

same N-terminal domain as pyrin, a protein associated with familial Mediterranean fever. Cryopyrin appears to play a role in innate immune function by regulating the production of proinflammatory cytokines. Cryopyrin expression is also very similar in human and mouse. Significant expression of cryopyrin occurs in mouse eye and skin tissue, which is consistent with symptoms observed in human cryopyrin-associated diseases.⁴ Several different mutations of CIAS1 gene, all located in exon 3 have been described.⁵ Our patient had an A439V mutation (genotyped in June 2004).

The clinical spectrum of diseases associated with CIAS1 mutations is very wide and includes other forms of familial urticaria which do not necessarily meet the clinical criteria of MWS and FCAS.⁵ This case has highlighted a new association with MWS.

References

- 1 <http://www.orpha.net/data/patho/GB/uk-MWS.pdf> (accessed in September 2006).
- 2 Cuisset L, Drenth JPH, Berthelot JM, Meyrier A, Vaudour G, Watts RA *et al*. Genetic linkage of the Muckle-Wells syndrome to chromosome 1q44. *Am J Hum Genet* 1999; **65**: 1054–1059.
- 3 Drenth JPH, Van der Meer JWM. Periodic fevers enter the era of molecular diagnosis. *BMJ* 2000; **320**: 1091–1092.
- 4 Anderson JP, Mueller JL, Rosengren S, Boyle DL, Schaner P, Cannon SB *et al*. Structural expression, and evolutionary analysis of mouse CIAS1. *Gene* 2004; **338**(1): 25–34.
- 5 Dode C, Le Du N, Cuisset L, Letourneur F, Berthelot JM, Vaudour G *et al*. New mutations of CIAS1. That are responsible for Muckle-Wells syndrome and familial cold urticaria: a novel mutation underlies both syndromes. *Am J Hum Genet* 2002; **70**: 1498–1506.

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Sir,
Papillitis, Lyme disease, and cats

We present a case of papillitis caused by Lyme disease in the UK. We also highlight the increased risk of Lyme disease in cat owners.

Case report

A 50-year-old man presented with a 10-day history of central blurring of vision in his left eye. He had noted a rash on his right forearm 6 months previously. There was no definite history of a tick bite or of visiting high-risk areas, but his cat had ticks. Unaided vision was 6/6-3 right and 6/24 left improving to 6/12 with pinhole. There was a mild left relative afferent pupillary defect, a paracentral scotoma inferior to fixation, mild impairment of colour vision, and a pink swollen optic disc on this side.

Lyme disease antibody titres were positive by ELISA and Western blot methods, confirmed by a reference laboratory. The following investigations were normal or negative: full blood count, ESR, auto-antibody screen, coagulation screen, angiotensin converting enzyme, anti-neutrophil cytoplasmic antibody, syphilis serology, and lupus anticoagulant. The patient was treated with a 2-week course of intravenous ceftriaxone. The visual acuity however did not change with treatment.

Comment

Lyme disease can mimic many ophthalmic conditions. It has been reported to cause eyelid oedema, conjunctivitis, keratitis, episcleritis, anterior uveitis, vitritis, choroiditis, endophthalmitis, neuroretinitis, exudative retinal detachment, retinal vasculitis, optic neuritis, optic atrophy, pseudotumour cerebri, paresis of cranial nerves, and orbital myositis.^{1,2} Optic neuritis in Lyme disease may or may not respond to treatment with antibiotics.²

In the mid-1970s, Dr Allen Steere and colleagues noted that a significant number of patients with Lyme disease had cats and had noted ticks on their pets, compared with their unaffected neighbours.³ Lyme disease is now known to occur in cats, and *Borrelia burgdorferi* has been isolated from the tissue of adult and nymphal ticks removed from domestic cats.^{4,5} The increased risk of Lyme disease in cat owners is not widely known. This case report may represent Lyme disease causing papillitis transmitted from the patient's cat.

References

- 1 Stanek G, Strle F. Lyme borreliosis. *Lancet* 2003; **362**: 1639–1647.
- 2 Lesser RL, Kornmehl EW, Pachner AR, Kattah J, Hedges TR, Newman NM *et al*. Neuro-ophthalmologic manifestations of Lyme disease. *Ophthalmology* 1990; **97**(6): 699–706.
- 3 Steere AC, Broderick TF, Malawista SE. Erythema chronicum migrans and Lyme arthritis: epidemiologic evidence for a tick vector. *Am J Epidemiol* 1978; **108**: 312–321.
- 4 Magnarelli LA, Anderson JF, Levine HR, Levy SA. Tick parasitism and antibodies to *Borrelia burgdorferi* in cats. *J Am Vet Med Assoc* 1990; **197**(1): 63–66.

5 Shaw SE, Binns SH, Birtles RJ, Day MJ, Smithson R, Kenny MJ. Molecular evidence of tick-transmitted infections in dogs and cats in the United Kingdom. *Vet Rec* 2005; **157**: 645–648.

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Sir,
Intraocular pressure measurement and goldmann calibration. An eye opening review of practice in United Kingdom

The accurate measurement of intraocular pressure (IOP) is necessary for management of glaucoma and other ocular diseases. Recent studies have reinforced the importance of raised IOP as the main risk factor for the progression of glaucoma.^{1–4} Several methods are employed in clinical practice for measuring IOP, however Goldmann applanation tonometry is the most reliable and accurate method in clinical practice. The tonometer must be correctly calibrated to ensure accurate IOP measurement. There is little data available regarding the recommended frequency of Goldmann calibration. Suggestions by several independent authors range from checking calibration before every session⁵ to an arbitrary annual or bi-annual check.⁶

In order to address this matter we sent out postal questionnaires to all 905 ophthalmology consultants registered with the Royal College of Ophthalmologists (RCO) in the UK. We enquired about the current method employed for measuring IOP and investigated the current and ideal practice for checking Goldmann calibration and the individual(s) responsible for this task.

Our survey had a response rate of 45.6% (413 out of 905). Goldmann tonometry was reported to be used by 99%, hand held contact tonometry (perkins and tonopen) by 55.7% and non-contact methods by 3.1% of the responders. Trans-tarsal tonometry (TDGc-01 tonometer) was used by 0.5% of the responders only in cases where other methods were impossible (eg paediatric cases or corneal pathology). Goldmann tonometry was reported to be used as the sole method for measuring IOP by 58.2% (240/413) of the responders and 41.8% (173/413) stated they used multiple techniques already mentioned.

Personnel involved in measuring IOP included doctors, nursing staff and health care assistants. Goldmann tonometry was used by all the doctors, two-thirds of the nursing staff and half of the health care assistants (HCA's). Handheld tonometry was more popular amongst HCA's (88%) and nursing staff (58.3%) in comparison to doctors (18%).

According to the consultants, the individuals responsible for checking Goldmann calibration were mainly doctors (47.2%). Nearly a third (29.7%) of the responsible individuals were service engineers and a fifth (18.8%) allied health care professionals (nurses, orthoptists and HCA's). However one-fifth (19.3%) of the responders were unaware who was responsible.

When asked, who should shoulder the responsibility for Goldmann calibration ideally, almost half (47.5%) of the responders felt that doctors should but more responders felt other health care professionals could be involved.

(Allied health care professionals (36.8%), service engineers (39.9%) and 1.2% had no opinion).

The manufacturer of the most commonly used Goldmann tonometer (Haag-Streit, Switzerland)⁷ recommends that Goldmann calibration checks to be performed before every clinic. The most popular routines for the current frequency of checking Goldmann calibration (Appendix 1) were annually (18.6%), one monthly (17.4%) and weekly (13.8%). Only in 6.1% of responders stated that the calibration was checked before every clinic. But significantly 39.3% (356 out of 905) of the consultants stated that calibration was not routinely checked.

Regarding the ideal routine for checking Goldmann calibration, most favoured either a weekly (30.3%) or 3 monthly (24.9%) routine. Only 11.4% felt it should be checked before every clinic while 2.2% thought it should only be checked in the event of an abnormal reading and 1.5% had no opinion about it.

Several factors play an important role to explain the disparity between manufacturer's recommendation and the current or even ideal practice for Goldmann calibration checks. These include the pressures of time in busy clinics, missing calibration bars, unawareness to the need of checking calibration frequently and inability to carry out Goldmann calibration.