECT)

**DISSECT** *(Eur J Vasc Endovasc Surg 2013;46(2):175-190)*

- Duration
- Intimal tear location
- Size of the aorta (max diam)
- Segmental extent
- Clinical complications
- Thrombosis of false lumen

**Suggested high-risk predictors**

- Entry tear diameter $\geq 10$ mm
- Entry tear location
- Aortic diameter $\geq 4$ cm
- False lumen diameter $\geq 22$ mm

*Ann Thorac Surg 2012;93(4):1215-1222*
Summary

• TEVAR is favourable in complicated acute type B dissection

• TEVAR may be favourable (*survival*) in some patients with uncomplicated dissection

• If TEVAR in uncomplicated dissection – When?

• Are there any dissections that are uncomplicated?

• Improved risk stratification with identification of predictors (*morphological and clinical*) of complications needed
Conclusion

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MERCI!

Johnny Steuer, MD, PhD
Department of Surgery
Stockholm South Hospital
johnny.steuer@ki.se