CASE REPORT

A FIRST RECORD FROM THAILAND OF HUMAN EXTERNAL OPHTHALMOMYIASIS DUE TO *OESTRUS OVIS*

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Abstract. A case of external ophthalmomyiasis caused by *Oestrus ovis* was first reported from Lopburi Province, Central part of Thailand, in January, 1997. A 18-year-old man presented with a several hours history of foreign body sensation in his left eye accompanied by irritation. Eight *Oestrus ovis* first-instar larvae were removed from lower palpebral conjunctiva. Symptoms and clinical signs resolved in 24 hours after mechanical removal of the larvae. There was no history of contact fly and domestic animals. The larvae were identified by light microscopic examination.

Larvae of the oestrid subfamily Oestrinae develop in the nasopharyngeal cavities and frontal sinuses of, mainly, perissodactylan and arctiodactylan mammal. Second and third larval instars are characterized by porous posterior spiracular plates and the adult flies by their rudimentary and non functional mouthparts. (Zumpt, 1965; Kettle, 1990). The genus *Oestrus* includes the almost cosmopolitan and well known sheep nasal botfly *Oestrus ovis*, Linnaeus. Humans are not normal host but occasionally infected eyes which such larvae never fully develop and causing ophthalmomymiasis externa (Urguhart *et al*, 1987; Amr *et al*, 1993). It has been reported from middle east (Amr *et al*, 1993; Helmi *et al*, 1971; Janbakhsh *et al*, 1977; Nabeel *et al*, 1978; Al-Dabagh *et al*, 1980; Harvey, 1986; Cameron *et al* 1991; Risco *et al*, 1995), Europe (Maretic *et al*, 1973; Le Fichoux *et al*, 1981; Wong, 1982; Repkeny, 1985; Grammer *et al*, 1995), Africa (Sergent, 1952; Dar *et al*, 1980; Healey *et al* 1980; Stulting *et al*, 1981), North America (Eifrig, 1969; Hennessy *et al*, 1977; Reingold *et al*, 1984) and Australia (McDermott and Schafer, 1983). All of the cases were reported from areas of sheep and goat farming communities. In Thailand, the shepherding area is very rare especially in the central part (Statistic Branch Planning Division, 1996). Here report the first Thai human case of ophthalmomyiasis externa by *O. ovis* larvae.

A 18-year-old man came to the emergency room of Lopburi Hospital, Lopburi Province, the central part of Thailand in January, 1997. He complained of foreign-body sensation in his left eye accompanied by irritation for several hours. He noted the onset of these symptoms in the morning during on the way to school and came to see doctor in the evening of the same day. He could not recall seeing any insect near his face or feeling any sting sensations. He had neither pet nor other domestic animal in his house and no sheep and goats in the surroundings. He denied visual impairment. There was no significant history of ocular or medical problems.

On examination, there was mild injection of left conjunctiva. One motile larva was visible on the inferior palpebral conjunctiva. Under topical anesthesia, the larva was removed with a fine forceps and noted to be slightly attached to the conjunctiva. After irrigation the eye with physiological saline, seven motile larvae, approximately 1 mm in length, were on the bulbar and palpebral conjunctiva and more easily removed. The right conjunctiva was uninjected and no organism was found. After removal of the larvae and administration of topical antibiotics, symptoms and clinical signs resolved within 24 hours.

Maggots removed from the patient's conjunctiva were dehydrated in a series of ethyl alcohol concentrations, clear in xylene and mounted permanently. Light microcopic examination identified the organisms as first stage larvae of *O. ovis* fly as comparison with standard entomologic texts. The removed larvae, translucent, and white in color, measured about 1.1 mm in length and 0.3 mm in width (Fig 1). Each consisted of an anterior end

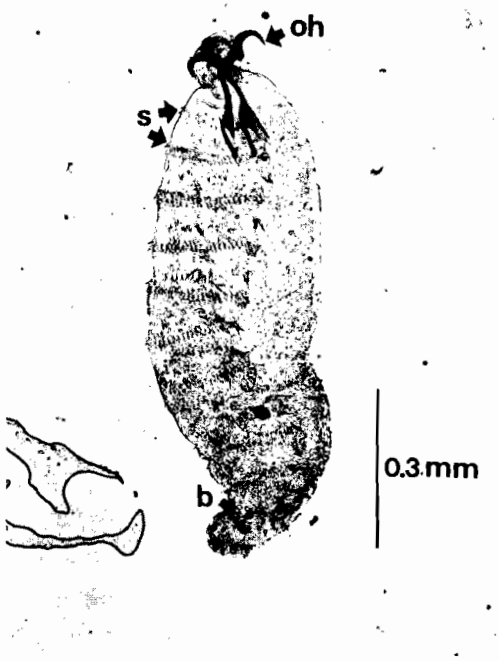

Fig 1–Lateral view of first-instar larva of *O. ovis* showing anterior oral hooks (oh), intersegmental spine bands (S), and terminal double bulges (b) in the caual segment.

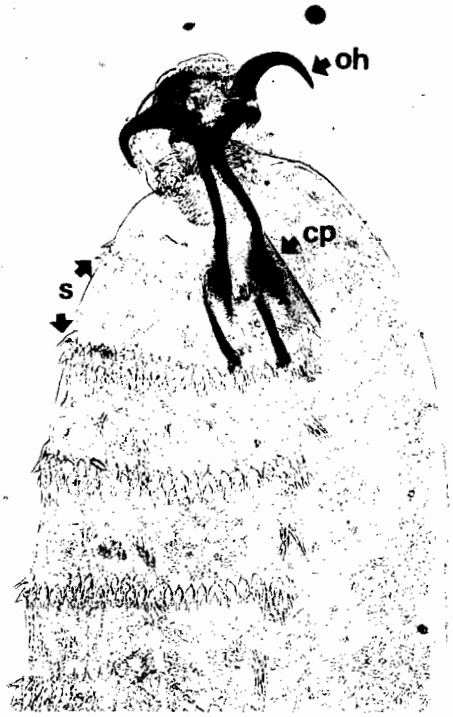

Fig 2–Magnification of the anterior part of *O. ovis* larva showing a pair of large oral hooks (oh) and their connection with the cephalopharyngeal skeleton (cp).

with a pair of large oral hooks, horn-like and dark-colored, connected to cephalopharyngeal skeleton (Fig 2). The remainder of the body was segmented, each having minute dark spines and arranged in intersegmental band (Fig 2). There were two major caudal tracheal trunks but no spiracular plate. The terminal end of the caudal segment showed two terminal bulges each carrying 12 hooklets (Fig 3).

The typical patient with conjunctival ophthalmomyiasis as a result of *O. ovis* larvae is one who has had a close association with sheep or goats. The viviparous females infect these animals by squirting a jet of liquid containing larvae at the nostrils during flight, up to 25 larvae being delivered at a time. The larvae complete their growth in the sinuses. The present case occurred in an area where sheep and goat farming is uncommon and was noted no history of relation to any animal. Data from the Department of Live Stock Development, Ministry of Agriculture and Co-operatives showed the total number of sheep and goats in Lopburi Province in 1996 were 665 and 287, respectively (Statistic Branch Planning Division, 1996). We have no data on oestrosis in animals but the present report raises the possibility of oestrosis in sheep and goats in Thailand especially in Lopburi Province where some villages have a few sheep and goats in houses owned by some muslim inhabitants. The infection may occur from the adult gravid females eject a jet of liquid in free flight without direct contact between fly and host on the way from the patient's house to school. Our case of ophtholmomyiasis caused by *O.ovis* had mild symptoms but the infection can cause intraocular involvement resulting severe conditions (Rakusin, 1970). Therefore, in sheep farming areas, *O. ovis* ophthalmomyiasis should be taken into consideration by general practitioners as well as ophthalmologists in Thailand.

Occurrence of infestation with *O. ovis* and other oestrid species exists with seasonal fluctuations and shows increased prevalence in Spring and early Summer (Amr *et al*, 1993; Perez *et al*, 1996). The present case occurred during the cool and mildly humid period, in January. Data on the occurrence

Fig 3–Magnification of the terminal end of caudal segment of *O. ovis* larva showing the tracheal trunks (t) and series of hooklets (hl) on the terminal double bulges.

of oestrids parasitizing sheep and goats in Thailand is relatively scarce, since these animals are not common here and most infections are light, therefore the farmers do not pay attention so much. More information is needed about the occurrence of *O. ovis* as a parasite, particularly those of the first-instar larvae in domestic sheep and goats.

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