Endovascular treatment of a linguofacial trunk pseudoaneurysm after tonsillectomy

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INTRODUCTION

Tonsillectomy is one of the most often performed procedures in ear-nose-throat departments. Many different complications may arise after this procedure, including infection, prolonged pain, cranial nerves lesions causing voice alterations or difficulty to swallow. The most common serious one is postoperative hemorrhage involving around 3% of the cases3. The most severe hemorrhages are due to arterial dissections or pseudoaneurysms.4

Pseudoaneurysms may arise after localized arterial laceration caused by blunt or penetrating trauma, including traction and thermal damage produced by electrocoagulation. Post-tonsillectomy hemorrhages (PTH) from pseudoaneurysms located at the lingual, facial and internal carotid arteries have been described2,3,7. The treatment options include local maneuvers, surgical ligation and endovascular embolization. We report a case of a 10-year-old female with recurrent severe bleeding caused by a pseudoaneurysm of the left linguofacial trunk.

CASE REPORT

A 19-year-old female underwent a left sided tonsillectomy because of recurrent tonsillitis. There were no perioperative complications and she made an uneventful recovery. After 20 days she presented with oral bleeding arising from the operative site that was managed with suture ligatures and packing with gauze. The day after she experienced further episodes of extensive bleeding. She was readmitted to hospital hemodynamically unstable, where she was intubated. An emergent angiogram under general anesthesia was performed to exclude vascular injuries. The examination showed no internal carotid artery (ICA) injury, but the selective injection from the external carotid artery (ECA) showed a pseudoaneurysm arising from the left linguofacial trunk.

After the diagnostic studies of the craniofacial vasculature, the left external carotid artery was catheterized with a 6F Guidather wire (Styker Co, MI, USA). Coaxially an Excelsior SL10 microcatheter (Styker Co, MI, USA) was advanced over a 0.014-inch Transend wire (Styker Co, MI, USA) to a position just beyond the pseudoaneurysm. It was decided to occlude both the parent vessel (linguofacial trunk) and the pseudoaneurysm. Embolization was achieved with seven Guglielme detachable coils. Final control angiogram showed total exclusion of the aneurysm and retrograde filling of lingualvascular territory via internal maxillary artery anastomosis (Figure 1).

DISCUSSION

Postoperative hemorrhage is the most common serious complication of tonsillectomy and its incidence is around 3%. They represent the major cause of prolonged post procedural hospitalization. Serious post-tonsillectomy hemorrhage seems to be more common in children up to 8 years of age and in cases of bleeding after 24 hours of the procedure. Although rare, pseudoaneurysms of the carotid artery and its branches following tonsillectomy are clinically significant lesions2,5.

Endovascular treatment of PTH has three main advantages: first, the diagnostic evaluation can be combined with direct therapeutic intervention; second, embolization is more selective; and third, the method is less mutilating and has less risk of damaging the vagal and accessory nerves3,7. While leading with saccular, true aneurysms, selective treatment is always desired, once it preserves the parent artery. On the other hand, the rich collateral blood supply in this area makes internal trapping the best approach, because the main risk of selective occlusion is that the pseudoaneurysm wall may not provide a permanent barrier to the movement of the embolic agent. Moreover, the durability of this treatment is uncertain and recurrent hemorrhage is possible.7

Unilateral proximal occlusion of the facial artery includes the internal maxillary, transverse facial, and distal ophthalmic branches.6 Internal trapping with coils of the involved segment is the treatment of choice, because inadvertent distal migration of embolic agents, such as glue or PVA particles, is not desired and is associated with additional complications. For example, the branches of the tip of the tongue are effectively endovascularized, and distal occlusion can produce ischemic necrosis of the tip of the tongue.3

When facing post-tonsillectomy hemorrhage, emergent angiography to rule out vascular lesions is strongly recommended. Once a pseudoaneurysm is identified, internal trapping shows to be an effective, definitive and safe treatment5,7.

REFERENCES


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Figure 1. A and B: Left external carotid angiography (lateral and AP projections) showing a pseudoaneurysms of the linguo-facial trunk (arrows): A: Final control after internal trapping; D and E: Cast of coils. F: Retrograde filling of lingualvascular territory via internal maxillary artery anastomosis (arrowheads).