

Severe Post-Tonsillectomy Haemorrhage Treated with Selective Embolisation: A Pseudoaneurysm of the Lingual Artery

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ABSTRACT:

Severe post-tonsillectomy haemorrhage treated with selective embolisation: a pseudoaneurysm of the lingual artery

A 5 year old female patient with massive oropharyngeal haemorrhages in 13th, 34th, and 40th days after an adenotonsillectomy is evaluated by angiography because of a suspected vascular abnormality demonstrated a pseudoaneurysm of the right lingual artery. In angiography pseudoaneurysm was found and the affected artery was coil embolised. Vascular pathologies should be considered in the delayed, severe post-tonsillectomy haemorrhages. Angiography is an effective intervention for both diagnosis and treatment of these patients.

Keywords: Embolization, haemorrhage, pseudoaneurysm, tonsillectomy

ÖZET:

Selektif embolizasyonla tedavi edilmiş tonsillektomi sonrası ciddi kanama: Lingual arter psödoanevrizması

Adenotonsillektomi sonrası 13, 34 ve 40. günlerde masif orofarengeal kanama ile başvuran 5 yaşında kadın hasta vasküler patolojiden şüphelenilerek anjiyografi ile değerlendirildi. Anjiyografide sağ lingual arterde psödoanevrizma tespit edilerek koil ile embolize edildi. Gecikmiş, tonsillektomi sonrası ciddi kanamalarda vasküler patolojiler mutlaka akla getirilmelidir. Anjiyografi bu hastaların hem tanı hem de tedavisinde etkili bir girişimdir.

Anahtar kelimeler: Embolizasyon, kanama, psödoanevrizma, tonsillektomi

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INTRODUCTION

Tonsillectomy is the most common procedure performed by head and neck surgeons (1). Although it is a safe operation, it is always accompanied by the risk of arterial damage due to variation in the routes of the great arteries and their close proximity to the tonsillar lodges, the rich vascular supply of the tonsillar area, and an aberrant course of the internal carotid artery. Primary and secondary haemorrhages can occur postoperatively (1,2). The reported incidence of primary haemorrhage within 24 hours is 0.3-2.1% (3,4) and that of secondary haemorrhage is 2-10.3% (1). Arterial dissections and aneurysms are among the causes of severe post-tonsillectomy

haemorrhages (5). We present a case who was admitted with severe delayed postoperative bleeding secondary to formation of a pseudoaneurysm of the right lingual artery and was treated with arterial embolisation.

CASE

A 5 year old female patient underwent an adenotonsillectomy in another hospital. Thirteen days later, she was brought to our emergency room with a history of oropharyngeal bleeding. No active bleeding was observed. She was hospitalised and because no bleeding was seen during a 3-day follow-up period, she was discharged. Thirty-four days

postoperatively, she was admitted to our hospital with severe oropharyngeal bleeding. She was examined by paediatricians, paediatric surgeons, and ear, nose, and throat (ENT) surgeons. No provocative event that initiated the bleeding was identified. She was bleeding actively, but the tonsillar fossae appeared to have healed and the blood seemed to be originating from an inferior location. Based on

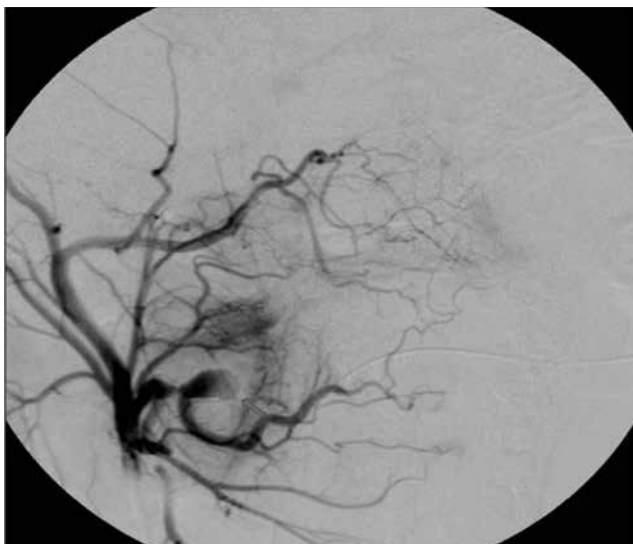


Figure-1: Lateral projection of right ECA, demonstrates a pseudoaneurysm of the proximal segment of lingual artery



Figure-2: After endovascular coil embolisation, the pseudoaneurysm is not filling anymore

differential diagnoses as delayed post-tonsillectomy bleeding and oesophageal variceal bleeding, she was examined under general anaesthesia. The bleeding stopped spontaneously. On the right side between the tonsillar area and tongue base, a protruding, non-pulsatile mass was observed. Abundant bleeding restarted during aspiration and was controlled by bipolar cauterisation. Blood transfusion was administered to stabilise the patient haemodynamically. Suspecting a vascular abnormality, we decided to perform arteriography. Informed consent was obtained from the patient's family. Bleeding recurred 1 day before angiography (day 40 postoperatively) and ceased spontaneously.

Angiography was performed through the right femoral artery. A 10x6 mm pseudoaneurysm was detected on the proximal segment of the right lingual artery and embolised by coiling (Figure-1,2). No complication followed this intervention. The patient was discharged 3 days later.

DISCUSSION

Post-tonsillectomy bleeding still remains a problem for head and neck surgeons and is the leading cause of post-tonsillectomy morbidity (6). During the tonsillectomy, blunt or penetrating trauma or suturing for haemostasis can cause dissections of the intima and adventitia of an artery and formation of a progressively expanding periarterial haematoma. A potential space forms at the centre of the haematoma due to liquefaction, and this communicates with the injured artery which causes circular dilation of the vessel called a pseudoaneurysm (2). Radiotherapy, peritonsillar abscesses, and local infections contribute to the formation of pseudoaneurysms in the neck. Although pseudoaneurysms secondary to tonsillectomies do not usually rupture, they typically present with bleeding (2). Pseudoaneurysms can occur either intraoperatively or in the very late postoperative period, 58 days postoperatively in one case (7). Although Van Crujden et al. (5) declared that post-tonsillectomy pseudoaneurysm haemorrhage is not observed in patients younger than 10 years, the literature includes cases of patients with age 2 (8), 3

(9), 5 (7,10), 7 (11-13), 8 (14,15), and 9 (16) years. The first symptom is generally recurrent, massive, gushing, and spontaneously stopping haemorrhage. A pulsatile mass in the pharynx or neck is rarely seen (5). Arteriography, ultrasonography, and computed tomography with contrast are diagnostic tools. Of these, arteriography remains the first choice, since it has the advantages of both diagnosis and treatment. Selective embolisation is important for decreasing the morbidity of post-tonsillectomy bleeding. Since it is more selective than ligation, it is strongly recommended in vascular pathologies (5,6). In cases of persistent bleeding, arteriography must be repeated, even if it appears normal at the first attempt. Maurer et al. (11) reported a patient who had normal arteriographic findings on postoperative day 10. A second arteriography performed following rebleeding 8 days after the first intervention showed a pseudoaneurysm.

In our case, arteriography was planned after the

second massive bleed. A pseudoaneurysm was confirmed and obliterated with coils of various sizes.

CONCLUSION

Pseudoaneurysms must be kept in mind, especially when they are recurrent, massive, life-threatening simultaneously bleeds post-tonsillectomy that tend to stop spontaneously. Pseudoaneurysmal bleeding can cause haemorrhagic shock and death. Early diagnosis and treatment is life saving. Suspicion of a vascular pathology is the crucial step to obtain a correct diagnosis. Arteriography is both a diagnostic and a therapeutic intervention. Embolisation is more selective than ligation and highly effective for decreasing post-tonsillectomy morbidity. This case is important for reminding primarily vascular pathologies over the abundant, recurrent, spontaneously stopping and late post-tonsillectomy period appearing haemorrhages.

REFERENCES

1. Kvaerner KJ. Benchmarking surgery: secondary post-tonsillectomy hemorrhage 1999-2005. *Acta Otolaryngol* 2009; 129: 195-8. [CrossRef]
2. Windfuhr JP, Sesterhenn AM, Schloendorff G, Kremer B. Post-tonsillectomy pseudoaneurysm: an underestimated entity? *J Laryngol Otol* 2010; 124: 59-66. [CrossRef]
3. Murty GE, Watson MG. Diathermy haemostasis at tonsillectomy: current practice-a survey of UK otolaryngologists. *J laryngol Otol* 1990; 104: 549-52. [CrossRef]
4. Carmody D, Vamadevan T, Cooper SM. Post tonsillectomy haemorrhage. *J Laryngol Otol* 1982; 96: 635-8. [CrossRef]
5. Van Crujlsen N, Geavendeel J, Dikkers FG. Severe delayed posttonsillectomy haemorrhage due to a pseudoaneurysm of the lingual artery. *Eur Arch Otorhinolaryngol* 2008; 265: 115-7. [CrossRef]
6. Levy EI, Horowitz MB, Cahill AM. Lingual artery embolization for severe and uncontrollable postoperative tonsillar bleeding. *Ear Nose Throat J* 2001; 80: 208-11.
7. Winfuhr JP, Schlöndorff G, Sesterhenn AM, Kremer B. From the expert's office: localized neural lesions following tonsillectomy. *Eur Arch Otorhinolaryngol* 2009; 266: 1621-40. [CrossRef]
8. Karas DE, Sawin RS, Sie KC. Pseudoaneurysm of the external carotid artery after tonsillectomy. A rare complication. *Arch Otolaryngol Head Neck Surg* 1997; 123: 345-7. [CrossRef]
9. Mitchell RB, Pereira KD, Lazar RH, Long TE, Fournier NF. Pseudoaneurysm of the right lingual artery: an unusual cause of severe hemorrhage during tonsillectomy. *Ear Nose Throat J* 1997; 76: 575-6.
10. Weber R, Keerl R, Hendus J, Kahle G. An emergency situation: traumatic aneurysm in head-neck-region. *Laryngorhinootologie* 1993; 72: 86-90. [CrossRef]
11. Maurer J, Beck C, Mann W. Aneurysm of the lingual artery as a cause of recurrent late hemorrhage following tonsillectomy. *Laryngorhinootologie* 1989; 68: 301-3. [CrossRef]
12. Menauer F, Suckfull M, Stabler A, Grever G. Pseudoaneurysm of the lingual artery after tonsillectomy. A rare complication. *Laryngorhinootologie* 1999; 78: 405-7. [CrossRef]
13. Hoff M, Graumuller S, Pau HW. Arterial aneurysms as cause of gushing post-tonsillectomy hemorrhage. *Laryngorhinootologie* 2005; 84: 680-2. [CrossRef]
14. DeFatta RJ, Verret DJ, Bauer P. Extracranial internal carotid artery pseudoaneurysm. *Int J Pediatr Otorhinolaryngol* 2005; 69: 1135-9. [CrossRef]
15. Simoni P, Bello JA, Kent B. Pseudoaneurysm of the lingual artery secondary to tonsillectomy treated with selective embolization. *Int J Pediatr Otorhinolaryngol* 2001; 59: 125-8. [CrossRef]
16. Heyn G, Metz L, Olthoff G. Aneurysm of the extracranial internal carotid artery (in German). *Zentralbl Chir* 1986; 111: 1312-20.