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Sialendoscopy for sialolithiasis in children: 4-8 years follow up

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Abstract

Sialolithiasis is rare in children, there are no guidelines for its treatment, and there are few, if any, long term follow-up studies. We report a retrospective review of medical records of children who were treated for sialolithiasis by sialendoscopy between 1 January 2007 and 31 December 2011, and who have been followed up for 4-8 years. Personal and clinical details, including age, sex, symptoms, whether the lithiasis was parotid or submandibular, the technique of sialendoscopy and complications, were recorded. Twenty-six children (30 sides) were successfully treated by sialendoscopy between 2007 and 2011 (mean (range) age 12 (3-17) years). Stones were removed from the parotid gland in four patients and the submandibular gland in 22. The main indication for sialendoscopy was swelling of the salivary gland during meals. Twenty-six procedures were done endoscopically. Twelve were treated with a wire basket alone, 10 by the combined approach, and laser was used in eight. Four patients developed complications, but without long-term effects. During follow-up of 4-8 years there were no recurrent swellings. We conclude that endoscopic treatment of stones in childhood is an efficient and conservative option for salivary glands, has few complications and no clinical recurrence at medium to long-term follow-up.

Keywords: salivary; sialendoscopy; salivary stones; pediatrics

Introduction

Sialoliths are calcareous concretions that may be found in the ducts of the major or minor salivary glands or within the glands themselves, and they are rare in children.[1,2] The condition is commonly found in middle-aged adults and the submandibular gland is most often affected.[3] We know of fewer than 150 cases reported in children,[3,4] and before the year 2000 most of the reported cases were treated by submandibulectomy or a transoral approach.

In this retrospective study of sialolithiasis in children, we found sialendoscopy to be a suitable conservative treatment with few complications and no recurrence on medium to long-term follow-up.

Patients and methods

We organised a retrospective study at the department of Otorhinolaryngology of the Edouard Herriot University Hospital (Lyon, France) and in the Ear, Nose and Throat department of the Infirmerie Protestante (Caluire, France). All patients under 18 years old who were treated by sialendoscopy for lithiasis between 2007 and 2011 were included.

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Table 1
Personal and clinical details of 26 patients (30 sides).

Variable	No
Sex:	
Male	12
Female	14
Mean (range) age (years)	12 (3-17)
Gland affected:	
Parotid	4
Submandibular	26

Personal, surgical, and clinical details, as well as sex, age, symptoms, and site were recorded, including preoperative data such as ultrasonography or computed tomographic scan (CT).

All sialendoscopies were done under general anaesthesia and with the 1.3 mm, "all-in-one" device (reference 11575; Karl Storz GmbH, Tuttlingen, Germany). The diagnosis was made from clinical examination, palpable stones, history of disease, and CT/ultrasound. We confirmed the diagnosis and removed the stones in a single procedure. We used a freshly prepared irrigation solution for all sialendoscopies, which was prepared by mixing prednisolone 120 mg and 1% xylocaine 200 mg/20 ml with saline 500 ml. The site was irrigated during the procedure with a pump.

The object of the sialendoscopies was to retrieve all the stones. A wire basket was used for floating stones smaller than 3 mm (which is L1 according to the Lithiasis, Stenosis, and Dilatation (LSD) classification).[1] For L2 and L3 fragments we used YAG-thulium laser fragmentation followed by the wire basket, or intraoral excision assisted by sialendoscopy using the combined approach (sialendoscopic visualisation of the stone and intraoral excision without removal of the gland). After the procedure all patients were given amoxicillin–clavulanic acid 80 mg/kg/day for seven days and dexamethasone 1 mg/kg/day for three days.

Retrospective evaluation was made 4-8 years after the procedure by telephone questionnaire, when we collected information about the number of attacks before the procedure, postoperative swelling or pain, salivary flow, and the number of attacks since, together with a note of the patients' satisfaction.

Results

Between 2007 and 2011, 26 patients under 18 years old (30 sides) were admitted with sialolithiasis, which was 26/500 total patients (5%). The male:female ratio was 12: 14 (Table 1, Figs. 1 and 2).

Ten sialendoscopies, all classified L3a[1] were treated by the combined approach (Table 2). The first examination was to locate the stones and facilitate the excision by transmucosal illumination. The second and final sialendoscopy was to make sure no stone had been missed.

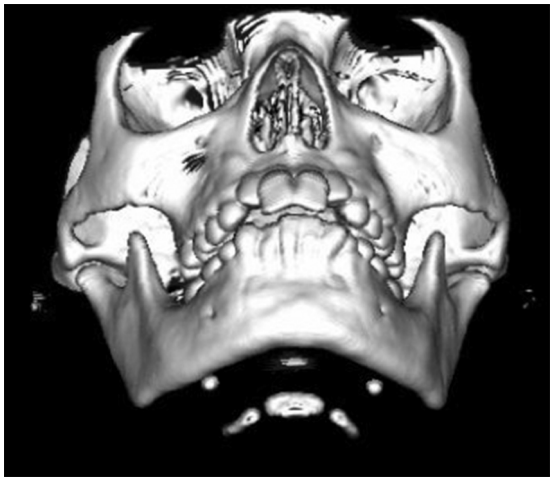

Fig. 1. Bilateral lithiasis.

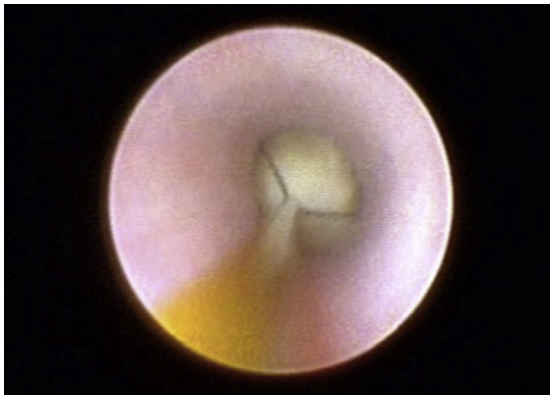

Fig. 2. Stones caught by wire basket.

Table 2
Results (26 patients, 30 sides).

Variable	Number
Intervention:	
Wire basket	12
Combined approach	10
Laser	8
Submandibulectomy	0
Complications	4
Episodes/month before intervention	30
Acceptable salivary flow after 4-8 years	21

No other procedures were required.

Eight stones were treated by laser fragmentation (all having been evaluated as L2a, L2b or L3b) which was done with a with YAG-thulium laser through the operator channel of the sialendoscope (Fig. 3). Residual fragments were removed during the same procedure using a wire basket.

In two patients it was not possible to dilate the papilla so we were unable to introduce the sialendoscope the first time. After making a transmucosal incision medial to the plica sublingualis[2] and dissection of the duct, we were able to explore the rest of the duct.

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