

PostScript

LETTERS

Nyctalopia and hemeralopia: the current usage trend in the literature

Nyctalopia and hemeralopia are the rare examples of words that may lead to a good deal of controversy and confusion among doctors of different linguistic backgrounds, because of different definitions and meanings. Nyctalopia is a word from the Greek medical antiquity, defined as "night blindness" or defective dark adaptation.¹ Hemeralopia is a word that originated in the 18th century, which means "day blindness" or visual defect characterised by the inability to see as clearly in bright light as in dim light.^{2,3} Standard English dictionaries also conform with the meanings of nyctalopia and hemeralopia as night blindness and day blindness, respectively. However, the words have been used in an opposite sense by many non-English-speaking doctors.⁴ To reduce confusions, it is recommended that correctly understandable terms such as night blindness and day blindness be used.⁵ Curious about the current compliance with this recommendation, we performed a search for the words nyctalopia and hemeralopia in the title and abstract of original articles and case reports in English included in Medline, provided by PubMed. We retrieved 167 publications that were published between 1951 and 2005. Each retrieved article was examined to determine whether nyctalopia is used to mean night blindness or day blindness, and hemeralopia to mean day blindness or night blindness. Table 1 summarises the results.

The word nyctalopia was used in 85 articles (English, 72 articles; non-English, 13 articles). All these articles used the word aptly to describe night blindness in patients with stationary night blindness, vitamin A deficiency, retinitis pigmentosa and Usher's syndrome, among others.

The word hemeralopia was used in 82 articles (15 of them meant day blindness and 67 of them meant night blindness). The 15 articles with apt usage of the word hemeralopia were mostly written in English to

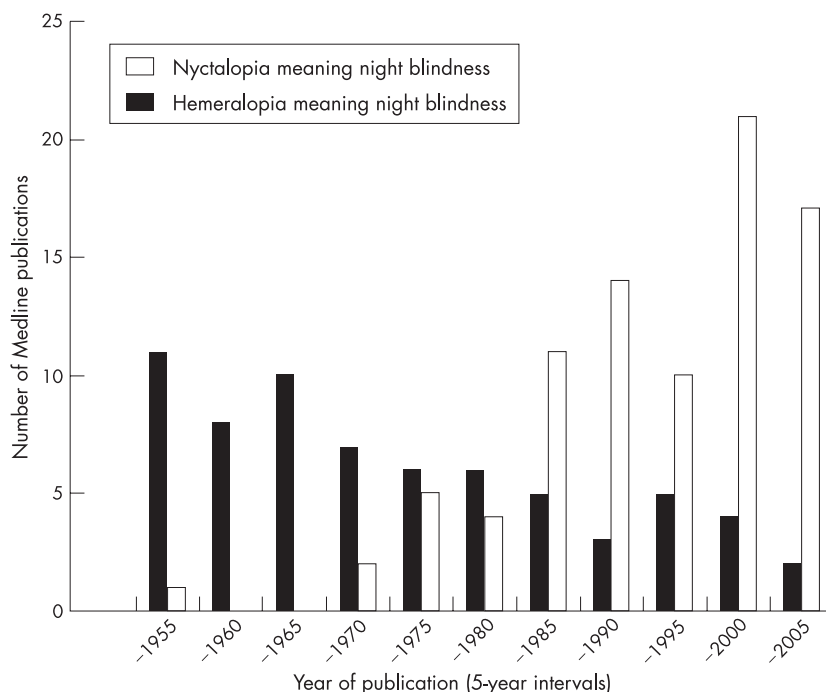


Figure 1 Medline publications using the word nyctalopia to describe night blindness and those using hemeralopia to mean night blindness. The number of articles was summed over 5-year intervals between 1951 and 2001. White bars: articles that used the word nyctalopia to mean night blindness; black bars: articles that used the word hemeralopia to describe night blindness.

describe cone dystrophy, cone dysfunction syndrome and Stargardt's disease, among others. The remaining 67 articles with incorrect usage described night blindness in patients with retinitis pigmentosa, choroideremia, vitamin A deficiency, myopia-night blindness, congenital stationary night blindness and fundus albipunctatus cum hemeralopia, among others, and they originated from non-English-speaking countries, including France, Germany, Italy, Israel and China. Of the 67 articles with the incorrect usage of the word hemeralopia, 10 were written in English and the remaining 57 were in non-English languages.

There was a decreasing trend of usage of the word hemeralopia and an increasing trend of usage of nyctalopia to describe night blindness (fig 1).

The results confirm that the word hemeralopia, but not nyctalopia, has been used incorrectly in the literature among non-English-speaking countries. However, currently, there is an improved trend of compliance with the recommendation that correctly understandable words such as night blindness and day blindness be used instead of the controversial nyctalopia and hemeralopia, respectively.

N Ohba

The Division of Orthoptics and Visual Science, Faculty of Medical Welfare, Aichi Shukutoku University, Nagoya-shi, Japan

A Ohba

Department of Language Communication, Graduate School of Communication, Aichi Shukutoku University, Nagoya-shi, Japan

Correspondence to: N Ohba, Asahigaoka 109-3, Minamisakae-machi, Owariasahi-shi 488-0046, Aichi-ken, Japan; ohbanm@gctv.ne.jp

doi: 10.1136/bjo.2006.097519

Accepted 3 May 2006

Competing interests: None declared.

References

- 1 Brouzas D, Charakidas A, Vasilakis M, et al. Nyctalopia in antiquity. A review of the ancient Greek, Latin, and Byzantine literature. *Ophthalmology* 2001;108:1917-21.

Table 1 Usage of nyctalopia and hemeralopia in Medline publications*

Language in publication	Nyctalopia to describe night blindness	Hemeralopia to describe day blindness	hemeralopia to describe night blindness
English	72	14	10†
French	0	0	25
German	6	0	11
Italian	0	0	7
Dutch	0	1	0
Spanish	0	0	1
Portugese	0	0	1
Polish	3	0	0
Other Western	0	0	
Europe			9‡
Japanese	2	0	0
Chinese	2	0	3
Total	85	15	67

*Medline search for original articles and case reports published until 2005.

†Country of origin: Germany 4; Italy 2; Israel 2; Norway 1; Finland 1.

‡Language of publication: Russian 4; Czechoslovakian 2; Hungarian 1; Polish 1; Rumanian 1.

- 2 **Skinner HA.** The origin of medical term. 2nd edn, New York: Hafner Publishing, 1970.
- 3 **von Hommer K.** Die Hemeralopie als Leitsymptom hereditärer Augenleiden. *Wien Klin Wochensh* 1967;**24**:476–9.
- 4 **Duke-Elder S.** Functional defects of vision. In: *System of ophthalmology. Vol III. Normal and abnormal development.* London: Henry Kimpton, 1964:657–68.
- 5 **Online Mendelian Inheritance in Man, OMIM (TM).** McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology Information, National Library of Medicine, Bethesda, MD, 2000. (<http://www.ncbi.nlm.nih.gov/omim/> (accessed 10 Oct 2006)).

A tiger with glaucoma

We aimed to conduct an ocular examination on a tiger with suspected glaucoma rescued from a circus and on a normal control. Initial observation with flashlight was followed with a complete eye examination under sedation with ketamine and xylazil. We diagnosed anterior staphyloma with secondary glaucoma in the right eye and secondary glaucoma in the left eye of the tiger. The intraocular pressure (IOP; tonopen) in the affected and normal tigers were >80 and <14 mm Hg, respectively. The dependent IOP was higher. Circumstantial evidence suggested that the secondary glaucoma in the tiger was probably caused by circus training-related trauma.

We have heard of reports on glaucoma in cats, dogs and lions,^{1–5} but not in tigers. We had the opportunity to examine the eyes of a 22-year-old male tiger (*Panthera tigris*) rescued from a circus troupe, suspected of having glaucoma.

Case report

The visual acuity in the tiger seemed to be no perception of light, and projection was inaccurate in both the eyes. The conjunctiva was clear. The cornea of the right eye had a pigmented ectatic scar suggestive of anterior staphyloma (fig 1A), whereas the left cornea was white with areas of slight pigmentation and mild vascularisation. The pupil, lens and fundus were not visible. The vertical corneal diameter was 35 mm in both eyes; horizontal corneal diameter was 40 mm in the left eye and could not be measured in the right eye. IOP measured with the tonopen (Medronic Zomed, Jacksonville, Florida, USA) was 90 and 88 mm Hg in the right and left eyes, respectively. On the basis of these findings, we made a diagnosis of anterior staphyloma with secondary glaucoma in the right eye and secondary glaucoma in the left eye.

For comparison, we examined a 6-year-old normal tigress, who showed good fixation and following movements. Discretion demanded omission of the cover test. The conjunctivas were normal, the limbus darkly pigmented and the corneas clear with nictitating membranes.

The iris was yellowish brown (before sedation, brisk pupillary reactions were noted). The lenses were clear (fig 1B). The normal and dependent IOPs were 13 and 12 mm Hg, and 21 and 22 mm Hg, in the right eye and left eyes, respectively.

A tapetal fundus reflex was noted in both eyes. The mid-periphery of the fundus was dark and the greenish macular pigmentation darkened with increased duration of light. The eyes had small optic discs and a 0.8:1 deep cup with vessels extending from the margin.

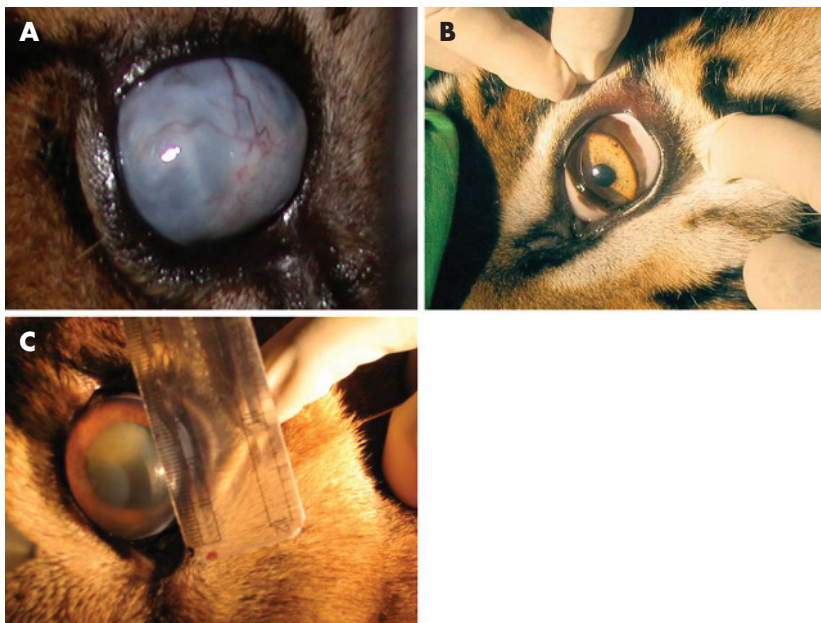


Figure 1 (A) Anterior staphyloma in the right eye of the glaucoma-affected tiger. (B) The right eye of the normal tigress. (C) Subluxated lens in the right eye of the glaucoma-affected lion.

Comment

The cause of the secondary glaucoma in the tiger was puzzling. We also had the opportunity to examine the eyes of two lions (fig 1C) rescued from the same circus. Both had dislocated lenses and glaucoma. On the basis of the circumstantial evidence, we suspect that the cause of secondary glaucoma in them was consequent to circus training-related trauma. As the tiger was also rescued from the same circus, the glaucoma was probably consequent to trauma sustained during training for the circus.

The parameters in the normal tigress could be within normal limits. The IOP was at the higher end of human IOP, but this may be due to the ketamine used. The dependent IOP was higher, as in humans.

Interestingly, the secondary glaucoma caused an increase in corneal diameter in the tiger. As such enlargement does not occur in humans,⁶ perhaps there is a difference in the structure of the limbus in these animals.

Acknowledgements

We thank Mr KSA Rao, Chief Conservator, Mr Bullaiah, Deputy Chief Conservator of Forests, Government of Andhra Pradesh, and Mr Parthasarathy, Curator, Sri Venkateswara Zoological Park (SVZP), Tirupathi, India, for extending the facilities and support for the study. We also thank Prof D Balasubramanian for suggesting this project and Mr Prabhakar, optometrist, for technical help.

R Thomas

VST Centre for Glaucoma Care, Hyderabad, India

S Navin

Siloam Eye Hospital, Hyderabad, India

T Singh

Sri Venkateswara Zoological Park, Tirupathi, India

S Chakrabarti

Kallam Anji Reddy Molecular Genetics Laboratory, LV Prasad Eye Institute, Hyderabad, India

Correspondence to: S Chakrabarti, Brien Holden Eye Research Centre, LV Prasad Eye Institute, Road No 2, Banjara Hills, Hyderabad 500034, India; subho@lpei.org

doi: 10.1136/bjo.2006.099515

Accepted 5 June 2006

Funding: This study was supported by the Hyderabad Eye Research Foundation.

Competing interests: None declared.

References

- 1 **Bull ME, Gebhard DG, Tompkins WA, et al.** Polymorphic expression in the CD8 alpha chain surface receptor of African lions (*Panthera leo*). *Vet Immunol Immunopathol* 2002;**84**:181–9.
- 2 **McLaughlin SA, Render JA, Brightman AH II, et al.** Intraocular findings in three dogs and one cat with chronic glaucoma. *J Am Vet Med Assoc* 1987;**191**:1443–5.
- 3 **Gerding PA, Brightman AH, McLaughlin SA.** Glaucoma associated with a high number of mast cells in the uveal tract of an African lion cub. *J Am Vet Med Assoc* 1987;**191**:1013–14.
- 4 **Louden C, Render JA, Carlton WW.** Mast cell numbers in normal and glaucomatous canine eyes. *Am J Vet Res* 1990;**51**:818–19.
- 5 **Hampson EC, Smith RI, Bernays ME.** Primary glaucoma in Burmese cats. *Aust Vet J* 2002;**80**:672–80.
- 6 **Kwitko ML, ed.** *Glaucoma in infants and children.* New York: Appleton-Century-Crofts, 1973.

Lothian combined paediatric ophthalmology and rheumatology service

The American Academy of Pediatrics has recently published updated guidelines for ophthalmological examination in children with juvenile rheumatoid arthritis (JIA).¹ UK guidelines are currently under preparation. The American guidelines reiterate the need for rigorous screening to prevent the potentially blinding complications of undiagnosed uveitis, which is often asymptomatic and insidious in onset.² The Paediatric Ophthalmology service in Edinburgh runs a weekly joint clinic with the paediatric rheumatologists in the Sick Children's Hospital (Edinburgh, UK). A review of this service,