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Robertson..............................Australia
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Editorial
Why am I a member of ISVO?
The world of veterinary ophthalmology is filled with associations, colleges, societies and groups, established for veterinary ophthalmologists on different scientific levels. ISVO is the only worldwide veterinary ophthalmology association, the only qualifications necessary to become a member being a genuine interest in the field of ophthalmology. For the countries with well-functioning associations, the ISVO may seem an unnecessary society to join. Why pay for something that gives you so little in return? However, most of the world does not consist of large countries, but of smaller. These countries may have only one or a few veterinary teaching institutions, and only a few veterinarians with special qualifications in ophthalmology. For these veterinarians, the international society (read: ISVO) may be a significant link to the rest of the world of ophthalmology. Although the ISVO is not an extremely active organisation, its main goal is to bring together people who share the same interest.

This is achieved through the biannual meetings, and through the newsletter. Solidarity with veterinary ophthalmologists in smaller and often emerging countries can be shown in many ways. One way is to share membership in the same society, thereby signalling that even if one is a member of a larger and scientifically more important association, the worldwide society is not considered too small and insignificant.

Ellen Bjerkås

New Editor
From the fall of 2003 Peter Bedford will take over as editor of The Globe. Thus, all future correspondence about the Newsletter should be directed to him. Peter’s e-mail address is: Pbedford@rvcc.ac.uk

From the ISVO meeting
At the meeting in Cambridge, Andrea Leber was elected new president of the ISVO. Simon Petersen-Jones now holds the position as past president and will still be a board member. Bob Munger is leaving the board. We are grateful for the contribution Bob has given to the understanding of international cooperation in the field of veterinary ophthalmology. Both by keeping contact with colleagues around the world, and especially by arranging the Sarasota ISVO meeting in most disturbing times. Ellen Bjerkås is also leaving the board. Bruce Robertson from Australia was elected new board member.

Treasurer’s report
The BrAVO/ECVO/ESVO/ISVO meeting in Cambridge, England June 26-29, 2003 was, in my estimation, a great success. There were about 190 pre-registered. There was not a separate listing for ISVO members present, but I recognize a great number on the registration list as ISVO members and we picked up 16 new members at the meeting. I reported that the ISVO is in good financial condition. At the Sarasota meeting, 2 years ago, I reported that our expenses had grown to about equal to our income. Income for that meeting exceeded expenses by about $6,000 and sending many of the copies of The Globe by email has reduced mailing expenses so we are operating in the
black, and can continue our dues at $10 a year, preferably paid as $20 for 2 years. We have a reserve of about $37,000 in savings that is the result of money saved, plus the interest accrued since an Italian Company, Fidia, subsidized the ISVO in its early days. We also have about $15,000 in our checking account, up from $7600 on Sept. 1, 2001. I reported at Cambridge that we have about 321 members. That will increase to about 450 when the ISVO dues for the Italian Association for 2003 are received, and the list is updated. The ACVO didn’t pay the ISVO dues for their members for 2003, but 146 of the 245 paid dues for 2 years. There are 142 previous ISVO Members, including 99 from ACVO, whose dues were due Jan. 1, 2003 and about 200 whose dues were due Jan. 1, 2001 or 2002. I sent dues notices in January to all 245 ACVO Diplomates, and other ISVO members whose dues were due Jan. 1, 2003 or earlier. I encourage all to continue membership in ISVO. Besides receiving the Globe, members are entitled to reduced registration at meetings like that held in Cambridge. Since the ISVO is a member of the WSAVA, ISVO members have any advantage the WSAVA affords its members for their meeting registration.

Lloyd C. Helper, ISVO Treasurer

The ISVO –
Were you ever interested in how it started?

THE HISTORY OF THE
INTERNATIONAL SOCIETY of
VETERINARY OPHTHALMOLOGY
(ISVO)

The idea of establishing an international society of veterinarians interested in ophthalmology came about in 1977 when Drs. Rowan Bogg and Douglas Slatter of Australia, Claudio Peruccio of Italy and William Magrane of the United States met at a meeting of the American College of Veterinary Ophthalmologists and discussed its potential. Subsequent correspondence between these men resulted in the preparation of a constitution and the initiative to call a first meeting in conjunction with the World Small Animal Veterinary Association Congress in Barcelona, Spain, September 24, 1980. It was at this Congress that the constitution was adopted and the first officers elected:

-President: Dr. William Magrane, United States
-President-elect: Dr. Rowan Bogg, Australia
-Secretary-treasurer: Dr. Claudio Peruccio, Italy
-Executive Board:
  Dr. Gustavo Aguirre, United States
  Dr. Keith Barnett, Great Britain
  Dr. Kristina Nafstrom, Sweden

The objectives of the Society are:

1. To promote the exchange of information and further scientific progress in veterinary ophthalmology in all species on an international basis.
2. To establish and maintain affiliation with the World Small Animal Veterinary Association and to assist that Association in the planning of any and all programs involving ophthalmology.

Following a successful beginning with a scientific program in Barcelona, a membership of one hundred and thirty-five, representing almost all of the European nations, the United States, Canada, Australia, South America, Africa and Japan was achieved in the first year.

The second meeting of the Society was held in Las Vegas, Nevada in April 1982, in cooperation with American Society of Veterinary Ophthalmology on the occasion of the joint meeting of the American Animal Hospital Association and the World Small Animal Veterinary Association. Each year since has seen substantial growth in membership and excellent scientific programs presented in conjunction with world meetings in the United States, Germany, Japan and France. Most of the credit for the early success of the ISVO is due to Dr. Peruccio, who was largely instrumental in its promotion and planning stages.

A newsletter, reporting activities of the Society was initiated in January of 1983 with Dr. Stephen Bistner of the United States as its first editor.


Lloyd Helper
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Lloyd Helper
**Coming events**

**2005 ISVO MEETING**
will be held in New Mexico in conjunction with the WSAVA congress
For information see the WSAVA homepage
[www.wsava.org](http://www.wsava.org)

**THE ACVO MEETINGS**
Information can be obtained on the ACVO homepage: [www.acvo.com](http://www.acvo.com)

**FUTURE ESVO/ECVO MEETINGS**
2004: June 10-13: Munich, Germany
2005: June: Portugal
2006: June: Belgium

For information see the ESVO homepage [www.esvo.org](http://www.esvo.org) or on the ECVO homepage [www.ecvo.org](http://www.ecvo.org)

**WSAVA 2003**
Pre-congress course on hereditary eye diseases will be arranged in Bangkok October 24.
For information see [www.wsava.org](http://www.wsava.org)

**USEFUL ADDRESSES FOR CONTINUING EDUCATION COURSES:**
European School for Advanced Veterinary Studies: [www.esavs.net](http://www.esavs.net)
Continuing education courses in the United Kingdom: [www.bsava.com](http://www.bsava.com)

**NEWS FROM JAPAN**

In Tokyo last February, the clinical division of the JSCVO (the Japanese college of veterinary ophthalmologists), arranged a wet-lab for general practitioners as part of their annual meeting. The wet-lab was one in a series of continuing education courses directed by Dr A. Saito.

Dr. Saito teaching at the course in Tokyo last February.

The 2003 Annual meeting of the JSCVO will be arranged in Osaka this August. Guest lecturer will be Gustavo Aguirre from Cornell University.

**IN MEMORIAM**
To all Members of the Veterinary Ophthalmology Community:
Dr. Ted Kotani passed away from liver cancer August 28th. Ted had been a friend to many and a valued member of the veterinary ophthalmology community for many years. The world community of veterinary ophthalmology will miss Ted and his contributions.
REPORT FROM LONDON EYE DISEASE
CONTROL MEETING, 2003

The meeting was arranged by the Kennel Club in the UK and was a follow up of two preceding meetings. The first meeting was arranged in Dortmund in 1998 on the initiative of Jochen Eberhardt from the FCI (Fédération Cynologique Internationale), the second in Stockholm on the invitation of the Swedish Kennel Club. Attendees to the meetings are both representatives from the national kennel clubs in Europe as well as veterinary ophthalmologists. In addition, representatives from Australia and USA have been invited. The following is an extract from the meeting report written by Diana Brooks-Ward from The Kennel Club, UK.

Sheila Crispin welcomed everyone to the meeting and reminded the participants of what had been covered at previous meetings. Jeff Sampson from the UK, the KC Genetics Coordinator, outlined developments with regard to DNA testing for inherited eye disease and illustrated how the mapping of the canine genome would aid the development of more tests in the near future.

Comment on developments and changes with regard to existing eye schemes was invited and was provided for the CERF Scheme by Cindy Wheeler, the Swedish Scheme and the ECVO Scheme by Berit Wallin Håkanson and the UK Eye Scheme by Stuart Ellis.

In Stockholm, three working groups had been formed, which reported back on their work:

Examination equipment and facilities, scheme procedures, qualifications and education of panellists (Presented by: Ellen Bjerkås)
A copy of this group's report had been circulated prior to the meeting. The chosen approach was to focus on the ECVO Scheme and highlight various elements for discussion.

From the discussion that ensued it was clear that there was a need:

- To carry out additional work on the necessity for permanent identification of each dog examined under an international scheme.
- To set out a proposed minimum standard of education for panellists internationally. This last point was to be brought back to the ECVO for discussion.

Diagnoses, nomenclature, pass and fail criteria
(Presented by: Astrid Indreboe, Berit Wallin Håkanson)

The first presentation from this group was from a breeder's point of view. It highlighted the fact that breeders look at so much more than the eyes of a dog when making a decision on breeding, and that the general welfare of the dog must be the main issue.

A copy of the main presentation from this group had been circulated prior to the meeting. Discussion highlighted the following necessary actions:

- Additional work was needed to set out, for agreement, detailed definitions and semantics.
- More collaboration with the third working group would be required in the next phase.
- It was agreed that the composition of the group would be adjusted so that international representation was ensured. This would require representation from Southern Europe, USA, New Zealand and Australia in the group.

Data collection, storage and sharing. Design of certificate. (Presented by: Cindy Wheeler)

A presentation regarding a move in the future towards paper free examination reports was given, although it was emphasised that the facility to record the relevant details on paper would remain for the present. A scenario was described where results were entered directly onto computer at the time of examination and were then channelled through to a central computerised registry. Publication of information could be on a centralised website, perhaps one for each continent. Different levels of security could be applied as necessary. The issue of funding was raised - both software development and site maintenance would be costly.

The design of the certificate must be such that data collection and subsequent extraction of the data for statistical and research purposes was addressed as a priority.

The following actions were agreed:

- A prototype programme would be made available at the next meeting
- It was suggested that groups 2 and 3 should collaborate as group 3 required feedback from group 2 before certificate design could start in earnest.

General discussion
From the discussion, a list of objectives to work towards was set out as follows:

- There should be an agreed list of relevant conditions for an international scheme
- Conditions of concern should be prioritised (see press release statement)
- Dogs examined under the scheme should be permanently identified
- All parties needed to work to the same checklist and definitions
- Aims for level of education of panellists need to be agreed
• There should be reciprocity between countries with existing schemes

It was agreed that the existing working groups would be retained to further the agreed actions and to work towards the above objectives. Group leaders would have the flexibility to recruit or release members.

It was thought appropriate for this group to decide on a name and the meeting agreed that from henceon, it would be called the International Working Group on Canine Eye Disease (IWGCED).

It was agreed that another meeting would be held in Paris, at the end of February or early March in 2005. Exact dates would be circulated in due course.

The agenda would be determined by the host country, with reference to the agreed priorities from previous meetings and with additional agenda items included as required.

A statement for release, by the Kennel Club, following the meeting was drafted. The extracts of the press release is as follows:

International Working Group on Canine Eye Disease

This group consists of veterinary ophthalmologists, geneticists, the ACVO, ECVO, WSAVA, FECAVA and representatives from the Kennel Clubs and other canine registries.

The primary aim of the group is to harmonise the various schemes for the control of hereditary eye disease with the ultimate goal of an international eye certificate.

Particular attention will be focused on conditions that are blinding, painful, require surgery, or constant medication.

From the congresses

The joint ISVO/ESVO/ECVO/BVA meeting was held in Cambridge June 2003. It was a most successful event, with more than 70 oral and poster presentations. Delegates came from all over the world and enjoyed some days in the historic university city.

A few selected papers have been included in this issue of The Globe:

CANINE OCULAR ONCHOCERCOSIS: A RETROSPECTIVE STUDY OF 45 CASES IN GREECE

A. Komnenou1, M. Eberhard2, A. Dessiris1, E. Kaldymidou1.

1 Clinic of Surgery, 2 Laboratory of Pathology, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, AUTH, St. Voutyras, 546-27, Thessaloniki, Greece

Division of Parasitic Diseases, Centers for Disease Control & Prevention, Atlanta, Ga 30341, USA.

Purpose. Sporadic cases of periocular onchocercal infection have been reported in dogs in the USA (5) and Hungary (8). The aim of this study is to describe the clinical appearance of the ophthalmic manifestations of 45 cases of canine onchocercosis, since this is the largest series of cases reported, of aberrant onchocercal infection in dogs, coming from one geographical region (Greece), and to propose the most suitable and effective treatment of the disease.

Methods. Forty five animals (45) included in this study, presented to the Clinic of Surgery of AUTH between 1997-2002, having similar ocular manifestations. The male female ratio was 3:1. Twenty-six animals had bilateral ocular manifestations while the rest had unilateral. The major ophthalmic manifestations in all animals were mild to severe periorbital swelling, exophthalmos, photophobia, lacrimation and subconjunctival periocular masses. Diagnosis was based on clinical examination while ultrasound and histopathology of small skin snips collected from the head or the abdominal region were not always helpful. Surgical excision of the periocular masses was performed in all animals unilaterally. Steroids, antibiotics and antiparasitics were given systemically.

Results. All the nodules that removed consisted of granulation tissue and alive parasites emerging from the mass that identified as Onchocerca spp. The eyes that were treated surgically and medically appeared to have a quicker response to the treatment related to the ones that were treated only medically. The treatment was successful in all animals and no recurrence of the disease was noticed till now.

Conclusion. Canine periocular onchocercosis may represent an important disease in Europe with ophthalmologic significance. It should be considered in the differential diagnosis of the ocular and periocular masses in dogs. Diagnosis is mainly based on clinical appearance. Successful treatment is achieved by combination of surgical removal of the parasitic granulomas and antiparasitic medications.
TICK-BORNE ENCEPHALITIS VIRUS AS A POSSIBLE ETIOLOGIC AGENT OF OPTIC NEUritis IN A DOG

K Stadtbaumer1, MW Leschnik1 & B Noll1.
1Clinic for Surgery and Ophthalmology, Veterinary University, Vienna, Austria;
2Small Animal Clinic, Veterinary University, Vienna, Austria.

Purpose: Case report of optic neuritis caused by tick-borne encephalitis virus.
Methods: A 3-year-old female-spayed Siberian Husky was presented at the clinic for surgery and ophthalmology of the Veterinary University, Vienna, Austria for acute vision loss. The owner reported a two-week history of reduced vision in the right eye and an unusual gait of the hind limbs. Hemograms, serum chemistry profiles, CSF analysis, serum and CSF Ig titers and MRI were done for diagnostic purposes. The dog was followed for 247 days.
Results: In the general neurological exam depression and a mild hyperesthesia of the lumbar region was noticed. Ophthalmic examination revealed dilated pupils in both eyes with complete loss of menace response, dazzle and pupillary light reflexes and papillitis in both eyes. The hemogram and serum chemistry profile were within normal limits. The serum IgG titer of tick-borne-encephalitis-virus (TBEV) was highly positive (1:800) as the IgG titer of A. phagocytophila (1:640). Central spinal fluid pressure was mildly elevated. The results of the CSF analysis showed pleocytosis with 144 cells/µl (432/3), elevated protein (30 mg/dl) and glucose (100 mg/dl) and 5-10 erythrocytes/µl. Differentiation of CSF cells revealed 85% small lymphocytes, 10% monocytes and 5% granulocytes. Neither in the CSF nor in the blood smear intracytoplasmatic inclusion bodies as ehrlichial or anaplasmal morulae were observed. In CSF the IgG titer for TBEV was 1:200 positive. The dog was treated with prednisone and doxycycline and the left eye gained vision, the right eye staid blind. Ophthalmologic symptoms of papillitis were gone on day 22 in the left eye, in the right eye on day 86. MRI on day 247 showed a perineural contrast enhancement between globe and optic chiasm in the right optic nerve. When the anti-inflammatory therapy was stopped on day 18 the dog showed hyperesthesia in the cerebral region/near four days later. By then IgG titer for TBEV and A. phagocytophila were negative in the CSF. Analysis of the CSF showed no abnormalities. Serum IgG titer for TBEV decreased to 1:400. The IgG titer for A. phagocytophila (1:160) was also lower than the initial titer value. Because of the relapse the dog was kept on a dose 0.2 mg/kg prednisone. On day 213 the antibody titers in the serum for TBEV were negative and for A. phagocytophila reduced to half of the titer of day 22 (1:80). On day 243 the dog was presented again with apathy, ataxia, disorientation and temporary head tilt for 2 days. CSF analysis showed a lymphocytic pleocytosis (144 cells/µl, 5-10 erythrocytes/µl, Pandy ++). The differentiation of the leucocytes in the CSF revealed 65% small lymphocytes, 20% monocytes and 15% granulocytes. The IgG titer for TBEV was highly positive both in the CSF (1:800) and the serum (1:400). The IgG titer for A. phagocytophila was negative in the CSF and in the serum with 1:80 unchanged to day 213. Prednisone was given in a dose of 2 mg/kg BID for 6 days, and then reduced in four days interval to 2 mg/kg SID and to 1 mg/kg SID. CSF analysis on day 247, when the MRI was done, showed a reduction in the number of cells (38/µl) and a slightly elevated protein.
Conclusions: After interpretation of all findings we assume that this meningoencephalitis with optic neuritis was caused by the TBEV and the secondary immune-mediated response. In endemic areas TBEV should be considered as etiologic agent in optic neuritis in the dog. Interestingly the dog had had a reinfection. The second period of meningoencephalitis caused more severe neurological symptoms but no involvement/inflammation of the optic nerve. Probably the immune mediated inflammatory ophthalmic response had enough time to cause damage to the optic nerve during the first period of TBEV-infection, when therapy was started after 2 weeks of ongoing symptoms, whereas following the second period of meningitis therapy was initiated and no additional ocular problems occurred.
Support: none

OCULAR CANINE EHRLICHIOSIS: A 3-YEAR COURSE

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Purpose: Ocular lesions are a well-recognized complication of systemic ehrlichiosis in the dog and have been reported experimentally as 50%. The purpose of this study was to determine the prevalence of ocular signs in canine ehrlichiosis, characterize ocular signs, response to treatment and prognosis.
Methods: Canine medical records of the Universitat Autonoma de Barcelona Veterinary Teaching Hospital, dating from January 2000 through December 2002, were retrospectively reviewed for suitable cases. Criteria for inclusion in the study were: positive serodiagnostic (ELISA) for Ehrlichia canis and available information about the clinical outcome.
Results: Fifty-six cases of dogs with positive serologic titles for *Ehrlichia canis* were identified during the study period. Forty-six were included in the study based on the above criteria. Eighteen dog breeds were represented: 20 large breeds (43.4%), 23 (50%) medium breeds and 3 (6.6%) small breeds, of them 18 (39.1%) were females and 28 (60.9%) males. Systemic clinical signs included; epistaxis or other bleeding tendencies in 11 cases (23.9%), recurrent lameness in 9 cases (16%), neurological signs in 4 cases (7.2%) and dermatologic alterations in 2 (4.3%). Other clinical signs were depression, anorexia, fever, lymphadenopathy, vomiting and diarrhea. Seventeen cases (30.5%) were referred for bilateral ocular signs, of which 11 patients (65%) presented only ophthalmic signs. Panuveitis with exudative retinal detachment was present in 11 cases (64.7%), exudative anterior uveitis was diagnosed in 5 cases (29.4%), and optic neuritis in 1 case (9.09%). Of the patients with ocular involvement, 5 (29.4%) showed hyphema and/or retinal hemorrhages. All the patients with ocular signs and serology titles (ELISA) higher than 1:320 had panuveitis, lower titles were associated with anterior uveitis. The most frequent concurrent disease was leishmaniosis in 7 cases (15.2%), of which only 1 had ocular signs.

A CASE OF PANuveitis IN THE DOG CAUSED BY Candida Albicans

Jens Linek
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private specialists practice

Purpose: To describe a first case of unilateral panuveitis in the dog caused by Candida albicans. The disease leaded to enucleation because of secondary glaucoma. Diagnosis of the causative agent was made histologically.

Methods: Case report of a unilateral uveitis in the dog. Uveitis was diagnosed clinically by slitlamp biomicroscopy, indirect ophthalmoscopy and tonometry. Ultrasonography showed separation of retinal layers in the fist stage and vitreous compartmentation in the endstage. The disease was progressive and non responsive to corticoid and antibiotic treatment. Complete blood count and a biochemical profile were unsuspicious of systemic disease. Serologically Ehrlichiose, Leischmaniosis and Borreliosis were excluded. Myotic uveitis causes (e.g. Blastomycosis, Histoplasma, and Cryptococcus) are known in North America only. Anterior chamber paracentesis revealed moderate amounts of Neutrophils and Lymphocytes. No material was gained by vitreal centesis. Progression of disease leaded to glaucoma. The eye was enucleated and histopathological examination of the bulbus performed.

Results: Histopathological examination proved Candida albicans as being the causative agent. After enucleation the serologically determined Candida antibodies titre by latex agglutination was 1:640, which is high compared to humans (threshold 1:120). No reference data exist in dogs. Candida uveitis is reported in man in 1% of uveitis patients. The counterlateral eye of the dog is free of symptoms now after over one year.

Conclusions: This is the first documented case of Candida albicans caused uveitis in the dog known by the author. Candida has to be considered as a cause of uveitis in the dog.

ABNORMAL OCULAR PIGMENT DEPOSITION AND GLAUCOMA IN THE DOG

Roswitha R.O.M. van de Sandt a, Michael H. Boevé a,
Frans C. Stades b, Maria J.I. Kik b.
a. Ophthalmology Section, Department of Clinical Sciences of Companion Animals, Faculty of Veterinary Medicine, Utrecht University, The Netherlands b. Department of Veterinary Pathology, Faculty of Veterinary Medicine, Utrecht University, The Netherlands.

Purpose: In the present report 6 cases of ocular pigment deposition combined with glaucoma will be described. Remarkably, these dogs were of three different breeds: Cairn Terrier, Boxer and Labrador Retriever. The purpose of the present study is to establish and compare histological findings in the eyes of these dogs, also comparing them to those of the previous described Cairn Terriers. In addition, our aim is to identify the type of the pigment containing cells in affected eyes.

Methods: Over a two-year period, four dogs with several pigment deposition and glaucoma were referred to the Ophthalmology section of the Department of Clinical Sciences of Companion Animals (Utrecht University). Two more cases were presented to the author in a private referral clinic. All dog eyes were examined ophthalmologically using a handheld slitlamp biomicroscope (Kowa) and by indirect ophthalmoscopy (American Optical or Heine). The intraocular pressure (IOP) was measured using applanation tonometry (Mackay-Marg tonometer (Mek-M) or tonopen Mentor® Tono-Pen XL). In one case gonioscopy was performed as well, using a gonioscopes (Barkan®). Eyes (n=8) in which the condition deteriorated to blindness and had a therapy resistant high intraocular pressure were eventually enucleated. Four of these eyes were from two Cairn Terriers, three eyes from two Boxers and one eye from a Labrador retriever. These eyes were all examined by the same
ophthalmic pathologist. The pathological exams routinely included macroscopic examination and light microscopy. In two eyes transmission electron microscopy (TEM) was performed as well and immunohistochemistry for Melan-A was done on all eyes.

**Results:** Six dogs were referred to the Ophthalmology section of the Department of Clinical Sciences of Companion Animals and to a private referral clinic because of glaucoma or blindness in one or both eyes. In 5 cases ophthalmic examination showed pigment depositions in the sclera around the entire circumference of the periphereal zone. All eyes showed the same histological findings: an extensive infiltration of large melanin-containing cells with an eccentric nucleus, located in the iris, ciliary body, retina, choroids and sclera. Transmission electron microscopy of two of the examined eyes revealed that the morphology of most of these cells was consistent with melanophages.

**Conclusions:** The histological examination of eight enucleated eyes showed that the combination of ocular pigment deposition and glaucoma is a condition not limited to Cairn Terriers as previously described. Other breeds such as the Boxer and Labrador Retriever, may be affected as well. Age and sex distribution of the cases reported here were similar to those reported in previous reports. Pigment deposition and glaucoma is a condition mainly found in middle-aged to older dogs of both sexes.

**COP-1 Treatment Preserves Inner Retinal Function, Evidenced by Pattern Electroretinography, In the Rat Ocular Hypertension Model**

R. Ofrí, G. Ben-Shlomo, S. Bakalář, M. Schwartz

1Koret School of Veterinary Medicine, Hebrew University of Jerusalem, Israel
2Department of Neurobiology, Weizmann Institute of Science, Israel

**Purpose:** Cop-1 is an FDA-approved drug for the treatment of multiple sclerosis. The aim of this study was to use the pattern electroretinogram (PERG) to evaluate the drug’s neuroprotective effect on retinal ganglion cell function in the rat ocular hypertension model of glaucoma.

**Methods:** Unilateral ocular hypertension was induced in 12 Lewis rats through laser photocoagulation of the episcleral and limbal veins. Six of the animals were treated with Cop-1 (500 mg, subcutaneous) prior to lasering. Retinal responses to pattern stimuli of progressively increasing size were recorded on day 0 and at 6 weeks in order to evaluate inner retinal function in the experimental and control animals.

**Results:** Six weeks after lasering, intraocular pressure was significantly higher in all lasered eyes. At this time, PERG amplitudes in the lasered eyes of the treated animals were consistently lower than baseline values, but these differences were not statistically significant (P>0.05). However, PERG amplitudes in the lasered eyes of the untreated, control animals were significantly lower than baseline values in response to all but the narrowest grating (P<0.05). Furthermore, amplitudes of the control animals were consistently lower than those recorded from the lasered eyes of treated animals, with significantly lower responses to wide stimuli (>326 MAP). Mean (± SD) responses of the treated animals to 652 and 1304 MAP gratings were 9.19 ± 2.78 μV and 9.46 ± 2.71 μV, respectively; the corresponding amplitudes of the untreated control animals were 3.94 ± 1.16 μV and 5.20 ± 1.44 μV, respectively (P=0.007, P=0.02, respectively).

**Conclusions:** The PERG may be used to monitor decreased inner retinal function in glaucomatous eyes, and to evaluate the efficacy of neuroprotective therapy. Treatment with Cop-1, an immunomodulating drug, induced significant protection of inner retinal function in hypertensive eyes. The increased responsiveness of treated animals to wide grating stimuli indicates a significant protective effect on retinal ganglion cells associated with the magnocellular pathway.

**Ocular Hypertension After Lens Extraction in Dogs: A Comparison of Two Surgical Techniques**

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**Purpose:** To evaluate the incidence and course of ocular hypertension after lens extraction using two different surgical techniques in clinically normal dogs.

**Methods:** An intercapsular phacoemulsification (PHACO) was performed on the right eye and an extracapsular lens extraction (ECLE) on the left eye of 11 dogs. Furthermore, the same therapy was used before and after the surgery and the same amount of viscoelastic material was utilized in both cases. All the procedures and handling of the dogs was in compliance with the ARVO Guidelines on the Use of Animals in Ophthalmic and Vision Research. The intraocular pressure (IOP) was measured at 60, 90, 120, 180, 240, 300, 360, 540, 720, 900, 1080, 1260 and 1440 at the end of each surgery.
Results: The average IOP before surgery was 13.5mmHg (PHACO) and 13mmHg (ECLE). The average duration of the surgeries were 27 minutes for the PHACO and 50 minutes for the ECLE. The IOP in both groups reached very high levels during the all evaluation intervals, especially the ones the were the PHACO were performed. The IOP peaks occurred at 540 minutes with an average of 39.73mmHg (+/-14.16) for the PHACO and at 120 minutes with an average of 36.27mmHg (+/-14.10) for the ECLE. The lower levels were reached at 1260 and 1440 minutes showing values of 21mmHg (+/-9.07) and 24.27mmHg (+/-5.82) for the ECLE and PHACO, respectively.

On the separate analysis of both groups no alterations with statistical meanings were observed (p>0.05), during the evaluated period. However, on the analysis between groups, significant changes were observed for the same time period – 60 min (p=0.0252), 240 min (p=0.0038), 300 min (p=0.046), 360 min (p=0.0031) and 540 min (p=0.0318); and not very significant at 120 min (p=0.0885) and 1080 min (p=0.0752).

Conclusions: Sudden and large increases in IOP may occur immediately after lens extraction in dogs. The small-incision technique showed higher average postoperative IOPs, and more severe hypertensions. On the other hand, both techniques employed led to higher than normal limits for the species, suggesting that the routine use of antiglaucoma medications in the first hours after surgery is warranted.

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CANINE ORBITAL ADENOMATOSIS: A REPORT OF 15 CASES OF A UNIQUE NEW SYNDROME
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Purpose: To describe a unique orbital neoplasm in dogs of lacrimal or salivary gland origin.

Methods: Fifteen dogs with lesions consistent with a diagnosis of canine orbital adenomatosis were identified from the Comparative Ophthalmic Pathology Laboratory of Wisconsin from 1994 to 2001 and studied using archived histopathologic material. Follow-ups were conducted by phone or through a mailed survey.

Results: The neoplasm occurred in 9 females and 6 males, with no breed predilection. Affected dogs ranged in age from 7-17 years (mean = 9.7 years). Follow-up information was made available for all 15 cases. The clinical presentation included swollen/hyperemic eyelids (4/15), nictitans protrusion (3/15), conjunctival mass (6/15), exophthalmia (4/15), resistance to retrophulsion (2/15), or strabismus (1/15). The masses are most often nodular, friable tissue. Two of the fifteen cases are solid instead of nodular. Histologically the tissue is found in encapsulated lobules resembling well differentiated lacrimal or salivary gland but completely lacking ducts. There is granular PAS positive material found within the cytoplasm. Recurrence occurred in eight of the fifteen cases. In cases where enucleation was performed (3/15) there was no recurrence of the mass. In three cases the dog was euthanized before recurrence was recorded. One death was three years post-surgery, one death was three months post-surgery, and one death was 20 weeks post surgery in a dog with prior enucleation. None of the deaths were related to the tumor.

Conclusion: In the fifteen cases reviewed, canine orbital adenomatosis presented clinically and histologically as a benign neoplasm of lacrimal or salivary gland origin. Recurrence was likely unless the mass was completely excised, at times requiring enucleation.

FIRST REPORT OF AN OCULAR SQUAMOUS-CELL CARCINOMA (OSCC) IN TWO TWIN GOATS IN ITALY
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Purpose: To describe the first report of Ocular Squamous-Cell Carcinoma (OSCC) in goats in Italy and, on the light of what has already been established concerning the bovine OSCC, to suggest latitude, altitude, sun exposition, and feeding level as possible contributing factors to the development of the tumor.

Case report: Two twin goats, male and female, 3 years old, were presented at the Surgical Unit of the Veterinary Teaching Hospital of the University of Teramo (Italy) with a 24 months history of bilateral ocular disease and impaired vision. The two animals were relatively young, both had pigmented eyelids and lived in the mountains of central Italy, mostly outdoor, highly exposed to the sun-light. They were considered like pets and could eat any amount of food.

In the left male's eye and in the right female's eye a fleshy firm mass was evident, covering the entire cornea and protruding through the palpebral fissure. The right male's eye and the left female's eye had
plaques, neovascularization and edema, and the intraocular structures couldn’t be examined. Blood samples were collected for serologic tests (Chlamydia, IBR, CAEV, Toxoplasmosis), and conjunctival swabs were sent for cultures (bacterial, chlamydial and mycoplasmal).

After three days of local and systemic antibiotic therapy (tetracycline and oxytetracycline), the most affected eye of both animals was enucleated. The histopathological report was Squamous-Cell Carcinoma.

**Conclusions:** Ocular Squamous-Cell Carcinoma is a well-known spontaneous tumor, affecting cattle worldwide (BOSCC) and, to a less extent, horses, cats and dogs. The incidence of the BOSCC appears to be correlated with hereditary factors, latitude, altitude, exposure to sunlight, lack of eyelid pigmentation, age, and feeding level; also certain viruses have been suggested as possible cause of "cancer eye". To our knowledge this is the first report of a OSCC in goats; like in cattle latitude, altitude, chronic exposition to ultraviolet radiation and feeding level could be considered as possible predisposing factors to the development of the tumor.

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**NORMAL EQUINE TEAR PH AS MEASURED WITH PH PAPER**

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**Purpose:** There is no information published on the pH of equine tears. Studies in humans have used colorimetric, electrophoretic, glass electrode and indicator paper methods to establish tear pH. The most recent human study, using a glass electrode pH meter, indicated a mean human tear pH of 7.0 with a range of 6.5-7.6. The fragile nature of glass electrodes precludes their use in the conscious horse, but the difference between pH results in humans using indicator paper and glass electrodes is very small (0.07). The purpose of the present study was to determine the normal pH of equine tears using indicator papers to sample the lacrimal lake.

**Methods:** The lacrimal lake was sampled in 17 adult horses (age range 5-25 years, n=34 eyes), with pH paper. All samples were taken from horses that had no evidence of ocular surface and adnexal disease. These horses were not receiving any systemic or topical medication at the time of sampling. An assessment of pH was made to an accuracy of 0.2 on the pH scale by comparing the colour of the indicator strip to the colour chart provided with the indicator paper. Using pH paper with different gradations, further sampling was done 5 minutes apart so that the pH value could be identified with an accuracy of 0.1 on the pH scale. The results were analyzed using a paired-sample T test to assess any variation between left and right eyes. The mean and standard deviation for all samples was calculated.

**Results:** There was no statistical difference between the left and right eyes (p=0.875). The pH range was 8.0-8.6 and the mean value was 8.33 +/- 0.15.

**Conclusions:** Normal equine tears have a higher pH than normal human tears. This preliminary finding is of interest as many of the topical preparations used to treat ocular disease in the horse are medical in origin rather than veterinary, and the more alkaline pH found in equine tears may be of therapeutic significance. Further work is needed to establish if there are variations of equine tear pH in relation to diet, environment and disease.

**Support:** HBLB, 52 Grosvenor Gardens, London SW1W 0AU

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**DRY EYE AND CURLY COAT IN THE CAVALIER KING CHARLES SPANIEL**

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This abstract records, to the author’s knowledge for the first time, a condition affecting the eye and skin in the Cavalier King Charles Spaniel. This would appear to be a well recognised condition in the UK and USA amongst breeders but not by the veterinary profession. The condition is congenital and a preliminary pedigree purusal strongly indicates inheritance in this breed. The condition is definitely congenital with ocular signs of keratoconjunctivitis sicca (KCS) in small puppies and at the same time changes in the coat are noticeable but not obvious. The KCS is bilateral but varies in the degree of severity between eyes and puppies, several with a zero STT reading and therefore with no response in these cases to cyclosporine therapy. The condition is severe and therefore important, particularly in that the skin lesions become worse with age and euthanasia is sometimes the only answer. The abstract will describe and illustrate the various clinical signs in more detail.
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