Post-operative Bleed: A Collaborative Approach Between IR and ENT

Eric Cyphers, BS[1], Marian Gaballah, DO[1,2], Anne Marie Cahill, MBBch, BAO[1,2], Ganesh Krishnamurthy, MD[1,2]
[1]Children's Hospital of Philadelphia, Philadelphia, PA [2]University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

Background

- Tonsillectomy and adenoidectomy is a commonly performed surgery in children[1].
- Post-operative bleeding is potentially life-threatening with conventional interventions including surgical cauterization or ligation.
- Endovascular intervention is an adjunctive technique to consider in cases refractory to conventional management[1-7].

Purpose

- To describe the case of a 10-year-old female presenting with oral bleeding four days post-tonsillectomy at an outside institution. She underwent a right tonsillar artery embolization with intraprocedural collaboration with otolaryngology to facilitate bleeding site localization.

Methods

History
- 10-year-old female who was POD#4 s/p tonsillectomy and adenoidectomy at an OSH, transferred from OSH ED following two episodes of oral bleeding.
- The patient had a 15-minute coughing episode earlier that morning where small clots were expectorated.
- No active bleeding was noted upon arrival.
- No personal or family history of bleeding disorders: patient was not on anticoagulation/antiplatelet therapy.

Vital Signs
- BP 128/70, P 117, Temp 37C, Sp02: 99% RA

Physical Exam
- Clot was visible over R tonsillar fossa, no active bleeding

Labs
- WBC 11.2, Hgb 13.2, Hct 40.6

ENT Intervention
- Bleeding filled the oral cavity during induction, necessitating clearance of the airway by ENT.
- Cautery of the artery was attempted; however it was not feasible due to retraction of the vessel. Clamping of the vessel was unsuccessful.
- Tonsillar fossa was packed and patient was transferred to IR.

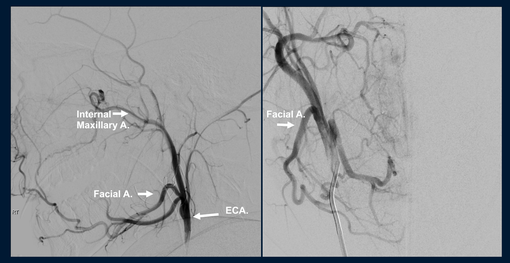
Procedure

Access: Right common femoral artery, 5 French sheath

(1) Right ECA Angiography

Technique: 5 French JB-1 catheter (Angiodynamics, Latham, NY) and 0.035" Bentson wire (Cook Medical, Bloomington, IN) were used to select the right ECA.

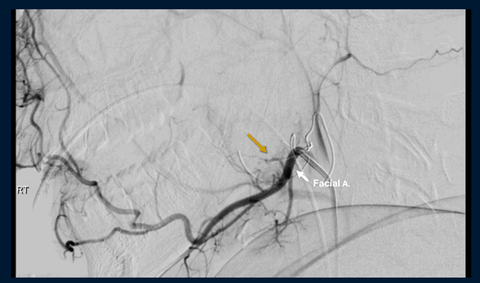
Findings: Normal caliber and branching pattern, no focal blush, normal parenchymal phase.



(2) Right Facial Artery Angiography

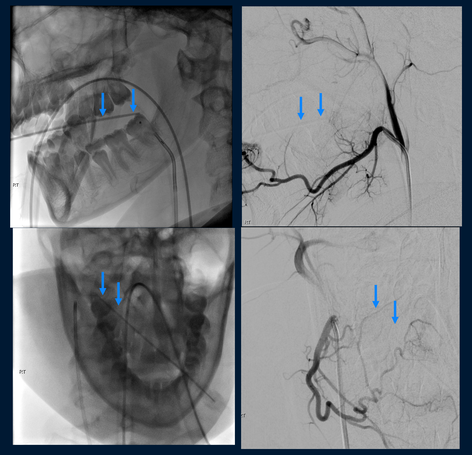
Technique: The Bentson wire was exchanged for a 0.035" Glidewire (Terumo, Somerset, NJ). The catheter/wire was advanced into the R facial artery.

Findings: Tonsillar branch irregularity and truncation (yellow arrow). No active extravasation or focal blush.



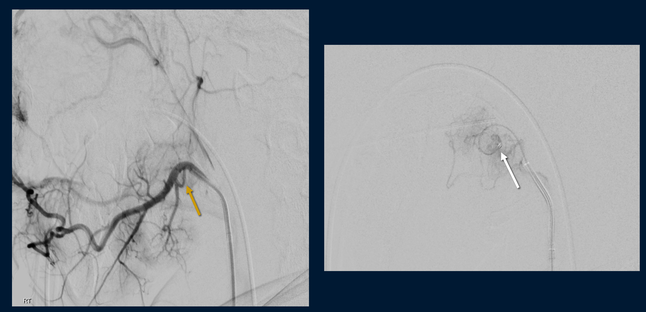
(3) ENT Localization

Technique: To assist with localization, the ENT surgeon placed an intraoral 5.0 F stiffened micropuncture access cannula (Cook Medical, Bloomington, IN) (blue arrows) 1 cm above the bleeding location to serve as a marker.



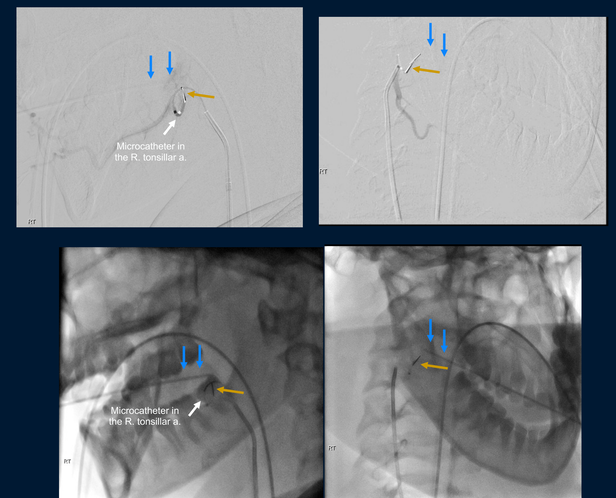
(4) Right Tonsillar Branch Subselection

Technique: Using fluoroscopic overlay, the right tonsillar branch (yellow arrow) was subselected with a 2.5 French straight Renegade low-flow microcatheter (Boston, Scientific, Marlborough, MA) and 0.018" shapeable Transcend wire (Stryker, Kalamazoo, MI) (white arrow).



(5) Right Tonsillar Branch Embolization

Technique: Two 0.018" 0.5 cm straight Hilal coils (Cook Medical, Bloomington, IN) were deployed into the right tonsillar artery (yellow arrow). The radio-opaque dilator is noted by the blue arrows.



Outcomes

- No active bleeding was seen via the mouth or on post-embolization angiogram. ENT packed the site.
- The patient was transferred to the PICU and intubated. Clindamycin was continued for 48 hours until oral packing was removed.
- The patient was extubated on POD #4.
- The patient tolerated adequate oral intake and was discharged home in stable condition on POD #5.

Learning Points

- Endovascular intervention for post-T&A bleeding is an important adjunctive technique in cases refractory to conventional surgical interventions[1-7].
- Despite absence of contrast extravasation on angiography, the abnormal appearance of the tonsillar artery in conjunction with localization by ENT and the patient's history and physical exam allowed for successful embolization of the culprit vessel.
- Endovascular management of post-tonsillectomy/adenoidectomy bleeding is optimized by communication between ENT surgeon, interventional radiologist, and the anesthesiologist[1,4]
- Anatomic localization by the ENT surgeon in this case facilitated vascular localization and intervention by the IR team, in the absence of signs of an actively bleeding vessel on angiography[4]

References

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