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ORIGINAL ARTICLE

Ophthalmic complications of endoscopic sinus surgery☆

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KEYWORDS
Endoscopic sinus surgery;
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Abstract
Introduction: The proximity of the paranasal sinuses to the orbit and its contents allows the occurence of injuries in both primary or revision surgery. The majority of orbital complications are minor. The major complications are seen in 0.01–2.25% and some of them can be serious, leading to permanent dysfunction.
Objective: The aim of this study was to determine the risk and type of ophthalmic complications among patients operated due to a chronic rhinosinusitis.
Methods: This is a retrospective study of 1658 patients who underwent endoscopic sinus surgery for chronic rhinosinusitis with or without polyps or mucocele. Surgeries were performed under general anesthesia in all cases and consisted of polyps' removal, followed by middle metal antrostomy, partial or complete ethmoidectomy, frontal recess surgery and sphenoid surgery if necessary. The ophthalmic complications were classified according to type, frequency and clinical findings.
Results: In our material 32.68% of the patients required revision surgery and only 10.1% had been previously operated in our Department. Overall complications occurred in 11 patients (0.66%). Minor complications were observed in 5 patients (0.3%) with the most frequent being periorbital ecchymosis with or without emphysema. Major complications were observed in one patient (0.06%) and were related to a lacrimal duct injury. Severe complications occurred in 5 cases (0.3%), with 2 cases and referred to a retroorbital hematoma, optic nerve injury (2 cases) and one case of extraocular muscle injury.

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Conclusions: Orbital complications of endoscopic nasal surgery are rare. The incidence of serious complications, causing permanent disabilities is less than 0.3%. The most important parameters responsible for complications are extension of the disease, previous endoscopic surgery and coexisting anticoagulant treatment.

PALAVRAS CHAVE
Cirurgia endoscópica do seio nasal;
Orbital/ocular;
Rinossinusite crônica

Complicações oftálmicas da cirurgia endoscópica dos seios nasais

Resumo
Introdução: A proximidade dos seios paranasais à órbita e seu conteúdo tornam possível a ocorrência de lesões tanto na cirurgia primária como na de revisão. A maioria das complicações orbitais são menores. As maiores são observadas em 0,01%-2,25% e algumas delas podem ser graves levando a disfunção permanente.
Objetivo: O objetivo deste estudo foi identificar o risco e o tipo de complicações oftalmológicas em pacientes operados devido a rinossinusite crônica.
Método: Foi realizado um estudo retrospectivo de 1.658 pacientes submetidos a cirurgia endoscópica sinusal devido a rinossinusite crônica com ou sem pólipos ou mucocele. As cirurgias foram realizadas sob anestesia geral em todos os casos e consistiram de remoção de pólipos, seguida de antrostomia meatal média ou etmoidectomia parcial ou completa, cirurgia de recesso frontal e cirurgia de esfenoide se necessário. As complicações oftalmológicas foram classificadas de acordo com o tipo, frequência e achados clínicos.
Resultados: Em nosso material 32,68% dos pacientes necessitaram de cirurgia de revisão e apenas 10,1% haviam sido anteriormente operados em nosso departamento. As complicações gerais ocorreram em 11 pacientes (0,66%). Complicações menores foram observadas em 5 pacientes (0,3%), sendo que a mais frequente foi equimose periorbital com ou sem enfisema. Complicações maiores foram observadas em um paciente (0,06%) e atribuída à lesão do ducto lacrimal. Complicações graves ocorreram em 5 casos (0,3%) e foram referidas como hematoma retrorbital (2 casos), lesão do nervo óptico (2 casos) e um caso de lesão muscular extraocular.
Conclusões: As complicações orbitais da cirurgia endoscópica nasal são raras. A incidência de complicações graves que causam incapacidade permanente é de menos de 0,3%. Os parâmetros mais importantes responsáveis por complicações são extensão da doença, cirurgia endoscópica anterior e tratamento anticoagulante coexistente.

Introduction

Functional Endoscopic Sinus Surgery (FESS) is the most appropriate surgical procedure for sinus pathology treatment. Over the last decade the procedure developed to relatively safe.[1–4] The overall incidence of minor and major complication after FESS is range from 0.4% to 30%.[1,2,5,6] The anatomy proximity of the paranasal sinuses to the orbits exposes it is to the risk of trauma.[2,6] The majority of orbital complications are minor ones (3.9–20.24%). The major complications are seen in 0.01–2.25%, but some of them could be serious, leading to permanent dysfunction.[1,2,5–8]

The ophthalmic complications could be classified as: minor (grade I) included injury to the lamina papyracea, major (grade II) injury to the lacrimal duct and finally serious (grade III) as retroorbital hemorrhage, injury to the optic nerve or any reduction of vision or blindness and injury of orbital muscle.[1,6,9,10] As the minor and major ophthalmic complications are normally without any permanent disabilities the serious ones are potentially harmful.[1,2,5,6]

To reduce or eliminate the incidence of ophthalmic complications the precise preoperative Computer Tomography (CT), Magnetic Resonance Imagine (MRI), utilization of the Lund–MacKay Index and novel technique are recommended. The even more important thing is training and learning curves experience in FESS surgery.[1,2,11,12]

We analyzed 1658 patients who underwent endoscopic surgery due to inflammatory disease of the paranasal sinuses at our Department over 9 years from 2005 to 2013. The ophthalmic complications were matched with type, frequency and clinical findings.

Methods

We performed a retrospective study of 1658 patients who underwent FESS for Chronic Rhinosinusitis (CRS) from 2005