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Original article

Clinical and surgical evaluation of patients with mucocele in the Conde de Valenciana Ophthalmology Institute[☆]

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ABSTRACT

Purpose: Mucoceles are cystic lesions, resulting from an obstruction in the paranasal sinuses and an accumulation of mucus, causing enlargement of the affected paranasal sinus. The signs and symptoms depend on the affected sinus. Treatment consists of surgical resection. The purpose of this study was to describe the clinical presentation of patients with mucocele, and also to describe the surgical results with our mucocele resection in patients treated in our institution over the last 10 years.

Methods: All patients with a diagnosis of mucocele over the last 10 years and treated in our institution were included. An analysis was performed on the symptoms, surgical technique, and results.

Results: Frontoethmoidal sinus mucoceles were most common. Both eyes were affected but with no significant statistical differences. The median age at presentation was 52 years old, with no difference between both genders. The time to seek medical attention was shorter in frontal mucoceles. Proptosis was the most common symptom. Complications during surgery were reported in just one patient. Recurrence was reported in 12% of patients. **Discussion:** Our results correlate with those in the literature. We reported satisfying results with our technique, avoiding sinus obliterations, with a recurrence of 12% versus 6% reported in previous studies. We believe that our technique is safe and accessible for ophthalmologists in mucoceles treatment.

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Evaluación clínica y quirúrgica de pacientes con diagnóstico de mucocele en el Instituto de Oftalmología Fundación Conde de Valenciana

RESUMEN

Objetivo: Los mucoceles constituyen lesiones quísticas como resultado de una obstrucción de los senos paranasales, con el subsecuente acúmulo de secreción mucoide que conlleva un aumento de volumen en el seno paranasal, manifestándose con diversos síntomas según el

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seno afectado. El manejo es quirúrgico. El objetivo de este trabajo fue realizar una descripción clínica de los pacientes con diagnóstico de mucocoele, así como reportar resultados posquirúrgicos mediante nuestra técnica de resección de mucocoele, en pacientes operados en el Instituto de Oftalmología Fundación Conde de Valenciana, en los últimos 10 años.

Métodos: Se incluyeron pacientes con diagnóstico de mucocoele tratados en nuestra institución en los últimos 10 años.

Resultados: Los mucocoeles más frecuentes se presentaron en el seno frontoetmoidal. Ambos ojos se afectaron por igual. La edad de presentación promedio fue de 52 años, sin diferencia estadísticamente significativa entre hombres y mujeres. El tiempo de evolución antes del diagnóstico fue más corto en mucocoeles frontales. El síntoma más común fue proptosis. Solo se presentó una complicación transquirúrgica en un paciente. Se presentó recidiva con nuestra técnica quirúrgica en 12% de los pacientes.

Discusión: Nuestros resultados correlacionan con lo descrito en la literatura. Obtuvimos buenos resultados con nuestra técnica quirúrgica sin obliterar el seno paranasal, con una recidiva de 12% comparado con 6% descrito en la literatura. Proponemos que esta técnica es accesible para los cirujanos oftalmólogos, con pocas complicaciones en manos expertas y con buenos resultados.

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Introduction

Mucocoele comprises cystic lesions developed as the result of paranasal sinus obstructions due to trauma, previous surgery, inflammation, tumors or idiopathic or iatrogenic causes which produce an entrapment of the fluid secreted by the ciliated pseudo-stratified column epithelium of which the paranasal sinus is made up, in usually airy spaces. This process leads to increased pressure due to sinus edema and expansion with subsequent bone wall thinning and bone remodeling and reabsorption, which could allow the expansion of mucocoele to the orbit, the nasopharynx area or the cranial cavity.¹

Mucocoele accounts for between 4 and 8.5% of all orbital lesions. It can involve all the paranasal sinus even though the most commonly affected area are the frontal and ethmoidal sinus which account for up to 90% of cases.²

Mucocoele can arise at any age even though they are more frequent in between the fourth and seventh decade of life. They affect both sexes but are more common in females.³

The symptoms and signs of mucocoele include volume increases, proptosis, ocular motility alterations, diminished vision, orbital pain, refractive changes, choroidal folds, diplopia and headaches. In the case of maxillary sinus mucocoele, ocular globe enophthalmos and ptosis have been reported.^{4,5}

The definitive diagnostic is reached through imaging studies. Ultrasound, conventional X-rays, computerized tomography and magnetic resonance constitute gold standards for said diagnostic.³

Mucocoele management requires releasing the obstruction of the paranasal sinus and reestablishing normal drainage. Some techniques involve obliteration of the sinus mucosa. Approaches are usually endoscopic or external and occasionally transcranial approach is necessary.⁶⁻⁸

When applying the external technique, after the mucocoele is drained and the paranasal sinus is defunctionalized, there are 2 currents of thought⁹: one in which the sinus is

obliterated with various materials and another in which the sinus is left empty to enable spontaneous osteogenesis for the sinus to obliterate itself. The use of materials in the paranasal sinus has been associated with more reports of infection and relapse.^{10,11}

In our institution the open technique has been applied for resecting mucocoele, defunctionalizing the sinus and leaving it empty without obliteration. In general, good results have been obtained with this technique. However, there is no study reviewing the follow-up of operated patients to assess post-surgery results.

The objective of our work consisted in making a clinical description of patients diagnosed with mucocoele as well as reporting post-surgery results of our mucocoele resection technique in patients operated in the Conde de Valenciana Ophthalmology Institute Foundation in the past 10 years.

Materials and methods

A series of cases of patients diagnosed with mucocoele treated in our institution by means of surgery from 2001 to 2011 in the Orbit, Eyelids and Lacrimal Pathway Department at the Conde de Valenciana Ophthalmology Institute Foundation.

Collected data included age, involved paranasal sinus, evolution time, involved eye, symptoms at presentation, management, complications and relapse if any.

The surgical technique was identical for all patients and consisted in anterior orbitotomy approach in most cases through the sulcus and in others under the brow, medially, with dissection to the upper orbital edge until the lesion was found and opened. The mucosa content of the sinus and within the sinus was sucked (mostly in the frontal sinus) withdrawing the entire mucosa in order to defunctionalize it, that is, scraping the mucosa in order to remove it, subsequently irrigating the cavity with saline solution and creating a fistula from the sinus to the nasal cavity

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