Use of Covered Stents for in the Management of Carotid Artery Erosion From Head and Neck Cancers

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DISCLOSURES

• Physician Training Grants, Clinical Trials, Medical Advisory Boards
  – WL Gore
  – Boston Scientific
  – Endologix
  – Abbott Endovascular
  – Bard
Management of Carotid and Vertebral Injury and Pathology

- Head and Neck Cancers
- AVF/AVM
- Carotid Blow Out (Treatment or Prevention)
- Traumatic Injuries
- Post Surgical or Intraoperative Bleeding
- Aneurysms and Pseudoaneurysms
Rationale

While uncommon, management of acute arterial bleeding or prevention of hemorrhage for future operative resection of oncologic, iatrogenic or traumatic pathology involving the carotid and vertebral arteries can present a complex clinical dilemma.
OPEN vs. ENDO

- Open approach may involve technical challenges for obtaining proximal and distal arterial control as well as limiting occlusion time and has been associated with significant morbidity and even mortality.

- Endovascular techniques including temporary balloon occlusion, coil embolization and covered stent placement may simplify the management of these patients while preserving patency of the internal carotid and vertebral arteries.
Endovascular Management

Head and Neck Cancers and Traumatic Injuries
Patch Aneurysms and Pseudoaneurysms
Carotid Blow Out
Technical Considerations
Initial Assessment

Duplex

CT

Angiography for Intervention

Anticoagulation

Identification of Source

Complete Arch and Cervico-cerebral vessel study prior to intervention if possible
Technical Considerations

Endografting the Carotid Artery

Anticoagulation

7 Fr 90 cm sheath advanced into the common using CAS techniques (allows 5mm-8mm self expanding graft)

0.14” 300cm embolic protection device is deployed in the distal segment of the internal carotid artery

External coil embolization – triaxial cath as needed
Technical Considerations
Endografting the Carotid Artery

Balloon occlusion for localizing site of bleeding and sizing for endografts

Build from Internal to common

Telescoping deployment

No more than 2mm increase from one graft to the next

2.5 cm x 5mm in internal

2.5cm x 7mm bridge and 5cm x 9mm in common
Technical Considerations
Endografting the Vertebral

- 6 Fr 90cm Sheath into Subclavian Artery
- 0.14 \" 300 cm Filter wire
- 5mm x 2.5 cm Self-expanding covered stent
UTMB Experience with Covered stents in the Carotids and Vertebrals Aug 2007 –Aug 2018

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<tr>
<td>Traumatic injuries Vertebral</td>
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<td>Iatrogenic injuries Vertebral</td>
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<td>Carotid aneurysms/pseudoaneurysms</td>
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Results

All patients had stents placed
No intraoperative deaths
One intraoperative stroke died in hospice 4mo post op
One late asymptomatic occlusion at 2 years
One recurrent bleeding - contralateral side embolized and stented
One reoperation for in graft laminated thrombus at 14 months treated with an additional stent
1 trauma death from other injuries and multi-system organ failure
Conclusions

Endovascular control of hemorrhage from multiple etiologies using covered stents is effective

This may be used either therapeutically or prophylactically to control bleeding

Long-term efficacy of these interventions should continue to be monitored with regular follow-up.
References


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