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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

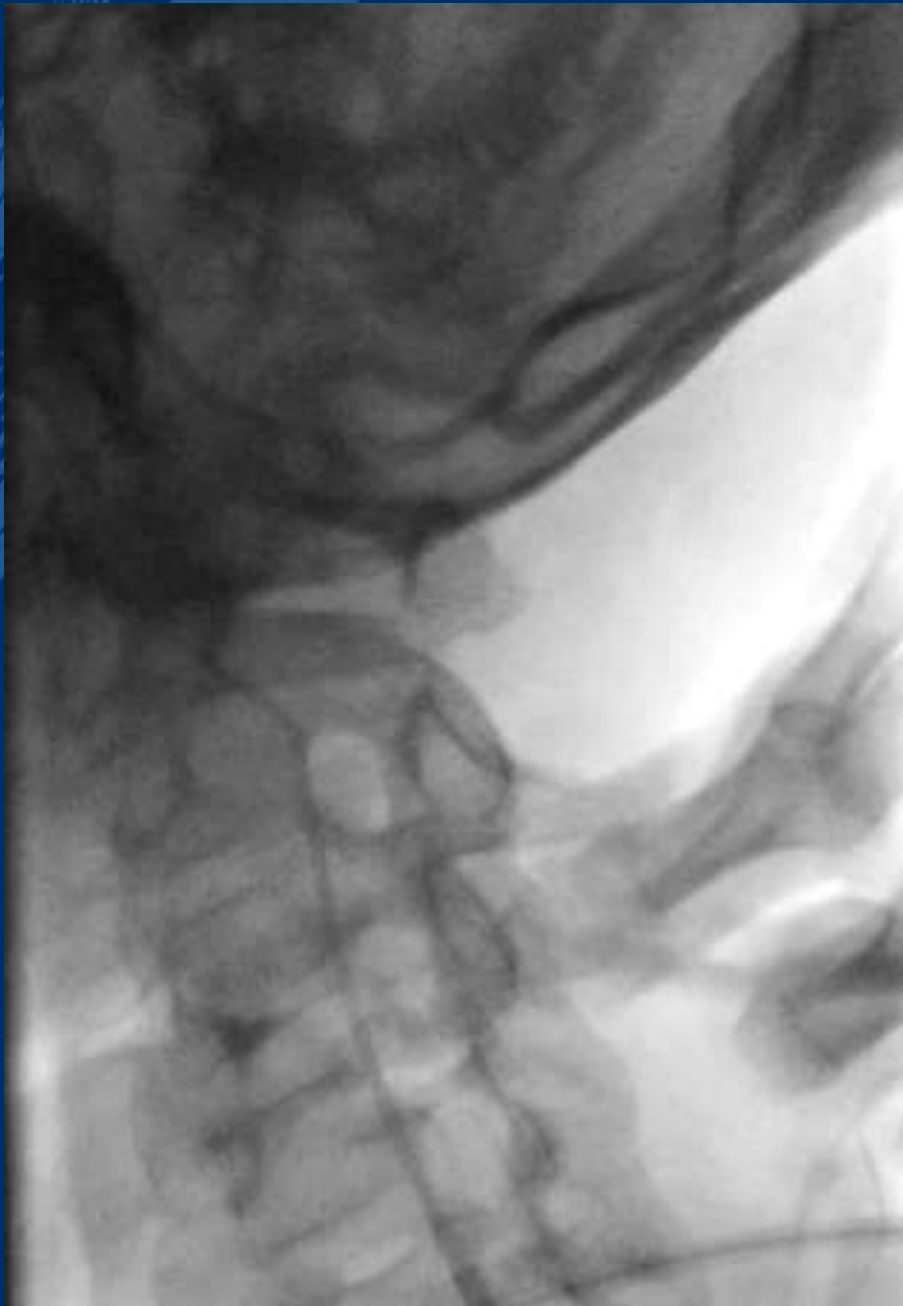


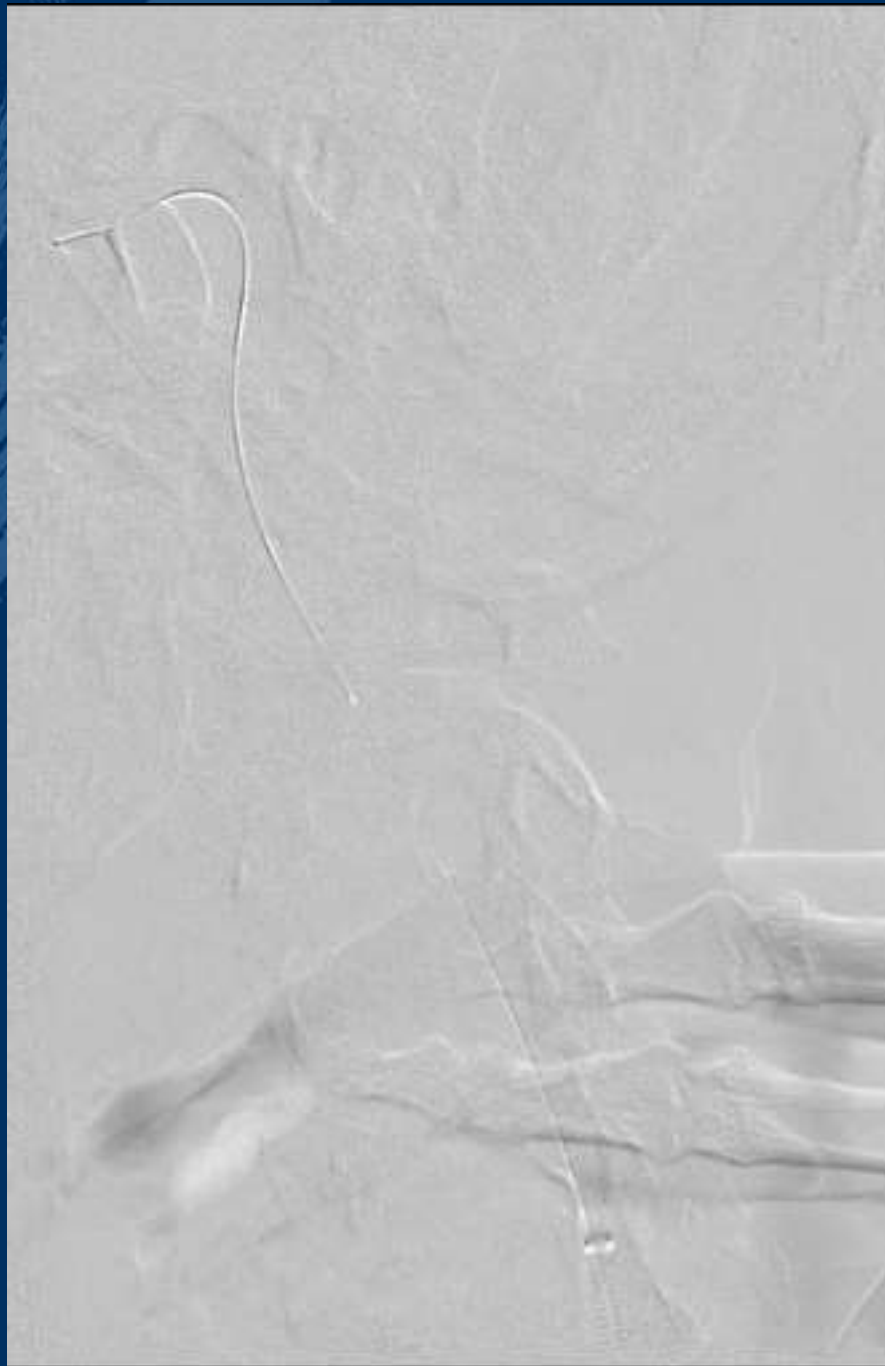
Patch Aneurysms and Pseudoaneurysms

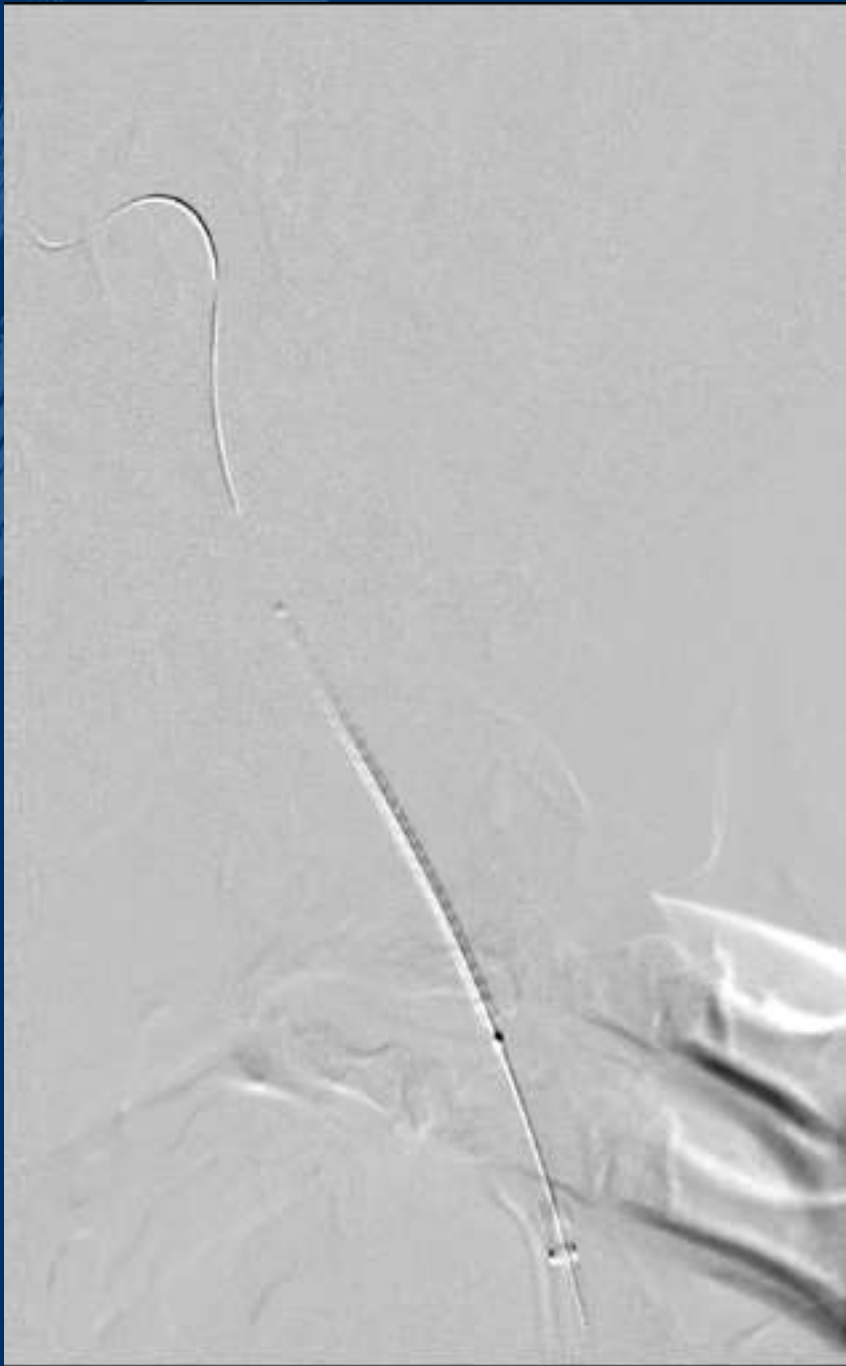


Carotid Blow Out















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 Vertebrae Aug 2007 –Aug 2018

Traumatic injuries Carotid	4
Traumatic injuries Vertebral	4
Iatrogenic injuries Vertebral	3
Carotid aneurysms/pseudoaneurysms	4
Bleeding Control for	
Head and Neck Malignancies	16
Total	31

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

- Ketcham AS, Hoyer RC. Spontaneous carotid artery hemorrhage after head and neck surgery. *Am J Surg*. 1965;110:649-655.
- Maran AGD, Amin M, Wilson JA. Radical neck dissection: a 19-year experience. *J Laryngol Otol*. 1989;103:760-764.
- Porto DP, Adams GL, Foster C. Emergency management of carotid artery rupture. *Am J Otolaryngol*. 1986;7:213-217.
- Morrissey DD, Andersen PE, Nesbit GM, et al. Endovascular management of hemorrhage in patients with head and neck cancer. *Arch Otolaryngol Head Neck Surg*. 1997;123:15-19.
- Pampana E, Gandini R, Stefanini M, et al. Coronary stent-graft deployment in the treatment of carotid blowout. *Interv Neuroradiol*. 2011;17: 490-494.
- Farivar BS, Lee DH, Khalil A, et al. Carotid Blowout Syndrome: Endovascular Management of Acute Hemorrhage with Tapering Overlapped Covered Stents. *Ann Vasc Surg*. 2014;28: 1934.e7-1934.e11.
- Citardi MJ, Chaloupka JC, Sun YH, Ariyan S, Sasaki CT. Management of carotid artery rupture by monitored endovascular therapeutic occlusion (1988-1994). *Laryngoscope*. 1995;105:1086-1092.

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