Cilia incarnata

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Cilia incarnata (cilium incarnatum externum and cilium incarnatum internum) are rare anomalies (Duke-Elder, 1974) in which eyelashes are misdirected, growing underneath the skin either outwards or inwards in an abnormal direction. They correspond to the phenomenon of pili incarnati (ingrown hair) which is not uncommon in the beard or on the legs (Weninger, 1928). Of the few reports of cilia incarnata to be found in the literature, the last appeared in 1970 (Nagashima, 1970). Within the past two years, we have seen three cases of this condition.

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Case reports

CASE 1

A 35-year-old White man, who was undergoing a routine refraction, had a discoloured, misdirected eyelash running underneath the skin from the lid margin of the upper right eyelid. The hair was located 2 mm above the margin of the lid near the vertical midline. The visual acuity was normal, there were no symptoms, and there were no other abnormal findings. We made a diagnosis of cilium incarnatum externum (Fig. 1).

CASE 2

A 65-year-old Chinese man complained of pain and photophobia in the right eye that had begun with an attack of herpes zoster ophthalmicus nine months previously. He had been photophobic since the onset of the attack, but for the previous two months had had

FIG. 1 *Cilium incarnatum externum, upper lid*

FIG. 2 *Cilium incarnatum internum*, lower lid

more discomfort than formerly and some pain in the eye. Carbamazepine and di-phenylhydantoin had been used but had not relieved the symptoms.

On examination we found scars along the ophthalmic branch of the trigeminal nerve. The visual acuity with best correction was 20/20 in the right eye and 20/25 in the left. The left eye showed no abnormalities. There was mild papillary hypertrophy of the right palpebral conjunctiva, hyperaemia of the right bulbar conjunctiva, and a linear superficial keratitis in the right cornea. A few pigmented keratic precipitates were seen on the right cornea, and there was a 1+ cellular reaction in the anterior chamber. In the lower eyelid, 2 mm from the vertical midline on the nasal side, a misdirected eyelash curved inwards towards the conjunctival sac and penetrated the tissue. Terminating within the conjunctival sac, it was rubbing the cornea and producing the superficial linear keratitis.

We made a diagnosis of keratitis and conjunctivitis secondary to cilium incarnatum internum. When we attempted to epilate the lash mechanically, it broke off at the base. The patient became asymptomatic, however, and the keratitis and conjunctivitis disappeared.

CASE 3

A 60-year-old White woman complained of a foreign-

body sensation and unexplained redness of the left eye of one week's duration. Various medications had been used but had not relieved the symptoms.

On examination of the left eye, we found a moderate papillary hypertrophy and hyperaemia of the bulbar conjunctiva and a linear superficial keratitis inferiorly. The visual acuity with best correction was 20/20 in the right eye and 20/40 in the left. There was a misdirected lash on the lower left lid that gave the lid margin a raised, annular appearance. The lash arose 4 mm to the vertical midline and penetrated the tarsus 2 mm below the lid margin. The right eye was normal.

We made a diagnosis of cilium incarnatum internum and removed the lash by incising the skin near its base. The conjunctivitis and keratitis cleared promptly and the patient became asymptomatic (Fig. 2).

Discussion

'Cilium inversum' is the term sometimes applied to the type of cilia incarnata believed to be caused by the *congenital* misdirection of an otherwise normal lash follicle. Most cilia incarnata, however, especially in the adult, are thought to be due to the *mechanical* misdirection of either the lash follicles or the lashes themselves as a result of some other

abnormal lid condition (Bloch, 1947; Agarwala, 1963). The hair grows obliquely, travelling underneath the skin. If it grows outwards to the lid surface, it is called cilium incarnatum externum; if it grows inwards, which it does more rarely, it is called cilium incarnatum internum. When it grows inwards, the lash pierces the tarsus. This causes a foreign-body sensation since the terminal end of the lash moves freely in the conjunctival sac. When the lash grows outwards, it may cause a needle-like sensation when the area is rubbed (Sen, Mohan, and Gupta, 1969).

This condition probably occurs more frequently than the paucity of reports in the literature suggests; most cases are probably not noticed or are misdiagnosed, especially cilium incarnatum internum.

Summary

In connexion with three case reports of cilia incarnata (examples of both cilium incarnatum externum and cilium incarnatum internum), the aetiology and the signs and symptoms of this infrequently recognized anomaly are described.

References

- AGARWALA, H. S. (1963) *Amer. J. Ophthalm.*, **55**, 648
 BLOCH, F. J. (1947) *Arch. Ophthalm.*, **37**, 772
 DUKE-ELDER, S. (ed.) (1974) In 'System of Ophthalmology', vol. 13, p. 386. Mosby, St Louis
 NAGASHIMA, K. (1970) *Ophthalmology (Tokyo)*, **12**, 944
 SEN, D. K., MOHAN, H., and GUPTA, D. K. (1969) *Brit. J. Ophthalm.*, **53**, 207
 WENINGER, G. (1928) *Ann. Derm. Syph.*, **9**, 687 Referred to by S. Duke-Elder (ed) in 'System of Ophthalmology' vol. 13, p. 386. Mosby, St Louis