EVOLUTION OF SIALENDOSCOPY IN CLINICAL PRACTISE: A SURVEY OF ATTENDING PRACTITIONERS

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ABSTRACT

Introduction & Objective

Sialendoscopy is a relatively new and minimally invasive procedure that can be used as a diagnostic and therapeutic tool in the management of salivary gland disease. This study aimed to assess the degree to which medical practitioners are performing sialendoscopy to manage sialolithiasis.

Methods

Data collection was done by an online exploratory survey filled by one hundred medical practitioners. The survey consisted of ten closed-ended multiple choice questions.

Results

Multiple disciplines of medical practitioners encountered a considerable number of patients with sialolithiasis per year however, many did not feel they could perform sialendoscopy independently and subsequently referred patients to other professionals for further management.

Conclusion

This has illustrated that most medical practitioners managing salivary gland disease would benefit from theoretical and practical training in performing sialendoscopy confidently.

INTRODUCTION

Salivary gland disease encompasses various different pathologies ranging from sialolothiasis to salivary duct strictures, mucous plugs and polys as well as salivary gland malignancies. Previously the use of antibiotics, anti-inflammatories and sialedenectomy were the main stay of treatment for many of these disorders' until the introduction of sialendoscopy.

First described by Katz et. Al. this relatively new technique has become more widely used for the management of sialolithiasis and benign salivary duct stricutures as part of gland preserving procedures. The technique involves the use of semi-rigid endoscopes to cannulate and examine the salivary ducts. The interventional aspect of this procedure includes the use of wire baskets, drills and fibre-optic lasers to breakdown and remove calculi.

During the evolution of sialendoscopy there has been little to no consensus regarding the which factors are taken into consideration when determining which patients would qualify for gland preservation therapy. There is little accompanying literature regarding sialendoscopy practises and patient parameters.

The aim of this study was to ascertain current clinical practises amongst attending medical practitioners regarding sialendoscopy by means of a structured closed-ended survey. This upcoming data could potentially be used to implement sialendoscopy specific protocols.

METHODS

An exploratory survey study design ws used for this study and participant sampling was done by a purposive convenience sampling approach. Sample size included 100 treating clinicians ranging from medical trainees, otorhinolaryngologists, maxillofacial surgeons, general surgeons, dentists and general practitioners.

An online survey was done via Survey Monkey for data collection comprising of 10 closed-ended multiple choice questions. This questionnaire was distributed to individuals meeting the study criteria via an online link.

Regarding data analyses descriptive statistics was used to interpret the data by coding and classifying responses according to their percentage of occurrence.

Ethics clearance was granted and all information was kept anonymous and confidential. For this particular study there was a risk of bias due to sampling bias and a small sample size thereby not giving an accurate representation of the wider population of practitioners and therefore could not be extrapolated to the wider population.

Table 1. Level of Experience of Practitioners who completed the

Sialendoscopy	Survey (n = 100)
Experience	Prevalence (%)
Dentist	34
General Practitioner	27
Specialist ENT	24
Trainee	7
General Surgeon	5
Maxillofacial Surgeon	3

RESULTS

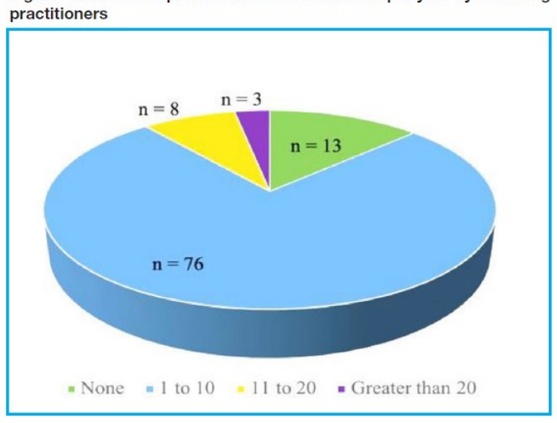
100 clinical practitioners formed part of the survey of which only 89 questionnaires were fully answered. Most part of which we're dentists, as indicated in Table 1. The rest of the participant group were largely made up of ENT surgeons and general practitioners.

Table 2. Prevalence of Sialoliths

Presence of Sialoliths	Disease	Non-Disease	Total
Positive	3	97	100
Negative	2	98	100

Regarding the prevalence of salivary stones most practitioners (76%) were encountering 1 to 10 patients per year with sialolithiasis and only a small subset seeing more than 20 patients per year. As can be seen in Figure 1.

Figure 1: Number of patients with Sialoliths seen per year by attending practitioners



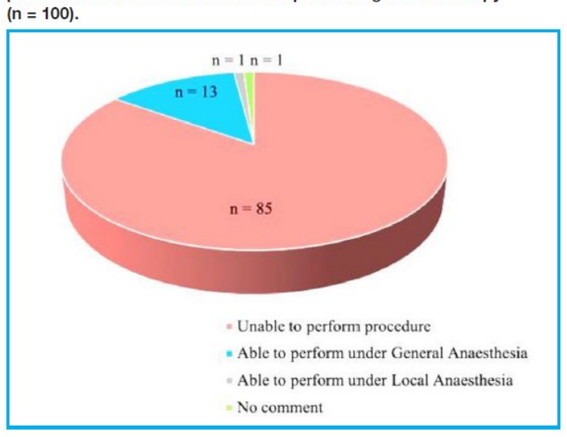
46% percent of the participants reported that most prominent age group with salivary stones ranges from 16 to 40 years and closely followed by 40 to 60 year old patients. Salivary gland stones were not commonly seen in extremes of age ie. the elderly (>60 years) and paediatric patients (>16 years).

Penicillin was the most commonly prescribed antibiotic for salivary stones (69% of practitioners) while only 17% of practitioners prescribed antibiotics other penicillin, macrolide or quinolones.

Regarding imaging investigations to confirm salivary stones only 23% or practitioners used sialograms followed by CT scans (16%) and ultrasound (15%). 19% of participants used more than one imaging modality to confirm diagnosis.

Majority of practitioners (82%) reported they do not have access sialendoscopy in their setting and were unable to perform the technique of sialendoscopy. Very few (10%) were confident in performing the procedure independently and only 14% when assisted by anther surgeon. Upt o 76% of participating practitioners would prefer to refer patients to other colleagues.

Figure 2. Number of Patients with sialoliths seen per year and the practitioners' level of confidence in performing sialendoscopy (n = 100).



Regarding sialendoscopy training 89% of practioners felt the would benefit from a sialendoscopy workshop including both theoretical and practical training. Regarding outcomes of sialendoscopy 68% if practitioners were unsure that it would change the number of patients requiring adenectomy, 21% believed it decreased the number of required open surgeries and the remaining 9% thought it did not make a difference.

DISCUSSION

With the advent sialendoscopy there has been an increase in gland preserving management approach to decrease the morbidity of having open surgery for sialolithiasis. According to this study 73% of practitioners were less to not experienced in the management of sialolithiasis and are mainly referring these patients.

Considering the groups of health practitioners that were participating in the study many were not familiar with inflammatory or obstructive salivary gland diseases as is indicated the frequency of salivary gland stones they are experiencing in their rooms - 1 to 10 patients per year. Included in this study are general practitioners, making up 27% of the participants, whom in the normal setting do not have access to sialoendoscopy and the specialized equipment to perform the procedure and may not have been an appropriate group to perform in the study. Sialolithiasis is mostly managed by ENT specialists or maxillofacial surgeons and considering they only make up 27% of the study participant this study might not be a true representation of the utilization of sialendoscopy in practise.

The incidence of sialolithiasis has yet to be described in the South African setting. This study indicates that practitioners are seeing 1 to 10 patients per year with sialolithiasis and the majority of these patients were young adults. This particular population could benefit greatly from gland preserving sialendoscopy. Pre-requisites to performing sialendoscopy include sufficient and appropriate equipment and experienced personnel. Diagnostic sialendoscopy can be performed by less experienced practitioners where as interventional sialendoscopy should be performed by experienced personnel to ensure sufficient results.

Based on international studies incidence of sialolithiasis ranges between 1 to 3% of the population, this study echoes this with an estimated incidence of 2.5%. The peak incidence is in the third and fifth decade of life with 4% occurring in patients younger than 20 years of age. This study follows this trend as well.

Ultrasound and CT have superseded sialograms for the investigation of salivary duct obstruction, however sialography is useful in illustrating the ductal system beyond a calculus. Sialogram was the preferred imaging technique in this study. Complications of sialography include the radiation exposure and the possible migration of the stone proximally into the gland. It may make the subsequent sialendoscopy more difficult.

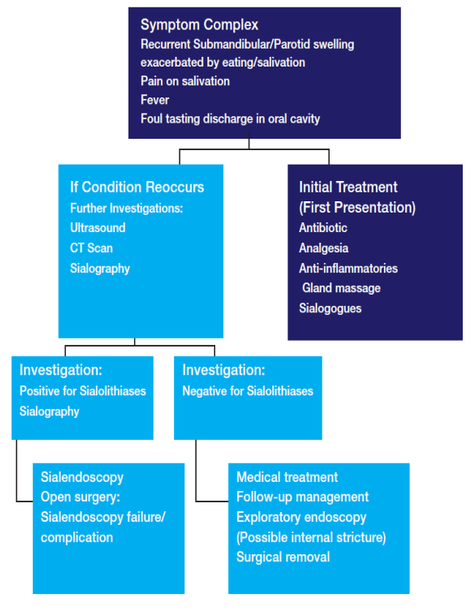
Conservative treatment is dependent on the size and location of the calculus and is acceptable and first line treatment for small calculi. It includes hydration, infrared heating and gland massage with concurrent antibiotics if there is suspected infection. Success rate of spontaneous stone passage at 3 months is 10%.

Surgical management includes gland preserving sialendoscopy and open sialoadenectomy. Sialendoscopy is a relatively new procedure and poses a definite learning curve in achieving success. Steck et al conducted a study to evaluate the learning progression of a single surgeon in becoming proficient in sialendoscopy. Operative times and complication rates were higher In the first 50 cases performed and most common problems encountered were unable to cannulate the duct and failure to remove the stone. Luers et. Al. determined that 30 cases were needed to achieve satisfactory level and 50 cases for true proficiency. These studies indicate that there is a steep learning curve and that sialendoscopy technique improves with time and experience. Long term results are based on the ability to avoid gland resection and having less complications as opposed to sialadenectomy.

CONCLUSION

This study has illustrated that practitioners are aware of the procedure of sialendoscopy and are however unable to perform it confidently. There is definitely a need for further training in sialendoscopy that would enhance our clinical practise.

Figure 2. Number of Patients with sialoliths seen per year and the practitioners' level of confidence in performing sialendoscopy (n = 100).



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