Medial Rectus Epithelial Inclusion Cyst after Strabismus Surgery and Review of the Literature

Case Report

A 33 year-old woman was admitted to the Department of Ophthalmology of the Beijing Tongren Hospital, Capital Medical University in Beijing, People’s Republic of China, with a mass next to her nose that had occurred after a left medial rectus muscle strabismus diorthosis in 2007 and had lasted for 9 months. Ophthalmoscopy of the left eye revealed a purple-hued cystic mass under the nasal conjunctiva extending to the orbit with clear verge and slight congestion. Postoperative histopathological assessment revealed the presence of a medial rectus epithelial inclusion cyst.

Conclusion: Strabismus surgery can cause extraocular muscle epithelial inclusion cyst; meanwhile, early excision is the most reliable treatment.

Keywords: Epithelial inclusion cyst; Strabismus surgery

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Discussion

The incidence of secondary cyst is low, and sub-conjunctival epithelial inclusion cysts complicating eye surgery are comparatively higher, reaching about 0.25% [1]. Extraocular muscle epithelial inclusion cysts can occur after several months to years of strabismus surgery; 52 years is the longest time frame recorded so far [2]. It usually presents a pink or purple-hued cystic mass under the conjunctiva and early excision is the most reliable treatment.
Sub-conjunctival epithelial inclusion cysts can happen after ocular trauma, cataract operations, pterygium resections, etc. [4]. The differential diagnosis of a cystic mass in the orbit includes dermoid cyst, lymphangioma, inflammatory cyst, and parasitic cyst [5,6]. Dermoid cysts and lymphangiomas are mostly congenital lesions with slow growth and no surgery or trauma history. However, parasitic cysts often have regional characteristics.

Imaging can provide important clues for the diagnosis of this lesion. Scanning of the mass can show the lesion properties and range, and provide the relationships between lesions and the surrounding tissues. Gross appearance of our patient showed the mass located in sub-conjunctival was not large, but imaging examination revealed a wide range. Orbital MRI revealed the involvement of tendons and muscle belly of left medial rectus in long T1-weighted images (WI) and T2WI signal without enhancement. Orbital CT showed a long strip cystic lesion within the left medial rectus area, 15 × 15 × 14 mm; a Hounsfield unit value of 5 to 20 was obtained.

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Many forms of treatments have been described for this disease, including laser photo-ablation, thermal cautery, isopropyl
alcohol injection and surgical resection. However, surgical resection remains the most effective and safe method to remove conjunctival cysts. Non-surgical treatments are usually reserved for clearly diagnosed cysts with smaller diameter, good exposure and no overt adhesion of the surrounding tissues. Laser photocoagulation requires multiple treatment and pigmentation; in thermal cautery, more attention should be paid to the protection of the surrounding tissue [7]. Isopropyl alcohol injection is mainly suitable for small and superficial cysts; in addition, doctors must have considerable experience to ensure the integrity of cysts. Only surgical methods can repair the large secondary incomitant strabismus associated with many giant conjunctival cysts and definite pathological diagnosis. Extraocular muscles traction lines are important. If the cyst forms between the muscle and sclera, the two might be detached from each other, leading to the formation of a pseudo-tendon between sclera and muscle. Removing the cyst will lead to loss of the rectus muscle inside the orbit. Therefore, our patient decided that attempt should be made to excise the mass; the medial rectus was fixed by traction line during surgery. After surgical treatment, the patient regained normal eye appearance without diplopia and recurrence [8,9].
References


