Epibulbar Osseous Choristoma in the Lateral Rectus

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To the Editor: Osseous choristoma is the rarest type of the epibulbar choristomas. It is a form of benign congenital tumor first described by von Graefe as an epibulbar osteoma in 1863.[1] Most epibulbar osseous choristomas are found in the superotemporal region. They adhere generally to the episclera and the conjunctiva and might involve the muscle.[1,2] Previous report stated that females account for 69% of cases, the right eye for 76%, and superotemporal localization for 74% of cases.[3] According to PubMed-based research, 76 cases of epibulbar osseous choristoma were reported up to 2016. Here, we reported a rare case that localized in the left lateral rectus.

An 8-year-old girl was admitted to hospital with the chief complaint of a squint in the left eye. Her medical history was unremarkable, and visual acuity was 20/20 in both eyes. External examination of the anterior segment and fundus examination of both eyes were normal. Evaluation of muscle balance revealed an intermittent exotropia of 25 prism diopters, which was the same for distance (6 m) and near (1/3 m) in the alternate prism cover test. The right eye was the dominant eye. A diagnosis of basic exotropia was made, and the patient underwent lateral rectus recession of 7.5 mm from the muscle insertion on the left eye. During surgery under local anesthesia, we found a separate mass close to the muscle insertion attached tightly to the lateral rectus muscle, one end in the tenon fascia, one end on the surface of the sclera. The mass was approximately 5 mm × 2 mm × 1 mm in size, white, opaque, and hard in the lateral rectus but not in the conjunctiva and the underlying sclera. Through careful dissection, this lesion was separated from the lateral rectus muscle and excised totally [Figure 1a and 1b]. Histopathology revealed free osseous tissue and fibrous tissue. There was a well-defined lamellar bone and obvious bone lacuna in which individual bone cells could be seen [Figure 1c and 1d]. Postoperative examination was performed 1 day, 1 week, 1, 3, and 6 months, and 1 and 2 years after surgery. There was no subjective diplopia and no abnormalities in eye movements.

The exact pathogenesis of epibulbar osseous choristoma is controversial. The sclera and extraocular muscles are formed from condensations of the mesenchyme encircling the optic cup; osteoblasts are derived from mesenchymal stem cells. We speculate that osseous choristoma might be the result of abnormal development of the mesenchyme. A history of trauma and infection are factors that should also be considered.[3,4] There have been no reports of malignant degeneration intraocular extension. Furthermore, there is a debate regarding the growth of epibulbar osseous choristomas.

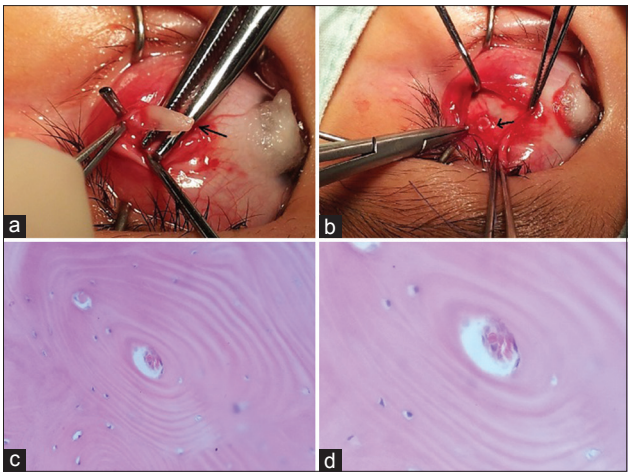

Figure 1: Clinical findings of the patient: The mass attached to the lateral rectus (a). Image of operation area after surgery just completed (b). Histopathological findings showed free osseous tissue and fibrous tissue (c and d). Haversian canals and lamellar bone surrounded by dense fibrous tissue (Hematoxylin and eosin,original magnification, c: ×400, d: ×600).

A diagnosis of osseous choristoma requires histopathology. Typically, lesions include Haversian canals and lamellar bone surrounded by dense fibrous tissue. Differential diagnosis includes age-related calcifications involving the insertion of the lateral rectus muscles, an extraocular retinoblastoma extension, or an intraorbital foreign body. Preoperative computed tomography examination is necessary and can be helpful for both diagnosis and operation design. Options for management include observation or surgical excision; indications for surgery include diagnosis, cosmesis, and irritation symptoms.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s)/patients' guardians has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients/patients' guardians understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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