Short communication

Orbital abscess after peribulbar anesthesia in a frontoethmoidal mucocele

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ABSTRACT
Clinic case: Peribulbar anesthesia is used in daily practice during cataract surgery. It is a safe technique, but not without complications. We present the case of a man who had an orbital abscess secondary to peribulbar anesthesia that led to the perforation of an unknown frontoethmoidal mucocele.

Discussion: Orbital abscess secondary to an iatrogenic mucocele perforation after anesthesia is a peribulbar complication not described. The detection of the orbital process, intensive medical treatment and monitoring for signs of deterioration are vital in preventing serious complications.

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Absceso orbitario tras anestesia peribulbar en mucocele frontoetmoidal

RESUMEN

Caso clínico: La anestesia peribulbar es una técnica habitual durante la cirugía de cataratas. Es una técnica segura pero no exenta de complicaciones. Se presenta el caso de un varón que desarrolló un absceso orbitario tras una anestesia peribulbar que produjo la perforación de un mucocele frontoetmoidal no conocido.

Discusión: El absceso orbitario secundario a la perforación iatrogénica de un mucocele tras una anestesia peribulbar es una complicación hasta ahora no descrita. El diagnóstico precoz del proceso orbitario, el tratamiento médico intensivo y la monitorización de los signos de deterioro son vitales para la prevención de complicaciones serias.

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Introduction

Peribulbar anesthesia is applied in daily cataract surgery practice. It is based on the concept of diffusion of local anesthetics produced by the absence of impervious barriers between intra- and extra-muscular compartments in orbit quadrants. The usual practice is a first injection with 3–5 ml of a mixture of local anesthetics (2% lidocaine, 2% mepivacaine or 0.5% bupivacaine) and hyaluronidase, inserting a 27 G needle (24 mm) full length through the palpebral skin above the inferior orbit edge at the union of the external third with the 2 medial thirds. Subsequently a second injection of the same volume is administered at the superonasal quadrant below the superior orbit edge at the union of the internal third with the 2 external thirds. The needle must be parallel to the orbit roof and floor until it reaches the equator, where it must be aimed at the orbit vertex. This technique, which achieves ocular globe anesthesia and akinesia is not free of complications, the most frequent being chemosis, hypophagia and periorbital hematoma. Less frequent complications include retrobulbar hematoma, ocular hypertension, diplopia, strabismus, ptosis, ocular globe perforation, central artery occlusions and cardiac arrest.  

A male patient who suffered orbital abscess secondary to peribulbar anesthesia after cataract surgery is presented, involving perforation of an unidentified frontoethmoidal mucocele.

Clinic case

Male, 83 years, who attended the emergency service due to intense periocular pain and left periorbital edema 48 h after cataract surgery with peribulbar anesthesia. Upon exploration the patient exhibited a hot tumor indurated in the superonasal quadrant which caused slight proptosis (Fig. 1). The patient had no fever, visual acuity was finger counting at 50 cm and exhibited limitation in supraduction. Pupil reflexes were not assessable. The anterior pole exhibited intense chemosis, moderate corneal edema, negative Tyndall, intraocular lens adequately positioned and IOP of 18 mmHg. CAT was requested, enabling the identification of chronic frontoethmoidal mucocele which eroded the anterior side of the frontal sinus and orbit roof, invading the orbits and displacing the ocular globe downwards and outwards (Fig. 2). Intravenous treatment was established with 1 g/6 h ceftriaxon, 600 mg/8 h clindamycin, 60 mg/24 h prednisone, 40 mg/24 h omeprazol and 1 g/8 h paracetamol. In addition, hemogram was requested which identified leukocytosis of $11.7 \times 10^9$/ml with deviation to the left (76% neutrophiles). After 72 hours without the patient responding to medical treatment, drainage of the left frontoethmoidal mucopoecele was performed together with intranasal bilateral maxillary antrostomy and left frontal osteoplasty. The microbiological study of the exudate isolated Streptococcus constellatus, a species belonging to the Streptococcus milleri group, characterized by the formation of abscesses in various types of tissue.

After one week of evolution, appearance was excellent and the superonasal quadrant mass had disappeared (Fig. 3), corrected visual acuity was of 0.7, anterior pole and ocular fundus (which were not visible in previous explorations) were normal.

Discussion

The literature has no description of orbital abscess due to peribulbar anesthesia or jointly with iatrogenic rupture of a frontoethmoidal mucocele. However, there are descriptions of orbital cellulite after local anesthesia, specifically subtenon and periorcular. The patient of this case exhibited a longstanding frontoethmoidal mucocele which was not detected in the presurgery exploration and produced the iatrogenic perforation. Frontoethmoidal mucocele can go unnoticed in early stages as they course with headache and nasal secretion, both symptoms attributable to multiple processes. In advanced stages, proptosis leads to diagnostic imaging test.
In the presence of an orbitary abscess the initial treatment is medical, based on antibiotics covering the most frequent germs (Haemophilus influenzae, Streptococcus pneumoniae, coagulase positive Staphylococcus, Moraxella catarrhalis) as well as anaerobic germs, corticoids and antihistaminics. With the appearance of afferent pupil defect and/or loss of vision, persistent fever after 36 h of intravenous antibiotic treatment, clinic deterioration or absence of improvement after 48 h of treatment, abscesses must be drained.\(^4\) Orbit abscess secondary to mucocele iatrogenic perforation after periorbitary anesthesia is an unusual and undescribed complication of this generally safe technique. Orbitary process detection, intensive medical treatment and close monitoring of deterioration signs are essential to avoid severe complications such as loss of vision, meningoencephalitis, brain abscesses and venous sinus thrombosis which could compromise the life of a patient.

**Conflict of interests**

No conflict of interests has been declared by the authors.

**REFERENCES**


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**Fig. 3 – Process resolution one week after surgery.**