Short communication

Silent sinus syndrome. Clinical case☆

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Abstract

Clinical case: A 53-year-old man presented with a progressive enophthalmos without any sinus or nasal symptoms. There was no history of a trauma. The ophthalmology examination showed enophthalmos and hypoglobus. The computerized tomography (CT) showed a collapsed maxillary and frontal sinus and a laterally nasal tabique desviation that led us to the diagnosis.

Discussion: The clinical features of silent sinus syndrome are described, as well as the need to distinguish it from maxillary sinusitis.

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Síndrome del seno silente. Caso clínico

Resumen

Caso clínico: Varón de 53 años que acude a la consulta por enoftalmos en ojo derecho (OD) progresivo sin sintomatología asociada. Ausencia de antecedente traumático. En la exploración se observa un enoftalmos y leve desplazamiento inferior del globo derecho. En el TC se aprecia una ocupación total del antro maxilar derecho y del seno frontal así como una desviación del tabique nasal hacia la derecha, lo que confirma el diagnóstico de síndrome del seno silente.

Discusión: Se comentan las características más importantes del síndrome del seno silente, una enfermedad poco conocida que no debe confundirse con la sinusitis maxilar.

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Introduction

Patient diagnosed with silent sinus syndrome in the authors’ practice.

Clinic case

Male, 53, without relevant history, who visited the practice due to “sunken right eye” feeling with several months evolution.


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Complete ophthalmological exploration was performed which gave a visual acuity of 0.9 in the right eye and 1 in the left eye. Exophthalmometry was 13 mm in the right eye and 16 mm in the left eye. Increased upper palpebral sulcus was observed in the right eye, with upper palpebral retraction and upper eyelid retraction in downward gaze (Figs. 1 and 2). Exploration also revealed enophthalmos and slight lower displacement of said globe (Fig. 3). The rest of the exploration gave normal results.

CT was performed showing right maxillary antrum and frontal sinus totally occupied as well as partial occupation of anterior right ethmoidal cells with right deviation of nasal septum (Fig. 4).

Silent sinus syndrome was diagnosed and the patient was referred to maxillofacial surgery service where it was decided to defer surgery.

Discussion

The silent sinus syndrome is a little known clinical entity, described as the progressive development of painless facial asymmetry, enophthalmos and hypoglobus secondary to the occupation and chronic atelectasis of the maxillary sinus without nasal or sinus symptoms.

In 1964, Montgomery published the first case of maxillary sinus opacification and collapse causing enophthalmos. However, the silent sinus syndrome was first described by Soparkar et al. in 1994.1

The pathogenesis of the syndrome is uncertain. According to the current hypotheses, the silent sinus syndrome is caused by maxillary sinus hypoventilation due to the obstruction of the osteo-meatal complex. Progressive gas reabsorption produces negative pressure with subsequent bone remodeling consisting in sinus volume retraction and reduction.2

This physiopathology is shared by patients with chronic maxillary atelectasis and with silent sinus syndrome. However, the ostial occlusion mode is different. Patients with occlusion due to inflammation and symptomatic rhinosinusitis will be diagnosed with maxillary atelectasis. However, patients with hyper-mobile medial infundibulum wall and without significant nasal sinus symptom history will be related to the silent sinus syndrome.1,3

Fig. 1 – Upper palpebral retraction of the right eye.

Fig. 2 – Upper palpebral delay of the right eye in downward gaze and sinking of upper palpebral sulcus.

Fig. 3 – Right side enophthalmos, slight lower displacement and fascial asymmetry.

Fig. 4 – Orbit computerized tomography, showing collapsed right and frontal maxillary sinus and partial occupation of right ethmoidal cells. Nasal septum deviated to the right.
The changes described above occur in the course of weeks or months. The initial symptom is progressive enophthalmos as a consequence of chronic and progressive maxillary sinus atelectasis. It generally appears between the third and fifth decade of life, without significant differences between sexes.\textsuperscript{4}

Clinically, it courses with enophthalmos (spontaneous, with several weeks or months of evolution) and hypoglobus. The presentation symptoms are varied and include orbital asymmetry, sinking of the upper palpebral orbital sulcus, palpebral retraction and palpebral delay in downward gaze. Typically, visual acuity is preserved. Diplopia due to globe displacement vis-à-vis the orbit is infrequent.

The above clinical signs are not pathognomic and differential diagnostic must be carried out with chronic sinusitis, osteomyelitis, malign infiltration, orbit traumatism, Wegener granulomatosis and systemic disease (scleroderma).\textsuperscript{1}

Even though the suspicion is clinical, diagnosis is achieved by means of radiology. CT is the reference test, the most characteristic finding being internal retraction of sinus walls. The infundibulum is invariably occupied and the maxillary sinus opacified. The ocular globe and orbit contents are caudally displaced due to orbit floor depression.\textsuperscript{2}

Treatment is divided in nasosinusal and orbitary. The former includes correcting ostial occlusion and effective evacuation decompression. The treatment can be applied by means of nasosinusal endoscopic surgery with uncinectomy and maxillary antrostomy or with a Cadwell-Luc approach. In patients with significant diplopia or aesthetic deformity, surgical reconstruction of the orbitary floor is performed by means of subperistium graft, which can be carried out at the same time or after nasosinus surgery.\textsuperscript{3}

\section*{Conflict of interests}

No conflict of interests has been declared by the authors.

\section*{References}