Goals Of Treatment For Complicated & Uncomplicated Type B Aortic Dissection (TBAD): Value Of IVUS And Other Tips And Tricks For Getting Good Outcomes: From A Large Single Center Experience

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Disclosures
- Consultant
  - WL Gore
  - Medtronic

Treatment of ATBAD
- 3° Referral Center
- Multi-specialty team:
  - CT, Vasc Surg
  - Critical care
  - Consultants
- Advanced imaging:
  - CT, MR, IVUS, TEE
  - Hybrid OR's
  - Monitoring MEP, SSEP
- Full spectrum of open/endovascular procedures

Protocol
- Admit CVICU
- C-line, arterial line, UOP
- B-Blocker
- Ca²⁺ Blocker
- Nitroglycerin
- Nitroprusside
- Anti-impulse Therapy
  - SBP<120, MAP<80
  - Control pain
- Respiratory
  - DVT prevent
  - Nutrition
  - Mobilization
- Reassessment
  - Blood pressure
  - Pain

Intervention: TEVAR, OR, Revascularization
- Rupture/ Leak
- Malperfusion
- Acute Expansion
- Refractory Symptoms
- Uncontrolled Hypertension
- High Risk Uncomplicated

Acute Type B Aortic Dissection
- 1/2001 to 1/2014
- 444 ATBAD pts (1079 total)
- 276 (62%) males
- Mean age 60.2 ± 14.2 yrs
- Median age = 60.5 yrs
- Range 16 – 98 yrs
Goals of TEVAR for ATBAD

- Seal off proximal entry tear
- Prevent/treat rupture
- Alleviate malperfusion
- Expand compressed true lumen
- Induce false lumen thrombosis
- Initiate aortic remodeling

TEVAR DON'TS

- Oversize >10%
- Balloon Angioplasty
- Place distal device first

IVUS Is A Usefull Adjunctive Technology During TEVAR for Treatment Of ATBADs:

TOP 10 REASONS

10. Reduce Contrast and Radiation

- ARF is common in ACTBAD patients
- Less radiation is better for the patient and the team

9. Evaluate aortic morphology

- Real time
- Aortic Wall
- Thrombus
- Ca++
- Plaque
- Dissection flaps
- True and false lumen

Survival at 5 yrs for uATBAD was 68.3%
8. Evaluate the ascending aorta pre and post TEVAR
- Rule out RTAD
- Check PLZ for device apposition

7. Locate proximal entry tear and additional re-entry tears
- Adjunct to available CT images (may be poor quality)
- Dissection is dynamic
- Real time information is important

6. Evaluate FL flow
- Critical in rupture
- May require additional coverage, plug, coil embolization, etc.

5. Diagnose Malperfusion
- CT is a static image
- Dynamic Obstruction
  - Prolapsed septum into ostium during cardiac cycle
- Static Obstruction
  - Dissection extends into branch vessel

4. Assess TL expansion after TEVAR: Do you need additional coverage?

3. Obtain real time measurements
- Oversizing >10% is a risk factor for RTAD
2. Assess branch vessels after TEVAR: Do you need additional stenting?

1. Confirm wire placement in TL
   Placement of device in FL can have severe consequences

Complicated ATBAD
- 75 yo female with chest and back pain
- CTA: ATBAD with aortoiliac thrombosis
- On exam, mottled from the umbilicus down
- No motor or sensation in the lower extremities

OR
- Open right femoral access (no pulse)
- Diagnostic angiogram
- Glide catheter/ glide wire access to ascending aorta
- IVUS confirmed placement of the wire in the true lumen from RCFA to ascending aorta.

CTA
Planned LSCA coverage

Abdominal Aortogram

Conclusion

- IVUS has great utility in treatment of ATBAD
- Useful adjunct to CTA, angiogram and TEE
- Real time information
- Aids diagnosis
- Assesses adequacy of treatment
- Guide additional therapy
- Diagnose complications