

CASE REPORT

A case of naso-ophthalmic myiasis

Nazo-oftalmik miyazis: Olgu sunumu

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Myiasis is defined as an occupational disease and it is mainly seen in people who are in contact with animals, in particular sheep. We detected nasal and external ophthalmomyiasis caused by *Oestrus ovis* in a 33-year-old male who worked as a research assistant in the faculty of agriculture. The presenting complaints were severe foreign body sensation and discharge in the nose, cough, and foreign body sensation in the right eye. Ophthalmologic examination revealed many moving larvae in the right eye of the patient. Larvae were removed and nasolacrimal duct irrigation was performed through the inferior canaliculus. Endoscopic nasal examination also showed larvae colonies. The larvae were removed under local anesthesia and were taken to the parasitology laboratory, wherein *Oestrus ovis* was identified. Minimal endoscopic sinus surgery showed nonspecific chronic inflammation.

Key Words: Endophthalmitis; larva; myiasis/complications/parasitology; nose diseases/parasitology; sheep.

Miyazis meslek hastalığı olarak bilinir ve esas olarak, başta koyunlar olmak üzere hayvanlarla temas eden kişilerde görülür. Ziraat fakültesinde araştırma görevlisi olarak çalışan 33 yaşında erkek hastada, *Oestrus ovis* tipi parazitin neden olduğu nazal ve eksternal oftalmomyiasis saptandı. Hastanın yakınmaları, burunda şiddetli yabancı cisim hissi ve akıntı, öksürük ve sağ gözde yabancı cisim hissi idi. Göz muayenesinde hastanın sağ gözünde hareket eden çok sayıda larva görüldü. Bunlar temizlenerek, inferior kanalikulus yoluyla nazolakrimal kanal irigasyonu uygulandı. Endoskopik burun muayenesinde de larva kolonilerine rastlandı ve lokal anestezi altında temizlendi. Parazitoloji laboratuvarındaki incelemede, çıkarılan örneklerin *Oestrus ovis*'e ait olduğu saptandı. Daha sonra yapılan minimal endoskopik sinüs cerrahisinde nonspesifik kronik enflamasyon görüldü.

Anahtar Sözcükler: Endoftalmit; larva; miyazis/komplikasyon/parasitoloji; burun hastalıkları/parasitoloji; koyun.

Myiasis, the invasion of live mammalian tissue by larvae of dipteran flies to feed on the host's organs, body fluids, or ingested food, may be specific or accidental.^[1] It may be classified based on the site of involvement as cutaneous, subcutaneous and cavitary (nose, mouth, paranasal sinuses, ocular, vaginal, and anal). Although individuals at any age can be affected, it is more common in middle-aged to elderly subjects. Both sexes are equally affected.^[2] Myiasis is fairly common, but underestimated in many rural areas.^[3]

Parasites are quite mobile and their clinical signs vary. Signs and symptoms normally observed are epistaxis, nasal pruritus, sneezing, purulent rhinorrhea, sensation of foreign body in the nose, fetid odor, headache, facial edema, and dysphagia. Myiasis lodging in the nose can reach the eye through the nasolacrimal canal and cause eye symptoms. External eye involvement can cause conjunctival hyperemia and slightly clouded cornea.^[4] Discharge of larvae can be seen through the nose

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and mouth. The parasites can cause extensive necrosis, sloughing, and destruction to the intranasal tissue, and reach deep and inaccessible areas of the nose.^[5] Infestation of the nose and ears is extremely dangerous because of the possibility of penetration into the brain; the fatality rate is approximately 8% in such cases.^[1]

We present a case of naso-ophthalmic myiasis diagnosed at an early stage, aiming to draw attention to the similarities between the clinic symptoms and findings of myiasis and those of inflammatory-allergic disease.

CASE REPORT

A 33-year-old male research assistant working in the Department of Animal Science, Faculty of Agriculture, presented to our emergency room in June, 2006. His complaints were severe foreign body sensation and discharge in the nose, cough, and foreign body sensation in the right eye, all of which appeared just after he had contacted sheep. He had no history of allergic or inflammatory sinonasal disease. Endoscopic nasal examination showed no abnormality except for serous nasal flow and minimal edema. Initially, his complaints were regarded as symptoms of allergic rhinitis and the patient was started on antihistamines. Because of foreign body sensation in the eye, ophthalmologic examination was requested, which revealed many moving larvae in the right eye of the patient (Fig. 1). Larvae were removed and nasolacrimal duct irrigation was performed through the inferior canaliculus with 50% dilute Betadine solution.

Endoscopic nasal examination revealed white larvae in a length of approximately 3 mm. Larvae seemed to be highly sensitive to light since they were moving fast toward the nonilluminated areas. The number of the larvae varied from 1 to 3 (Fig. 2).

The larvae were removed under local anesthesia, taken to the parasitology laboratory in physiological serum, and fixed in 70% ethanol, which was then heated to the boiling point. The larvae were then transferred into 70% ethanol with 5% glycerin and later into 30% potassium hydroxide so that they could attain a translucence appearance. They were then washed with distilled water and examined by light microscopy.^[6] The larvae were identified as first instars of *Oestrus ovis*; however, the larvae died and, therefore, their life cycle could not be followed. Endoscopic nasal examination was made every day.

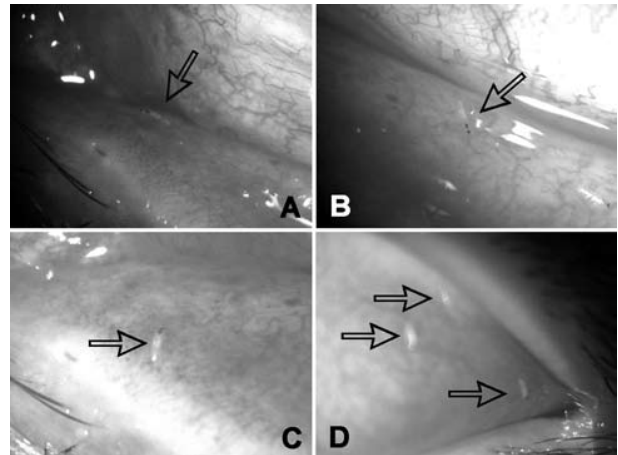


Fig. 1. *Oestrus ovis* larvae can be seen in the right eye.

Paranasal sinus tomography performed a month later showed signs compatible with acute inflammation of the maxillary, frontal, and ethmoidal sinuses (Fig. 3). Two days after paranasal sinus tomography, the patient underwent minimal endoscopic sinus surgery, and bilateral maxillary sinuscopy through the canine fossa under general anesthesia. The maxillary sinuses were observed to be normal. There were no postoperative complications. The result of the postoperative histopathologic evaluation was reported as nonspecific chronic inflammation.

DISCUSSION

There are numerous studies about nasal myiasis caused by *Oestrus ovis* which is frequently encountered in sheep and goats. The primary presenting symptoms of nasal myiasis due to *Oestrus ovis* include epistaxis, foul smell, passage of worms, pain, and foreign body sensation in the nose.^[7] Our patient experienced similar symptoms. Eye involvement by *Oestrus ovis* is in the form of external ophthalmomyiasis, which is confined to the

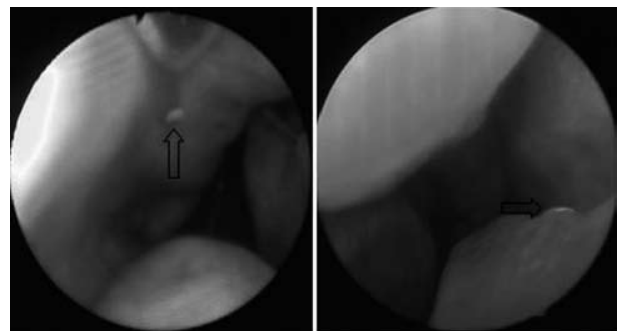


Fig. 2. Endoscopic view of the larvae in the nasal passage.



Fig. 3. Paranasal sinus tomography of the patient.

conjunctiva, and the lid margin.^[3] The diagnosis of myiasis usually depends on the anatomical location of the larvae in the host body, parasitological examination and/or postmortem examination of internal organs.^[6] In our case, the diagnosis was based on direct parasitological examination of the larvae and the history of the patient.

Since the symptoms of the disease are similar to those of allergic rhinitis, patients might be misdiagnosed and receive unnecessary treatment. Aydın et al.^[7] reported on a patient with symptoms resembling allergic rhinitis, who actually turned out to have nasal myiasis caused by *Drosophila melanogaster* due to flower smelling.

Misdiagnosis can also give a chance to larvae to grow and cause complications. The maggot, besides causing extensive erosion of the nose, face and intracranial structures, might rarely result in meningitis and death.^[8,9] Sharma et al.^[9] observed that the most common complications were septal

and palatal perforation. Kuruvilla et al.^[2] reported pneumocephalus after atrophic rhinitis with nasal myiasis. In our case, the diagnosis was made just after the patient's contact with the sheep. Timely diagnosis enabled to eradicate myiasis without any complications. Thus, occupation should be included in the clinical history.

There is no specific treatment for myiasis. Symptomatic treatment with antihistamines, nasal decongestants, and a regular nasal lavage are suggested. Oral antihelminthic treatment and nasal irrigation with dilute Betadine solution have been used for nasal myiasis.^[7] Treatment of ophthalmomyiasis involves anesthetizing the larvae and the eye, followed by removal of the larvae. Antihistamine drops and/or topical antibiotics may also be used as needed.^[3] A plant called *Hyoscyamus niger* has been used among lay people as treatment.

In conclusion, if allergic rhinitis symptoms continue despite appropriate treatment, especially in occupation groups which are under risk for myiasis, careful endoscopic examination should include investigation into the presence of myiasis.

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