Tips and Tricks for Vertebral Interventions

When Are They Needed?

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Disclosures

- Symposium Honoraria and Course Proctor
  - Abbott, Medtronic, TriVascular
- Symposium Honoraria
  - Spectranetics, Cordis, Bard, Cardiovascular Research Foundation, Boston Scientific
- National PI
  - CANOPY, SAPPHIRE WW
- Stock, Research Grants, etc.
  - None

Background Considerations

- Isolated Asx vertebral lesions: Benign Hx
- Usually asymptomatic if contralateral vertebral artery and basilar are OK
- Complications in posterior circulation: bad
- Endovascular is best for vast majority; HOWEVER often not reimbursed
- Treatment IF: vertebro-basilar insufficiency, posterior TIA/strokes, or vessel preservation during subclavian PVI

Angiography for Vertebral Interventions

- Arch Aortography (40º LAO)- Prolonged
- Ostial vertebral artery usually best visualized in a contralateral cranial view
- Ostia LSCA (LAO 40º); RSCA (20 RAO caudal 20)

Vertebral Intervention

- We use 5 or 6F Shuttle sheaths in SCA’s if femoral access; w stabilizing wire in dSCA
- Can use 45cm brachial sheaths; comb’n
- Embolic protection NOT routinely used
- 0.014” wires, low profile RX equipment
- We pre-dilate (3.5-4); THEN IVUS ~ all
- If RLD ≤4.5, consider DES*; o/w BE-BMS
- Cover and flare ostia; careful w/ distal wire
- Neuro checks; posterior circ. angios

* = “Off Label”

Severely Sx L Vertebral; R Vertebral occluded
No Posterior Communicating Arteries

Conservative 3.5-4.0 X 20 PTA

Angio: Lesion and flow improved

IVUS R Vert after PTA

Positioning L vert 6 X 18 stent
(same view as IVUS)
Stent deployed ~ nominal  
Higher pressures w/ balloon withdrawn

Severely Sx R Vert; L Vertebral 100%; Arm Access Best

LAO Cranial; Difficult FA access

R Brachial Access; LAO Cranial

Angio w/ Balloon; “measuring”  
PTA 4 X 15 Rx Balloon
IVUS for sizing AND locating ostium

Stent up to ~ nominal Higher atm w/in proximal stent

Combined Subclavian & Vertebral Intervention

7F Shuttle- RCFA
6F 45 cm Pinnacle-LBA

Wiring L vert from arm
PTA LSCA with 0.014 wire in Vert

Deploying \textit{Nitinol} stent

Re-wiring thru stent into L Vert
\textit{(New wire is through stent tines before final PTA)}

PTA LSCA Stent with “NON-trapped” Vert wire

PTA L Vert
Stent L Vert
After IVUS-guided Vert Stent

CONCLUSIONS

- Vertebral arteries can be safely treated with endovascular treatment by experienced operators IF they are symptomatic and have appropriate indications and anatomy.
- A systematic approach utilizing low profile equipment and meticulous technique is essential for success and safety.

Thank You for Your Attention!