Acta Otorrinolaringol Esp. 2009;**60(1):**67-9

Acta Otorrinolaringológica Española

www.elsevier.es/otorrino

CLINICAL REPORT

Mucocele by postraumatic orbitary herniation

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Received October 29, 2007; accepted September 17, 2008

KEYWORDS
Mucocele;
Frontal sinus;
Ethmoidal sinus;
Endoscopic surgery;
Paranasal sinuses

Abstract
Sinusal mucoceles are expansive lesions related to ostium sinus obstruction and treatment is surgical. We present a case of frontal mucocele secondary to ostium drainage obstruction due to herniated orbital content. This entailed difficulties for intranasal surgical resolution so a combined approach was used. The different surgical options for treating such cases are discussed.

PALABRAS CLAVE
Mucocele;
Seno frontal;
Seno etmoidal;
Cirugía endoscópica;
Senos paranasales

Mucocele por herniación orbitaria postraumática

Resumen
Los mucoceles de senos paranasales son lesiones expansivas relacionadas con la obstrucción del ostium sinusal, cuyo tratamiento es quirúrgico. Presentamos un caso de un mucocele frontal secundario a una obstrucción del ostium de drenaje por contenido orbitario herniado. Este hecho conllevó dificultad para la resolución quirúrgica endonasal, por lo que se optó por una vía combinada. Para tratar este tipo de casos, se analizan las diferentes opciones quirúrgicas.

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Clinical report

A 50-year-old male came to the clinic due to a self-limited bout of left supraorbital oedema with diplopia and the sensation that the eyeball was being pushed out of its socket, lasting for the previous 2 months. He did not present any other otorhinolaryngological symptoms. The patient reported having suffered a blow to the left eye socket 20 years previously.

During the physical examination, no supraorbital swelling or proptosis was observed and the nasal endoscopy was normal. Moderate limitation and diplopia with the gaze to the left were observed. Transillumination of the left frontal sinus revealed partial opacification.

In the computerized tomography (CT), occupation was observed in the frontal sinus and the left agger nasi territory, with thinning of its walls, particularly those limiting the roof and internal upper wall of the socket, indicative of frontoethmoidal mucocele. In addition, he presented dehiscence of the lamina papyracea with external herniation of the orbital fat, and minimally of the inner rectus muscles, without fixation (Figure 1). The magnetic resonance image (MRI) taken revealed left frontoethmoidal occupation compatible with mucocele with protrusion of the eyeball.

Surgery began with intranasal treatment. An attempt was made to channel the ostium but it was not possible due to the sclerosis present in the area of the infundibulum; it was also hindered by the prolapse of the contents of the eye socket. It was decided to conduct an external treatment through a subciliary incision. The sac of the mucocele was isolated and drained after deperiostization of the superciliary arch. Next, it was communicated with the contralateral frontal sinus through the sacrifice of the interfrontal wall. The left frontal sinus was channeled externally and a silicone tube was left attached to the anterior septum for 6 weeks.

The patient had an unremarkable post-operative course and presented mild residual diplopia at out-patient follow-ups.

Discussion

Mucoceles in the paranasal sinuses are expansive pseudocystic lesions giving rise to a dynamic process of bone erosion-resorption.[1] Their widely discussed aetiopathogeny seems to be related to the obstruction of the sinusal ostium and the inflammation of the sinus.[2] Various studies have indicated sinusal obstruction lasting several years as the key point in the genesis of mucoceles.[3] Their most frequent location is frontoethmoidal, leading to involvement of the eyes and nose, depending on the course of the condition.[4] Their diagnosis is based clinical presentation, examination, and a CT of the sinuses.

Surgery is the treatment of choice for this condition. Its goal is to drain the mucocele and ventilate the sinus involved, so as to allow conservation of the external wall of the mucocele.[4] Whenever technically possible, intranasal treatment is applied. However, there is general acceptance of a series of relative contraindications, such as the presence of any endosinusal involvement preventing drainage of the ostium (eg, osteoma), the onset of the mucocele in the most external and posterosuperior region of the sinus, and the presence of major sclerosis on the floor of the sinus.

In our patient, we found the presence of herniation of the orbital fat obstructing the ostium and sclerosis of the ostium. This created a great risk of emergence into the orbit through the intranasal route.

In cases where intranasal treatment presents difficulties, it is possible to use an external route[5] or a combined approach with external treatment under endoscopic control. Another option is for intranasal treatments with milling of the floor of the frontal sinus, as systematized by Weber et al.[6] In our case, types I and II of Draf treatments presented the same problem as conventional endoscopic surgery, due to the obstructive component of the herniation. Type III Draf treatment allowed the lesion to be reached, although this is a technically difficult treatment that cannot be performed on all types of frontal sinuses[6] and is quite aggressive in the intranasal area. It was not considered appropriate in our patient.

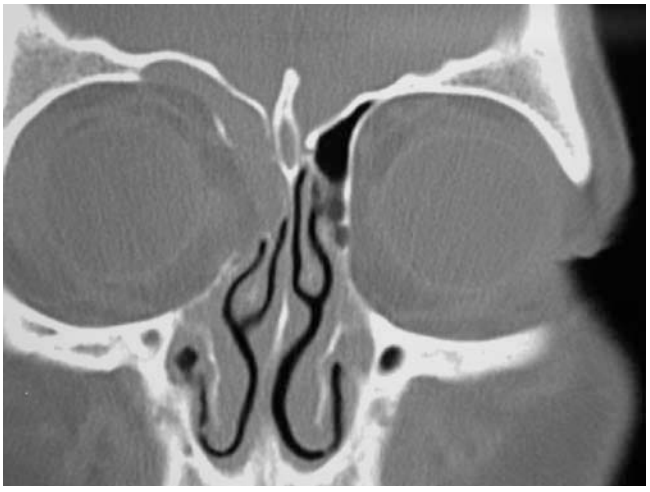

Figure 1 Coronal computerized tomography showing opacification of the left frontal sinus, dehiscence of the lamina papyracea, with herniation of the orbital contents

Figure 2 Endoscopic image of the frontal ostium 6 months after surgery.

In the case reported, an external route was indicated through an ipsilateral subciliary incision, combined with endoscopic treatment. Through this option it was possible to stay away from the orbit thanks to superior visual monitoring and the location of the lamina papyracea and fatty herniation. As well as treating the mucocele, the interfrontal wall was eliminated to facilitate draining of the sinus and a silicone tube or stent was placed through the ipsilateral ostium. This latter act is only possible through this aproach. Some authors advise against the placement of a stent due to the possible onset of a decubitus lesion on the periphery of the tube, potentially triggering a retractile scar that would lead to re-stenosis of the ostium.[7] In our experience, it seems a safe and effective option to maintain patency of the frontal sinus's drainage.[8] It was removed 6 weeks later without indications of re-stenosis in subsequent follow-up, and optimal opening of the recess was observed after 6 months (Figure 2). The main disadvantages of this technique are the aesthetic defects that may appear following destruction of the anterior diploë of the frontal sinus, as well as the scar.

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