Oropharyngeal Stenosis: A Rare Complication Following Primary Adenotonsillectomy

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Objective

- Oropharyngeal stenosis (OPS) has been most commonly described in association with multilevel single stage airway surgery in children usually in conjunction with nasopharyngeal stenosis.
- This is a case report about an individual who developed OPS following simple adenotonsillectomy.
- She underwent successful surgical repair which included scar division and palatal scar lengthening with local advancement flap.

Background

Oropharyngeal stenosis (OPS) is a narrowing of the oropharynx as a result of adhesions from the base of the tongue to the anterior tonsillar pillars and inferior tonsillar fossa[1]. OPS can cause dysphagia, sleep disordered breathing, velopharyngeal incompetence due to tethering of the soft palate, and other symptoms. OPS has been shown to most commonly occur as a complication of multilevel, single-stage upper airway surgery involving lingual tonsillectomy[2] and is usually seen in conjunction with nasopharyngeal stenosis.

Whereas OPS used to occur infrequently in history as a result of oropharyngeal infection, the advent of antibiotic treatment for common infectious agents in the early 20th century has made OPS an extremely rare condition[3]. This case report highlights OPS as a rare complication following primary adenotonsillectomy.

Case Report

A 17-year-old female with no other significant medical history underwent primary adenotonsillectomy for chronic tonsillitis using a bipolar vascular sealing system. She had a normal perioperative course except for severe postoperative pain lasting several weeks following surgery.

Case Report (Cont.)

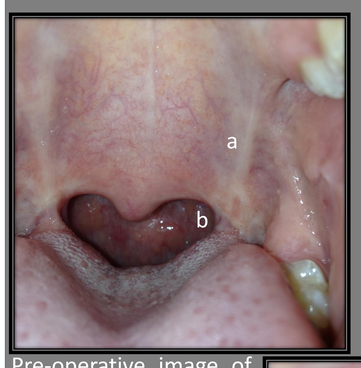
She presented four months postoperatively with complaints of persistent oropharyngeal pain, tethered tongue with restricted mobility, trismus, nasopharyngeal reflux with fluids, and hypernasal speech.

On examination she had firm, well-matured scar involving the soft palate laterally and between the palatoglossal and palatopharyngeal arches resulting in tethering of the lateral tongue bilaterally. The patient had minimal improvement with oral physical therapy.

She, therefore, underwent scar division, palatal scar lengthening with local advancement flap reconstruction. The scar was divided on the soft palate horizontally and the scar was excised laterally involving palatoglossal and palatopharyngeal arches. Local advancement flaps were used to primarily close the incisions.

She had an unremarkable postoperative course. At her two-month postoperative visit the patient reported complete resolution of oropharyngeal pain, restricted tongue mobility, velopharyngeal incompetence, and dysphagia.

Images



Pre-operative image of oropharynx with visible scars spanning (a) the soft palate laterally and (b) between the palatoglossal and palatopharyngeal arches to the base of tongue inferiorly.

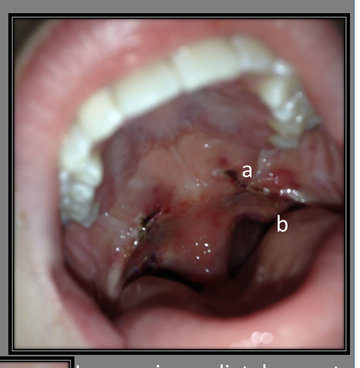
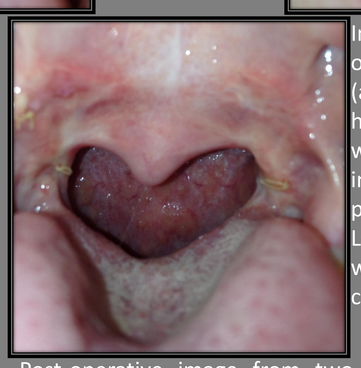


Image immediately post-op. The scar was divided (a) on the soft palate horizontally and the scar was excised (b) laterally involving palatoglossal and palatopharyngeal arches. Local advancement flaps were used to primarily close the incisions.



Post-operative image from two weeks after surgery show a widened oropharynx with some sutures still present. The extensive scar tissue is no longer present and the patient no longer suffers from restriction in mobility of the tongue and velopharyngeal incompetence.

Discussion

Numerous treatment options have been proposed for the treatment of OPS including balloon dilation, surgical repair, and steroid injection. McLaughlin et al[1] described the use of triamcinolone injection for mild cases; Prager et al used pharyngoplasty with the injections as an adjuvant[2]. The authors also theorized that young children have a greater risk of developing OPS as a result of their smaller upper airways. Others have proposed that the higher incidence among children may instead be due to the higher frequency of such procedures in this population as compared to adults[3]. Interestingly while most of the previous cases of OPS reported were younger than 6, our patient was 17 at presentation.

A predisposition for keloid formation as well as a number of traumatic factors related to surgical technique such as excessive cautery, revision surgery, and deep dissection of the inferior tonsillar pillars have been suggested as potential risk factors for developing OPS[1-2]. This is especially true in the case of multilevel, single-stage upper airway surgery which may pose greater than an 8% risk of an OPS complication[2].

This case of OPS was unique since the patient had not undergone multi-level surgery nor was there concurrent nasopharyngeal stenosis identified. She had no additional surgeries besides for her simple adenotonsillectomy. This patient underwent successful repair using the surgical procedure described with scar revision and local advancement flap. Surgery was chosen for her treatment since the scar was well defined and conservative measures had failed. The patient recovered and was completely asymptomatic at her two month follow-up. This case report demonstrates that primary surgical repair should be considered for patients with severe OPS following simple adenotonsillectomy if conservative measures were unsuccessful.

Conclusion

This case report highlights OPS as a rare complication following primary adenotonsillectomy. Patients may present with symptoms of velopharyngeal incompetence, pain, or dysphagia. Surgical correction of OPS should be considered if conservative measures have failed.

References

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2 Prager JD, Hopkins BS, Propst EJ, Shott SR, Cotton RT. Oropharyngeal Stenosis: A Complication of Multilevel, Single-Stage Upper Airway Surgery in Children. *Arch Otolaryngol Head Neck Surg.* 2010;136(11):1111-1115. doi:10.1001/archoto.2010.197
3 Banerjee, D, Wang, JC, Demke, JC. Novel use of tissue expander for dilation of oropharyngeal stenosis. *International Journal of Pediatric Otorhinolaryngology*. 2014;78(11):2018-2020. doi: 10.1016/j.ijporl.2014.08.045