Combined Transoral Sialendoscopic Approach to a Retained Parotid Wire Basket
Shumon I. Dhar, MD1; Mark F. Marzouk, MD2
1Stony Brook University School of Medicine
2Stony Brook University Medical Center Division of Otolaryngology-Head and Neck Surgery

ABSTRACT

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the complications of sialendoscopy and operative technique used to treat a retained wire basket in Stensen's duct.

Objectives: Interventional sialendoscopy has become a popular technique used in the treatment of symptomatic sialolithiasis with either wire basket or forceps used for stone extraction. A known complication of sialendoscopy is a retained wire basket, and this, if not handled cautiously, may lead to duct avulsion. Here we report a case describing a combined transoral approach used to retrieve a retained basket in Stensen’s duct.


Methods: A 51 year old man underwent interventional sialendoscopy to treat obstructive sialadenitis of the left parotid gland. When the wire basket was deployed within the duct we were unable to retrieve the basket with manual traction. In order to avoid ductal avulsion a holmium YAG laser was used to fragment the stone within the duct without success. Lastly, a combined transoral sialendoscopic approach was used successfully to retrieve both the wire basket and a 6 mm stone.

Results: Postoperatively the patient had significant swelling of the left side of his face with a stent placed in the duct draining clear saliva. No other complications, including facial nerve palsy, were noted prior to discharge and during followup.

Conclusions: Methods for how to retrieve a retained wire basket have not been described in the literature other than conversion to a total gland excision. A combined transoral approach to retrieve a wire basket represents an additional option for management of this complication.

INTRODUCTION

Obstructive sialadenitis is the predominant disease affecting major salivary glands:
- Submandibular gland (80-90%)
- Parotid gland (5-10%)

Causes include:
- Sialolithiasis, stenosis, mucus plugs, polyps, foreign bodies, external compression, or variations in anatomical ductal systems.

The majority of sialoliths are 3-7 mm in diameter with only 7.6% measuring over 15 mm.

1993 Katz et al first described the use of flexible sialendoscopy with forceps or wire basket for the diagnosis and treatment of sialolithiasis.

In review of 1213 pts sialendoscopy had 86% success rate.

Additional techniques such as transoral sialendoscopy-assisted external or trans-oral gland approach have since been described.

One of the complications of these procedures is a retained wire basket and subsequently duct avulsion due to excessive manual traction.

CASE REPORT

HISTORY

A 51 year old man presented with a history of recurrent left sided parotid gland swelling for multiple years. He reported episodic swelling and pain associated with eating.

Physical exam: Left parotid gland swelling with clear saliva from the duct. A non-con CT scan revealed a 7 x 2 mm stone in the proximal parotid duct

Recommendation: Sialendoscopy of the left parotid gland with basket retrieval of the stone

PROCEDURE

1. The papilla of Stensen’s duct was identified and dilated. A 1.3 mm Marchal scope was advanced through the duct

2. The scope was advanced to the bifurcation of the duct to the post hilar region where the sialolith was identified and a wire basket was secured around the stone

3. The parotid gland and the SMAS were moving when traction was applied to the basket. We felt this scenario risky for duct avulsion

4. A holmium YAG laser at 6 watts and 300 Hz was used to fragment the sialolith

5. The stone was impacted in the wall of the duct thus a combined endoscopic assisted trans-oral approach was chosen

Basket/stones were palpated from the buccal mucosa, anterior to the retromolar trigone.

Incision using 11 blade was made through the mucosa and hemostasis with bipolar cautery

The submucosa was dissected through and the buccinator muscle was then identified and crossed. The buccal fat pad was laterally dissected and Stensen’s duct identified.

The duct was dissected bluntly and opened from the papilla to the bifurcation. A 6 mm stone, plus additional fragments were removed

The endoscope was reinserted to ensure complete stone removal. A guide wire was fed through the operating channel. A stent was placed over the wire to the bifurcation.

POST-OPERATIVELY

The patient had edema of the left face. Decadron 12mg, IV clindamycin, and ice were given.

Patient sent home on PO antibiotics with no evidence of nerve palsy or other complications

DISCUSSION

Figure 1. (Left) Marchal Sialendoscope Set. (Right) Normal endoscopic view of the branching within salivary ducts

Figure 2. (Left) Sialendoscopy and basket approaching sialolith. (Right) Wire basket secured around sialolith

Figure 3. (Left) Close up view of sialolith. (Right) View of traction being applied to wire basket

1% of cases have retained baskets requiring firm traction for retrieval, and basket rupture in 0.6% of cases.

Sialendoscopy with basket retrieval is the standard for parotid stones <4-5 mm.

Sialendoscopy-assisted trans-oral stone retrieval has also been recommended for large stones 3-4 mm in diameter and located in the anterior and middle third of the duct.

Post-hilar stone location is subject to greater difficulty in wire harvest, and may create a higher risk for basket retention.

In vitro studies describe the holmium YAG and frequency-doubled double-pulse neodymium YAG laser capable of fragmenting sialoliths.

CONCLUSIONS

Methods for how to retrieve a retained wire basket have not been described in the literature other than conversion to a total gland excision.

The major risk of the external approach is injury to the superior buccal branch of the facial nerve. In a previous study this complication was reduced by dissection close to the duct.

Our transoral combined approach might be technically challenging, but it does avoid the external scar and the possibility of injuring the facial nerve.

REFERENCES