Objectives: To review a case of post-tonsillectomy lingual artery pseudoaneurysm and resultant hemorrhage in a patient with a common linguo-facial trunk.

Study Design: Case report and review of the literature.

Methods: A patient with a post-tonsillectomy lingual artery pseudoaneurysm was studied. Clinical history, laboratory data, and imaging studies were reviewed.

Results: A 27-year-old female presented to an outside Emergency Department with a two day history of oral bleeding following tonsillectomy ten days earlier. An otolaryngologist was not available at this location so the patient was intubated and airlifted to our institution, where she was taken directly to the operating room. Intraoperative examination noted brisk bleeding emanating from exposed constrictor muscle, deep within the inferior pole of the left tonsillar fossa. Hemostasis was achieved using electrocautery, Surgiflo™, and suture. The patient was admitted to the surgical ICU for observation. The patient bled again overnight and was taken back to the operating room emergently. Hemorrhage was again controlled with cautery and suture. Due to brisk bleeding, we elected to take the patient to the angiography suite. Angiogram revealed a pseudoaneurysm of the left lingual artery, which originated from a medialized lingual-facial trunk (Fig 1A, B); a right common lingual-facial trunk was also noted. The pseudoaneurysm was successfully coiled and embolized (Fig 1C). The patient did not experience further bleeding and was discharged two days later. She was seen for follow up one month later and reported no episodes of hemorrhage or other sequelae.

Case Presentation

A 27-year-old female presented to an outside Emergency Department with a two day history of oral bleeding following tonsillectomy performed ten days earlier. An otolaryngologist was not available at this location so the patient was intubated and airlifted to our institution, where she was taken directly to the operating room. Intraoperative examination noted brisk bleeding emanating from exposed constrictor muscle, deep within the inferior pole of the left tonsillar fossa. Hemostasis was achieved using electrocautery, Surgiflo™, and suture. The patient was admitted to the surgical ICU for observation. The patient bled again overnight and was subsequently taken back to the operating room. Hemorrhage was controlled and angiography was performed to better evaluate the source. Angiogram revealed a pseudoaneurysm of a lingual artery, originating from a medialized common lingual-facial trunk. The pseudoaneurysm was successfully coiled and embolized. The patient did not experience further bleeding and was discharged home two days post embolization.

Conclusion: We hypothesize that common linguo-facial trunks arise from the external carotid artery at a highly medialized angle, placing the lingual and/or facial artery in closer proximity to the tonsillar fossa. In the setting of intraoral surgery such as tonsillectomy, this orientation may increase the risk of iatrogenic vessel injury. Angiography should be considered in cases of delayed recurrent hemorrhage following tonsillectomy.

Discussion

We postulate that the anomalous branching pattern of a common linguo-facial trunk may have implications in the surgical field. We hypothesize that common trunks appear may (1) tend to have a more medial course, and/or (2) have a more medial origin (Fig 3). This places the lingual and/or facial artery in closer proximity to the tonsillar fossa, thereby increasing the risk of iatrogenic injury.

Discussion, cont’d

Common linguo-facial trunks

Variations in the branching patterns of the external carotid artery are not uncommon (Fig 2). Anatomical studies report that a unilateral common linguo-facial trunk is seen in roughly 20% of the population,6,8 while bilateral linguo-facial trunks have a prevalence of 4.8%.9 Other rare variations include common thyro-lingual trunks6 and common thyro-linguofacial trunks.11 There is no significant difference between lingual artery diameters arising from common linguo-facial trunks and those arising from the external carotid artery.3 This may suggest the physiologic blood flow in the lingual branch of a common trunk is not compromised.

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Discussion

Treatment of hemorrhage resulting from a pseudoaneurysm requires rapid diagnosis based on a high index of suspicion and the availability of immediate consultation for arteriography and embolization. In our patient, the pharyngeal constrictors appeared to have been partially resected during the original surgery, increasing our index of suspicion and necessitating angiographic evaluation.

With a reported incidence of 20%, anomalous common linguo-facial trunk may increase the risk of iatrogenic lingual artery injury during tonsillectomy. Presence of a lingual artery pseudoaneurysm should be considered in the differential diagnosis of recurrent post tonsillectomy hemorrhage.

References


Figure 1. Angiographic Images. A. lateral view of left lingual artery pseudoaneurysm, arising from a common linguo-facial trunk. B. frontal view of left lingual artery pseudoaneurysm. C. coiled lingual pseudoaneurysm and embolized proximal lingual artery

Figure 2. Common Linguo-Facial Trunk

Figure 3. Hypothesized Medialization from a Common Linguo-Facial Trunk, axial views.

Conclusion

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With a reported incidence of 20%, anomalous common linguo-facial trunk may increase the risk of iatrogenic lingual artery injury during tonsillectomy. Presence of a lingual artery pseudoaneurysm should be considered in the differential diagnosis of recurrent post tonsillectomy hemorrhage.