



## SUBMISSION PREVIEW

### **Large External Carotid Artery Pseudoaneurysm: Rare Complication Following Microvascular Free Flap Reconstruction**

Submission Type: Poster Case Study

#### **Author Category**

#### **Introduction/Patient Description**

Pseudoaneurysm (PSA) associated with microvascular free flap reconstruction in the neck is rare, with only two reported cases in the literature. We report a case of an external carotid branch artery PSA in a patient who had previously undergone a total laryngectomy, neck dissection and microvascular free flap reconstruction of the pharynx. The use of color flow duplex ultrasound (CDU) in the diagnosis and treatment of this patient will be discussed.

#### **Methods**

This patient was referred to the vascular lab after identification of a large, intraoral PSA by computed tomography and an unsuccessful attempt to cannulate the feeding artery by interventional radiology. At the request of the vascular surgeon, CDU was utilized to further delineate the size, depth and feeding artery of this PSA.

#### **Results**

CDU revealed a prominent to/fro flow waveform in the first branch arising from the external carotid artery. Color flow and spectral Doppler were present in the PSA. The distance from the surface of the skin to the flow active core of the PSA was 3.1 cm. Due to the complexity of the PSA, cannulation of the feeding artery could not be achieved for coil embolization. With the information obtained on CDU, treatment was achieved by a transcutaneous thrombin injection (TI) under fluoroscopic and ultrasound guidance. Completion angiography verified success of the TI and demonstrated internal and external carotid patency.

#### **Conclusion/Discussion**

CDU was valuable not only in the diagnosis of this unusual PSA, but in the successful treatment and follow-up of this patient. We believe our patient to be the first documented case of transcutaneous TI for the treatment of PSA following microvascular free flap reconstruction.