

Post-MVC Hemorrhage of External Carotid Artery Requiring Coil Embolization

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Introduction

- High-speed motor vehicle collision (MVC) may result in severe maxillofacial trauma and bleeding with significant morbidity and mortality
- Primary survey with prompt control of airway, breathing, and circulation is critical
- Hemorrhage control can be accomplished via a variety of methods including pressure packing, manual reduction, and balloon tamponade
- In cases of refractory hemorrhage, trans-arterial embolization or direct external carotid artery ligation can be considered
- Here we present a case of refractory hemorrhage with hemodynamic instability requiring massive transfusion protocol and trans-arterial embolization of an external carotid artery pseudoaneurysm, which we posit for use in such cases of hemorrhage that are otherwise difficult to access

Learning Objectives

1. Severe maxillofacial trauma management overview
2. Treatment methods for refractory hemorrhage in such cases
3. Outline patient case for refractory hemorrhage and subsequent endovascular intervention

Methods

- Retrospective chart review was performed with special attention to surgical interventions, imaging results, and overall clinical course.

Results

- A 29-year-old male presented following a high-speed motor vehicle collision with minor facial abrasions and deformities of the left lower extremity and right wrist
- He was initially hemodynamically stable with Glasgow coma score (GCS) of 15 but developed hemorrhage through the left external auditory canal, hypotension, tachycardia, and agitation
- Hemotympanum was initially managed with Rhino Rocket (Summit Medical, St. Paul, Minnesota)
- CT revealed a contrast collection posterior to the left mandibular ramus concerning for a pseudoaneurysm or contained extravasation of the left external carotid artery
- The patient was sent to interventional radiology where active extravasation was noted from the left internal maxillary and superficial temporal arteries, which underwent successful coil embolization



Pre and Post Embolization of suspected left external carotid pseudoaneurysm

Conclusions

- Severe maxillofacial trauma is a potentially life-threatening injury due to the proximity to the airway and brain
- Management requires a multifaceted approach between several departments with prompt airway and hemorrhage control
- As emphasized in this case, interventional radiology plays a critical role in these cases by offering trans-arterial embolization for cases of refractory hemorrhage

Bibliography

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