

Excision of Sublingual Gland as a Definitive Treatment for Ranulas in Pediatric Patients

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Introduction

A ranula is a pseudocyst located on the floor of the oral cavity, resulting from the retention of mucous or the extravasation of saliva from the sublingual gland. Pseudocysts differ from true cysts in that they lack an endothelial or epithelial cell lining. Unlike with a true cyst, removing a ranula and its cyst walls is not curative. The ranula will recur from continued secretions from the sublingual gland. Over the years, several approaches have been described for the treatment of ranulas, however there is still controversy over treatment of choice. Sublingual gland excision has been accepted as an effective treatment, but there remains concern about the safety of the procedure due to location of the sublingual gland.

Objectives

The aim of this case study is to demonstrate that sublingual gland excision has lower post-operative complication and recurrence rates than alternative methods for treating ranulas.

Methods

Setting: Tertiary pediatric hospital

Design: Retrospective chart review

Methods: Chart review of pediatric patients between 2004 and 2015 at Children's Hospitals and Clinics of Minnesota by the Department of ENT and Facial Plastic Surgery. Data examined included age, gender, pre-operative scans, location and size of lesion, surgical technique, complication and recurrence rate.

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Results

There were 22 patients identified between 2004 and 2015 who fit inclusion criteria, ages ranged from 1 month-17 years. Inclusion criteria consisted of clinical diagnosis of a ranula and operative treatment at our facility.

Of the 22 patients identified, 17 patients had no previous treatment for their ranulas. Patients who had received previous treatment did so at other facilities.

All patients were treated under general anesthesia. During the procedure, an incision was made on the inferior surface of the tongue circumferential to the margins of the ranula. The cyst is dissected to the floor of mouth.

After the ranula is identified, it is either drained or removed in conjunction with the sublingual gland. There is less emphasis placed on removal of the cyst wall in comparison to when removing a true cyst. This is due to the fact that ranula cyst walls lack a cell lining and thus the cyst wall is not an origin for recurrence.

Previous Treatment	No. of Patients (%)
None	17/22 (77.2)
Drainage of cyst	3/22 (13.6)
Drainage with steroid injection	1/22 (4.5)
Ranula excision	1/22 (4.5)

Figure 1: Breakdown of treatments prior to Sublingual Gland Excision



Figure 2: Examples of Sublingual Ranulas
<https://en.wikipedia.org/wiki/Ranula>

The focus of the surgery is on safe removal of the sublingual gland, which serves as the origin of the ranula. The sublingual gland is dissected out and removed in its entirety, with special attention paid to protect the lingual nerve and submandibular duct. After the sublingual gland was excised, the mucosa was reapproximated. Patients followed up in clinic one month post-operatively.

2 of the 22 patients underwent partial sublingual gland excision, in which the ranula and anterior portion of the gland contiguous with the ranula was removed. All other patients had full excision of the sublingual gland. Additionally, two patients had removal of the submandibular gland in addition to removal of the sublingual gland due to the size of the ranula.

There were no postoperative infections or bleeding of the incision sites. One patient reported an enlarged lymph node, which was felt to most likely be a reactive node. One patient experienced a numbness of the lateral tongue and another patient experienced hypoglossal nerve injury with deviation of the tongue. The hypoglossal nerve was visualized during the surgery and was protected during the surgery. However, all of these complications were resolved within months of the surgery with no lasting deficits.

Of the 22 patients, only one patient had recurrence of the ranula.

Conclusions

The treatment of choice for both simple ranulas and plunging ranulas is excision of the sublingual gland in addition to ranula removal. Our study showed a 95.5% success rate in the treatment of ranulas with no long-term complications.