

Case Report

Surgical correction of corneal dermoid in a dog

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A five-month-old female Shih-tzu puppy was presented for repair of congenital choristoma in left eye. The patient was suffered from chronic epiphora and ocular discharge during 3 months. On ophthalmic examination, left eye revealed hyperemia in conjunctiva of the temporal canthus due to choristoma with hair. At surgery, the choristoma invaded by stromal layer of the cornea, and extended to limbus and conjunctiva. Based on the anatomical location and histopathological features of the removed tissue, the choristoma was diagnosed as corneal dermoid.

Key words: choristoma, corneal dermoid, epiphora, hyperemia

Corneal dermoid is a congenital choristoma characterized by the presence of heterotopic cutaneous tissue in an inappropriate place [8,4]. They may affect the eyelids, conjunctiva (palpebral and bulbar), nictitating membrane, and cornea [3]. This condition is known to occur in large breed dogs such as St. Bernards [1-3, 7], German Shepherds [1], short-legged dogs [7] such as Basset Hounds, Dachshunds and Welsh Corgis and cats [5]. Dermoids contain many of the elements of normal skin such as epidermis, dermis, fat, sebaceous glands, hair follicles, and frequently there is hair. The tissues are usually irritating the eye and associated structures [3]. Thus, the patients have been suffered from chronic epiphora and keratitis. Dermoid may be surgically excised with complete remission of signs and minimal scarring of the cornea. This paper describes the incidence of corneal dermoid and detailed histopathological findings in shih-tzu dogs.

A 5-month-old female Shih-tzu puppy with a weight of 4.4 kg was referred to the Veterinary Medical Teaching Hospital of Chungnam National University for repair of congenital choristoma in left eye. The patient had suffered from chronic epiphora and some ocular discharge during 3 months. On ophthalmic examination, left eye revealed mild



Fig. 1. Gross appearance of dermoid involving the ventrolateral cornea and conjunctiva. The dermoid has grown with hair in the left eye of a 5-month-old Shih-tzu dog.

hyperemia in conjunctiva at the temporal canthus. Vital signs and results of blood examination were within normal ranges. A light peach color lesion measuring 3-5 mm in diameter was noted grossly at the limbus in the direction of 5 o'clock, and there was hair growing from the surface (Fig. 1). The surface of lesion was rough and slightly protruded compared with the surrounding normal cornea.

The patient was premedicated with atropine sulfate (0.04 mg/kg, SC). Anesthesia was induced with thiopental sodium (12.5 mg/kg, IV) and maintained with isoflurane. The patient was administered a balanced electrolyte solution (10 ml/kg/hr, IV), and cefazolin sodium (20 mg/kg, IV) as prophylactic treatment was administered before surgery. After fixation of the globe, abnormal tissue at the conjunctiva and cornea was removed using the blade (No. 11) and microsurgical instruments. The lesion invaded by stromal layer of the cornea, and extended to limbus and conjunctiva was surgically resected. And then, a pedicle conjunctival flap was placed to support the reepithelization and aid vascularization of the defect. Additionally, third-eyelid flap was also performed to facilitate healing. After surgery, eye drops as atropine sulfate, gentamicin sulfate, diclofenac sodium and systemic antibiotics were prescribed for 2 weeks. For histopathological evaluations, the tissue sample

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Fig. 2. At 2 weeks after surgery, gross appearance of surgical site.

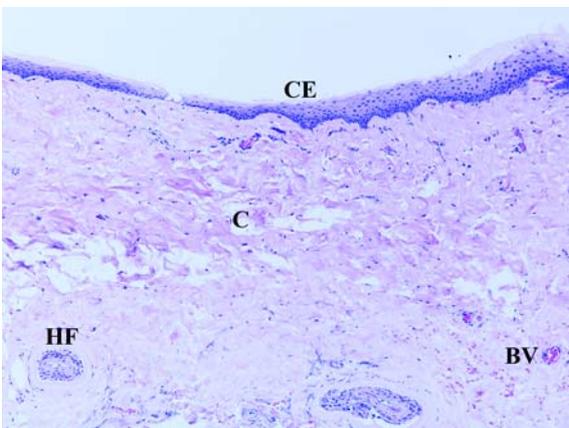


Fig. 3. Light microphotograph of dermoid from dog; corneal epithelium (CE), cornium (C), hair follicle (HF), blood vessel (BV), H&E, $\times 40$.

was collected to 10% neutral phosphate-buffered formalin, processed routinely, and stained with hematoxylin and eosin.

After 2 weeks, the third-eyelid flap was removed, and the region of conjunctival flap was epithelized and remained the scar (Fig. 2). The dermoid hasn't recurred for 11 months since the surgical correction, and hyperemia of conjunctiva and epiphora was disappeared.

Corneal dermoids are ectopic eyelid tissues. They are nearly always covered with hair. Although, hair may be removed by manual epilation or electroepilation, it may regrow. Corneal dermoid has been reported in various species of animals and in humans, and it is commonly

believed that this disease is generally congenital, although not hereditary [4]. However, some report in humans, the appearance of corneal dermoid across three generations of a single family has been reported by Mattos and his colleagues [6]. In this case, hereditary pattern was not revealed because parents were normal ocular structure.

Removal of dermoid by superficial keratectomy is essential to relieve the related clinical signs. If the dermoid has not been totally removed, some degree of recurrence can be expected [1]. Thus, the dermoid have to excise completely, if possible, without scarring of the cornea. Once corneal epithelization is complete, as evidenced by the lack of fluorescein retention, topical antibiotic-corticosteroid preparations can be administered to reduce postoperative corneal scarring and improve the eventual transparency of the cornea. Microscopically, it was presented the corneal dermoid invasive normal corneal epithelium, and the dermoid contain normal skin such as hair follicles, cornium and blood vessel (Fig. 3).

The operation of dermoid was delayed in this case due to owner's circumstances. Consequently, the lesion was increased in size and extended more invasively. Fortunately, dermoid was removed successfully and recurrence did not appear up to now.

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