Sudoriferous cyst of the orbit after scleral buckling

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ABSTRACT

A 36-year-old man presented with an orbital cyst in the left eye three years after retinal detachment surgery with scleral buckling. The cyst was in the anteromedial aspect of the orbit resulting in ptosis, elevated intraocular pressure (IOP) and limited ocular motility. The cyst was totally excised and ptosis was corrected by frontalis sling procedure. Histopathology of the specimen revealed a solitary cyst lined by cuboidal epithelial cells. Some epithelial cells contained Periodic acid-Schiff (PAS)-positive granules. Accordingly, the diagnosis was a sudoriferous cyst. Sudoriferous cyst of the orbit is rare and often congenital. This case report illustrates that orbital sudoriferous cyst can develop after scleral buckling.

Keywords: ptosis; scleral buckling; sudoriferous cyst

Orbital cysts can develop after ophthalmic surgery or trauma. Their formation is a potential complication of alloplastic implants used in orbital fracture repair [1]. Most orbital cysts associated with orbital fracture are lined with squamous or columnar respiratory epithelium which deposit into the orbit at the time of trauma or during ophthalmic surgery [1-2]. Epithelium-lined inclusion cysts of the orbit can also develop after scleral buckling [3], probably because of seeding of conjunctival squamous epithelial cells during surgery. Cysts derived from apocrine glands (sudoriferous cysts) are rare, and usually congenital. Only one case of orbital sudoriferous cyst in adult has been reported [4]; other reported cases were congenital in children [5-6]. We report an acquired sudoriferous cyst after scleral buckling.

CASE REPORT

A 36-year-old male patient with retinal detachment on superior nasal part in his left eye underwent uneventful scleral buckling procedure with an encircling 240 silicone band and a segmental 276 silicone tire at superior nasal quadrant. After operation, retina was well attached and no complications were noted. Until three years later, progressive pto-

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sis and limitation of ocular motility were found. On examination, best corrected visual acuity was 20/20 (right eye) and 20/30 (left eye). Elevated intraocular pressure (IOP) with 32mmHg was noted in the left eye. A firm and nontender mass could be palpated beneath the upper eyelid. In the superior nasal conjunctival fornix, there was a mass with overlying fibrotic conjunctiva resulting in symblepharon (Figure 1 A). Retina was attached and scleral buckling effect was noted by indirect ophthalmoscopy.

Magnetic resonance imaging revealed a fluid-filled orbital cystic tumor approximately 1.8 x 2.0cm in the anteromedial aspect of the left orbit (Figure 1 B). Surgical excision of the tumor was approached by transconjunctival anterior orbitotomy. At surgery, the cyst was adherent to the sclera severely, and extended into the superior portion of orbit beneath the upper eyelid. It was totally removed without remov-

Figure 1 A. A mass with overlying fibrotic conjunctiva was noted in the superior nasal fornix.

Figure 1 B. Magnetic resonance imaging demonstrating a cystic tumor in the anteromedial aspect of the left orbit. Eyeball deformity was due to sclera buckling effect.

Figure 2 A. Histopathology of the cyst wall (hematoxylin and eosin stain, magnification x 400). The cyst was lined by cuboidal epithelial cells.

Figure 2 B. Periodic acid-Schiff (PAS)-stained specimen of the cyst showing that epithelial cells contained PAS-positive granules.
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al of buckle. Histopathological findings revealed a solid cyst filled with clear fluid and lined by layers of cuboidal epithelial cells (Figure 2 A). Some epithelial cells contained periodic acid-Schiff (PAS)-positive granules (Figure 2 B). The pathologic diagnosis was a sudoriferous cyst. Because the orbital cyst was extended to the superior aspect of orbit, severe ptosis developed after surgery. Subsequent operation of frontalis sling with 3-0 Nylon was done one month later. Follow-up 3 months later, computed tomography scan showed no orbital mass (Figure 3). IOP decreased to 18mmHg.

**DISCUSSION**

Sudoriferous cysts are derived from the glands of Moll and commonly found on the eyelid margin. They are very rare in the orbit. Two congenital cases were reported in the 1970s [5-6]. Only one case of orbital sudoriferous cyst in an adult was published [4]. There was no history of inflammation disease, trauma, or surgery in that case. To our knowledge, no orbital sudoriferous cyst after scleral buckling has been reported. The histopathology of our case revealed that the cyst wall lined by cuboidal epithelial cells contained with PAS-positive granules. This suggested that this cyst was derived from the gland. Because no lacrimal tissue was found in the specimen, it unlikely originated from ectopic lacrimal gland. In addition, the multi-layered cuboidal epithelium is rare. Chronic inflammation and hyperplasia may be the causes that resulted in multi-layered cuboidal epithelium.

Orbital cysts are potential complications of implantation of silicone plates during orbital fracture repair [1], and they usually lined by squamous or respiratory columnar cells. Seeding of epithelial cells occurs during surgery involving conjunctival incision or after orbital trauma is a risk factor of orbital cysts. Epithelium-lined inclusion cysts after scleral buckling with silicone band have been reported; they may be associated with deposition of epithelial cells of conjunctiva and retraction of Tenon’s capsule at the time of scleral buckling [3]. For congenital sudoriferous cysts, it is hypothesized that sequestration at the embryonic stage of epithelial cells destined to form glands of Moll could lead to cyst formation in the orbit [7]. In our patient, the probable origin of the cyst is some superficial glandular tissue cells were implanted into deeper tissue layers at the time of scleral buckling and resulted in a tiny undetected cyst, which gradually enlarged over a period of time.

Because of the late complications of Miragel, silicone bands are widely used for scleral buckling at present. In addition to the complication of extrusion of silicone scleral buckle, although rare, orbital cysts can also develop after scleral buckling. In this case, sudoriferous cyst was diagnosed.

![Figure 3.](image-url) Computed tomography scan showing no orbital mass after operation.
from the histopathology of specimen, radiologic finding and clinical presentation. From our reports, sudoriferous cysts can develop after scleral buckling and should be included in the differential diagnosis for orbital cysts.

REFERENCES


鞏膜扣壓手術後發生之眼窩汗腺囊腫

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中文摘要

本篇病例報告為一位 36 歲男性病患左眼接受鞏膜扣壓手術以治療視網膜剝離，術後三年發生了眼窩囊腫，導致患者眼瞼下垂、眼壓上升以及眼球轉動受限。病患再次接受手術將眼窩囊腫摘除並矯正眼瞼下垂，組織病理報告顯示，此囊腫為立方上皮所組成，一些上皮細胞內含有 Periodic acid-Schiff 染色陽性的顆粒，根據此組織病理報告將此診斷為汗腺囊腫。眼窩汗腺囊腫之病例非常稀少而且多為先天性，作者在此提出一例於鞏膜扣壓手術後發生之眼窩汗腺囊腫。

關鍵字：眼瞼下垂；鞏膜扣壓手術；汗腺囊腫

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