

Head Lice in the Cornea: Clinicopathologic Report of A Case

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Abstract

Purpose: To report for the first time, a presumable case of pediculus capitis corneal pseudo-infestation

Case report: Our patient was a 35-year-old farmer presenting with symptoms and signs of ocular discomfort and inflammation. Clinical examination suggested a retained corneal foreign body; pathology of the lesion suggested a female pediculus humanus capitis (head louse).

Conclusion: Arthropod (pseudo-) infestation can be considered in the differential diagnosis of corneal foreign bodies.

Keywords: Corneal Foreign Body, Pseudo-Infestation, Pediculus Humanus Capitis

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Introduction

Parasitic involvement of cornea due to protozoa and arthropods has been previously mentioned in the literature.¹ Although uncommon, there are also several reports of phthiriasis palpebrarum caused by pubic lice in the form of blepharoconjunctivitis.² However, corneal infestation with pediculus capitis is not yet indicated. In this essay, for the first time we are reporting a presumable case of corneal pseudo-infestation by a head louse.

Case report

A 35-year-old farmer presented with symptoms of ocular discomfort in his right eye, spontaneous eyelid drooping, photophobia and occasional redness of the same eye for

four months which had interfered with his activities at work.

On eye examination, he had a $20/20$ uncorrected visual acuity (UCVA) with no significant cylindrical error. Absolute and comparative corneal sensation was normal. An opacity was visible at 9 o'clock at the temporal peripheral cornea (<0.5 mm anterior to limbus) with a vertical diameter of 1 mm and a horizontal diameter of 0.7 mm involving the anterior third to half of the corneal stroma. Superficial melting extended slightly beyond the limits of the opacity.

Both superficial and deep vascularization was present and mild injection in the adjacent conjunctiva was seen.

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Focus of the lesion resembled a retained foreign body with a considerable heterogeneity, fluffy borders and a brownish hue to its depth (Figure 1).



Figure 1. Clinical images of the lesion

Anterior chamber was clear and the fundus was normal. Systemic physical examinations were otherwise normal with no lesions or palpable lymph nodes.

The lesion was simply sloughed by forceful irrigation with a 21 gauge cannula in the operating room. The eye was treated by topical medications (antibiotics and steroids) for two weeks. One month later, he became symptom-free and the neovascularization regressed.

Hematoxylin & Eosin staining of the specimen showed exoskeleton of an insect maximally sized 800x600 microns with its segmentations (metamerism), surrounded by fibrin exudates, eosinophilic necrosis and prominent mononuclear reactions (Figure 2-A). After artistic reconstruction based on serial sections of the lesion, spiracles, bronchi and a structure similar to a posterior bifurcated tail were seen. Size of the arthropod, eight paired thoracic plates with their seven paired corresponding spiracles (respiratory apertures), and dorsal bifurcation without the genital organ of male species, suggested female *Pediculus humanus capitis* (Figure 2-B).³

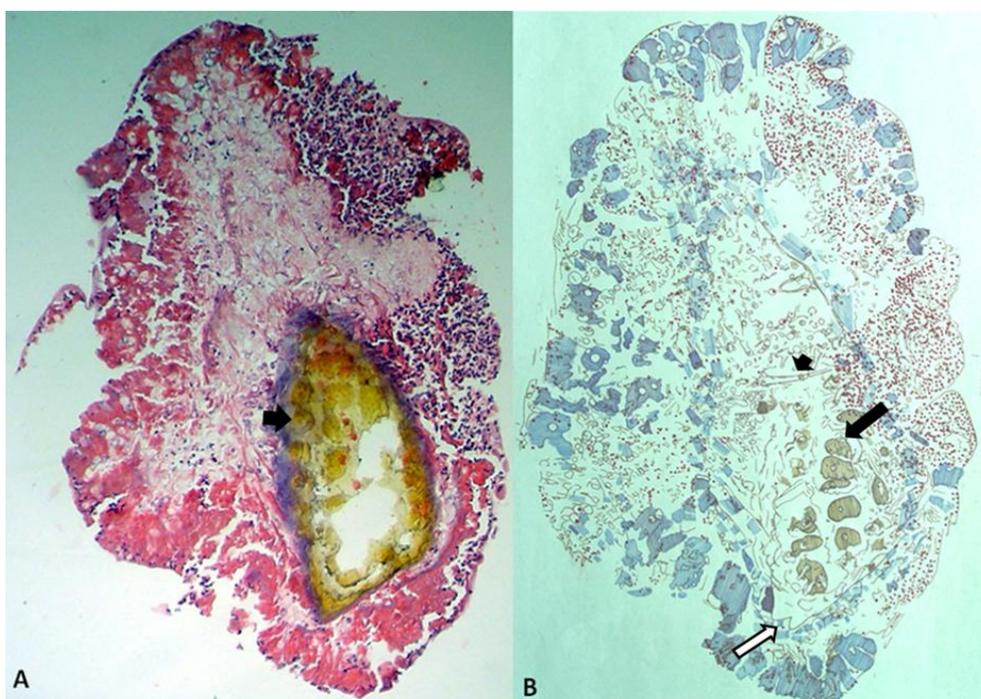


Figure 2. A) Hematoxylin & Eosin (x100) staining of the specimen with noticeable mononuclear reaction, fibrin exudates and necrosis surrounding the exoskeleton. Segmentation (metamerism) is prominent in the structure of the insect. The arrow shows one segment with the corresponding spiracle. B) Artistic reconstruction from several sections of the lesion, showing plates with spiracles at the center (long black arrow), a bronchus (short arrow) and a bifurcated tail (white arrow).

Discussion

Of arthropods, tarantula and caterpillar hairs can penetrate cornea and cause keratitis or present as corneal foreign bodies⁴; but true arthropod infestation and definite parasitic interaction with the cornea have not been reported. Bee sting is also considered as one of the differential diagnoses of corneal foreign bodies in the literature.⁵

Ophthalmomyiasis caused by sheep bot fly *Oestrus ovis*, is another probable cause of arthropod infestation of the cornea mainly associated with farming.⁶

Our patient was a farmer and a motor-cycle rider; clinical exam of the lesion suggested a retained foreign body and the heterogeneous morphology made us suspect an arthropod; although the patient's occupation could let us

suspect myiasis larva or insects' particles, the pathology revealed a head louse.

Conclusion

Corneal pseudo-infestation by head lice or other arthropods can be considered in the differential diagnosis of corneal foreign bodies; heterogeneous morphology of the lesion and the patient's occupational exposure should raise the suspicion.

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References

1. Tauber J, Jehan F. Parasitic keratitis and conjunctivitis. In: Foster CS, Azar DT, Dohlman CH, eds. *The Cornea*, 4th edition. Philadelphia: Lippincott Williams and Wilkins, 2005;427-46.
2. Turgut B, Kurt J, Catak O, Demir T. Phthriasis palpebrarum mimicking lid eczema and blepharitis. *J Ophthalmol* 2009;2009:803951.
3. Harwood RF, James MT. *Entomology in human and animal health*, 7th edition. New York: Macmillan Publishing Co., Inc, 1979;129-41.
4. Watts P, Mcpherson R, Hawksworth NR. Tarantula keratouveitis. *Cornea* 2000;19(3):393-4.
5. Teoh SC, Lee JJ, Fam HB. Corneal honeybee sting. *Can J Ophthalmol* 2005;40(4):469-71.
6. Sigauke E, Beebe WE, Gander RM, et al. Case report: ophthalmomyiasis externa in Dallas County, Texas. *Am J Trop Med Hyg* 2003;68(1):46-7.