Sialendoscopy After Prior Surgical Intervention for Sialolithiasis

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ABSTRACT

Objective: To evaluate the use of interventional sialendoscopy in patients who have previously been treated with surgical intervention for sialolithiasis.

Methods: Retrospective chart review of all patients presenting to a tertiary care hospital for sialolithiasis with a history of transoral intervention or sialadenectomy between June 2008 and December 2012.

Results: 18 patients with prior surgical intervention for sialolithiasis presented to our clinic with recurrent sialolithiasis. The mean age was 55 years (range 33 to 77), and included 7 (37%) males and 11 females. The majority of patients presented with submandibular complaints (14/18, 78%). Sialodochoplasty was the most common prior intervention (9, 50%). Other interventions included gland excision (4), transoral excision (4), and office dilation (1). The time between initial transoral manipulation or gland excision and subsequent sialendoscopy ranged from two months to 20 years (median 26 months).

Successful cannulation of the duct occurred in 94% of cases (17/18). One case required a papillotomy for cannulation, and two cases were cannulated through a fistula created by the prior intervention, instead of via the natural os. After guidewire technology was incorporated into the sialendoscopy system, the single patient unsuccessful cannulation occurred under a second sialendoscopy procedure in which guidewire-aided cannulation was successful, thus improving successful cannulation to 100% (18/18).

Sialolith was visualized in 15 cases (89%). Sialolith removal was successful in 93% of these patients (14/15). Sialolith removal was achieved via an endoscopic approach in seven patients (50%), via the combine approach in six patients, and via gland excision in one patient. The one gland excision preformed early occurred in our experience with sialendoscopy and prior to the availability of laser lithotripsy at our institution.

In three cases a stone was not visualized, despite the observance of a stone on preoperative imaging. One of these cases had a surgical incision and drainage due to abscess development after imaging, but prior to sialendoscopy. The duct was successfully visualized with the sialodochoplasty up to 1cm. It is unclear whether the stone was extruded at the time of incision and drainage or was proximal to the point of visualization. The second case of non-visualization occurred despite passage of the duct and visualization of the duct up to the trifurcation point, suggesting an intrapapillary stone location. The third non-visualized stone occurred in a patient with a remote history of incision and drainage of the gland, which created extensive scarring, debris, and a fistula tract of the duct. Sialendoscopy was used to explore via the papilla and fistula tract. Given the extensive distortion of the anatomy and the creation of fistulas, it is uncertain if the stone was intraluminal at the time of sialendoscopy.

Mean sialolith size was 7 mm, range 3-10mm. Sialolith location was distal-to-mid duct in 8 cases, proximal-to-bilar in 6 cases, and intraglandular in 4 cases. The intraglandular sialolith corresponded to the one case of gland excision. The one visualized sialolith that was unable to be removed was located at the hilum of the parotid gland, past the reach of the endoscope and basket.

Resolution of symptoms was achieved 100% of patients at last follow up. One patient did require a second sialendoscopy with the guidewire cannulation, as discussed above, before symptom resolution was achieved. The median follow up duration was 15 months (range 8 weeks to 20.5 months). Patients were encouraged to call or return as needed if new symptoms developed.

Two patients required further medical intervention, both in the form of antibiotics. One patient developed cellulitis of the area 1.5 years removed from sialendoscopy, immediately after a dental cleaning procedure. This patient was status-post sialadenectomy at initial presentation to our institution. It is felt that the cellulitis was unrelated to our intervention. A second patient developed an episode of sialadenitis requiring antibiotics, likely secondary to a mucus plug that was released and irritated in the office.

DISCUSSION

Prior to the development of sialendoscopy, patients were limited to conservative treatment, sialodochoplasty, or gland excision. Given the potentially recurrent nature of sialolithiasis, patients with these surgical interventions will continue to present for management. Over the last 10 years sialendoscopy has been shown to be a successful, gland preservative therapy of the management of sialolithiasis. After surgical intervention for sialolithiasis, there is a risk for scarring of the papilla and stenosis of the duct. However, given our results, these side effects do not appear to interfere with completion of sialendoscopy, as successful cannulation was achieved in 94% of cases, and sialolith removal was successful in 93% of cases in which a stone was visualized.

Sialendoscopy was successful, even when the prior surgical intervention prevented cannulation via the natural os. Two patients with recurrent disease required cannulation via a fistula site present as a result of the prior surgical intervention. An additional patient required a papillotomy for entrance of the sialendoscope. A final patient required a repeat procedure with use of guidewire technology for cannulation.

Recurrent sialolith size (mean 7mm) was similar to average sialolith size reported in the literature (8.4mm). Gland distribution of recurrent sialolith (78% submandibular gland) was comparable to the gland distribution reported in the literature (75% SMG).

Notably, four patients presented with recurrent sialolithiasis after prior sialadenectomy. It is unclear whether these sialoliths were left in the duct at the time of sialadenectomy, or if they developed after that procedure. Given the substantial median duration between sialadenectomy and presentation for sialendoscopy, 8.5 years, the development of new sialoliths is a possibility. This emphasizes the importance of addressing the duct at the time of sialadenectomy and calls into question sialadenectomy as a definitive treatment for sialolithiasis. This finding further promotes sialendoscopy and its associated low rate of morbidity in the treatment of sialolithiasis, recurrent or otherwise.

CONCLUSIONS

Sialendoscopy is an effective tool for the management of recurrent sialolithiasis in patients with a history of prior transoral intervention or sialadenectomy. Cannulation may be more challenging in these patients, but can still be accomplished.

REFERENCES


Percent Successful

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<th>Procedure</th>
<th>Sialolith Visualization</th>
<th>Symptom Resolution</th>
<th>Removal of Sialolith</th>
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<tr>
<td>Cannulation</td>
<td>100%</td>
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<tr>
<td>Sialolith Visualization</td>
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<tr>
<td>Removal of Sialolith</td>
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<tr>
<td>Symptom Resolution</td>
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Prior Intervention

![Diagram showing prior intervention options]

Office Dilation 6%
Gland Excision 22%
Sialodochoplasty 50%
Transoral Excision 22%