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ORIGINAL ARTICLE

The learning progression of diagnostic sialendoscopy☆,☆☆

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KEYWORDS
Salivary gland diseases;
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Abstract
Introduction: Sialendoscopy is becoming the gold standard procedure for diagnosis and treatment of Salivary Gland Inflammatory Diseases.
Objective: To evaluate the learning progression of a single surgeon to implement and perform diagnostic sialendoscopy: to estimate how many procedures were necessary to achieve better results; if it was higher rate of complications in the beginning.
Methods: Retrospective analysis involving 113 consecutive sialendoscopies performed from 2010 to 2013. According to a descriptive analysis of the factors related to surgeon's experience, the casuistic was divided into two groups: group (A) comprising the first 50 exams, and group (B) the last 63. Groups were then compared concerning demographic and peri-operative aspects.
Results: In Group A, failure to catheterize papilla were 22% *versus* 3% in B ($p = 0.001$). Failure to complete examination was 30% in group A *versus* 6% in B ($p = 0.001$), and necessity to repeat exams was 22% in group A *versus* 10% in B ($p = 0.058$). The complication rates were 18% in group A, and 10% in B ($p = 0.149$). Operative time was slightly shorter in group B (56 *versus* 41 min, $p = 0.045$).
Conclusion: We found better outcomes after the first 50 diagnostic sialendoscopies. Complication rates were statistically the same between early and late groups of experience with sialendoscopy.

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PALAVRAS-CHAVE
Doenças da glândula salivar;
Endoscopia;
Diagnóstico

Progressão do aprendizado da sialoendoscopia diagnóstica

Resumo
Introdução: A sialoendoscopia vem se tornando o procedimento de referência para o diagnóstico e o tratamento das doenças inflamatórias da glândula salivar.
Objetivo: Avaliar a progressão de aprendizado de um mesmo cirurgião para implementação e realização da sialoendoscopia diagnóstica: verificar quantos procedimentos foram necessários para a obtenção de resultados melhores e se houve ocorrência de maior taxa de complicações no início do aprendizado.
Método: Análise retrospectiva envolvendo 113 sialoendoscopias consecutivas realizadas de 2010 a 2013. De acordo com uma análise descritiva dos fatores relacionados à experiência do cirurgião, a casuística foi dividida em dois grupos: grupo (A), compreendendo os primeiros 50 exames; e grupo (B), os últimos 63. Em seguida, os grupos foram comparados, levando em consideração os aspectos demográficos e perioperatórios.
Resultados: No grupo A, a não realização do cateterismo papilar foi de 22% *vs.* 3% em B (p = 0,001). A não realização de um exame completo foi de 30% no grupo A *vs.* 6% em B (p = 0,001), e a necessidade de repetir o exame foi de 22% no grupo A *vs.* 10% em B (p = 0,058). Os percentuais de complicações foram 18% no grupo A e 10% em B (p = 0,149). O tempo operatório foi ligeiramente menor no grupo B (56 *vs.* 41 minutos, p = 0,045).
Conclusão: Verificamos melhores desfechos após as 50 primeiras sialoendoscopias diagnósticas. Os percentuais de complicações foram estatisticamente semelhantes entre os grupos inicial e avançado de experiência com a sialoendoscopia.

Introduction

In the last 15 years the gold standard in the treatment of Salivary Gland Inflammatory Diseases (SGID) moved from open surgical resection to endoscopic treatment, with the obvious gain of avoiding complications from parotid and submandibular surgery, like scars and nerve injury, and preserving salivary function.[1,2] Sialendoscopy was first described for the treatment of sialolithiasis.[3,4] Rapidly the technique gained space in the diagnosis and treatment of other SGID, like Radioiodine sialadenitis, Sjogrens disease and Juvenile recurrent parotiditis.[5] However, the use of very delicate instruments in very small and delicate structures as the salivary papillae and ducts proved to be very challenging.[6] In 2006, Marchal et al.[7] were working yet to improve the sialendoscopy technique to enter the small branches of the salivary ducts.

As the benefits of the sialendoscopy in regard to the open surgeries became evident,[1,2] some training centers were established, as the European Sialendoscopy Training Center, created in 2002 by Francis Marchal.[1] Despite a growing experience about this procedure, some important doubts remain, such as whether the complication rate is higher at the beginning of the learning curve and how many cases are necessary for a surgeon to perform a safe sialendoscopy.[8,9] Thus, the objective of this paper is to review and evaluate the learning progression of a single surgeon to implement and perform diagnostic sialendoscopy in both parotid and submandibular glands, in order to estimate how many procedures were necessary to achieve good results and if the rate of complications was higher in the beginning.

Methods

This is a retrospective, transversal, consecutive-cases study. It was approved by the Institutional Review Board (CO003), and all patients gave their informed consent prior to their inclusion in the study.

All patients submitted to sialendoscopy performed by the same surgeon from September 2010 to January 2013 were included. Parotid or submandibular exams were all included. There was no exclusion criterion. Accordingly, the casuistic comprises 113 sialendoscopies concerning 65 patients (62% females) with a mean age of 46 years (ranging from 4 to 83). Concerning the examined glands, 45% were parotid and 55% submandibular glands.

The surgeon had an initial hands-on training on fresh pig head specimens at the ESTC – European Sialendoscopy Training Centre, Geneva, Switzerland.

All patients initially undergone a diagnostic sialendoscopy.

Patients were placed in supine or semi-seated position, under local or general anesthesia. We utilized Marchal diagnostic and interventional miniature endoscopes (Karl Storz™) with an external diameter 1.1 or 1.3 mm, a micro camera and video system.

All sialendoscopies started with location, catheterization and dilation of the salivary papilla with probes (Fig. 1). When papilla catheterization was achieved, the sialendoscope was introduced through the papila, while the salivary duct was irrigated with saline solution or distilled water to allow video screen visualization. Endoscopic findings were carefully studied and measured for a detailed description: