

Follicular growth and ovulation in queens

By M. Malandain, D. Rault, E. Froment, S. Baudon and S. Chastant-Maillard (*lecture p. 113*)

The reproductive function in queens is characterised by seasonal polyestrus and induced ovulation. Due to the small follicular size, clinical follow-up of terminal follicular growth is difficult in this species. In this study, the ovaries were observed during 9 anovulatory cycles and 12 ovulatory cycles using very high resolution ultrasonography. Follicles appeared as well-defined anechoic circular areas. Mean estrus duration was 7.4 days. On the first day of estral behavioural, 4.75 ± 0.22 follicles were present (2-7 per queen), with an average diameter of 2.3 ± 0.01 mm. Follicular growth continued at a rate of 0.2 ± 0.04 mm per day. At least one follicle of the cohort reached a diameter greater than 3 mm. Maximal follicular growth was reached 3.8 ± 0.3 days on average after the onset of estrus. The diameter of the largest follicle was 3.5 ± 0.04 mm. In the absence of ovulation, follicular diameter decreased on average by 0.1 ± 0.01 mm per day until the end of estrus. The first day after the end of estral behaviour, the diameter of the largest follicle in each cohort was 2.7 ± 0.05 mm. Mechanically induced ovulation begun 23 to 28 hours after vaginal stimulation and lasted approximately 10 hours, and was associated on ultrasound images with the elimination of anechoic areas. This study shows that there is no correlation between the stage of follicular growth and either vaginal smear characteristics, or the duration of estral behaviour. Ultrasonography seems to be the most reliable technique to determine the stage of follicular development, and hence to decide on the optimal time for to induce ovulation prior to artificial insemination.

Key-words : *queen, estrus, follicle, ultrasonography, ovulation.*

From the legitimacy to the legality of actions against the use of anabolic steroids

By X. Delomez (*communication p.121*)

The author describes two cases of fraudulent use of anabolic steroids, namely the Bouille and Gaec de la Bouillette cases, to highlight the importance of simultaneous administrative and legal actions in the repression of delinquency in veterinary public health, particularly when, for reasons of urgency or to protect public health, some aspects of these procedures are corrupt. He emphasizes the advantages of a plan giving officers the authority to act in both fields.

Key words: *veterinary public health, anabolic steroid, clenbuterol, liability, State liability, Police CID (Criminal Investigation Department), administrative branch of the police, veterinary seizure.*

Results of vaccination against canine visceral leishmaniasis (Leishmania infantum) in enzootic areas

By C. Hugnet, J.L. Lemestre, G. Papiérok and G. Bourdoiseau (*communication p. 127*)

Protection against canine leishmaniasis was evaluated in dogs living in enzootic areas in the south of France, and vaccinated with a candidate vaccine, LiESP with the adjuvant MDP. A double-blind field study was carried out in a large number of dogs (n=414) over two years. At the end of the study, infection rate was 0% in vaccinated dogs versus 5.14% in the placebo

group. The candidate vaccine induced an effective and lasting immunity against canine leishmaniasis.

Key words : *Leishmania infantum*, dog, vaccine.

Dermatosis suggesting a staphylococcal toxic shock syndrome in a golden retriever

By E. Guaguère, A. Muller and F. Degorce-Rubiales (*communication p.131*)

*Staphylococcal toxic shock syndrome (STSS) is a rare toxic dermatosis recently described in dogs. In this syndrome, also known in man, the toxin TSST-1 (toxic shock syndrome toxin-1) acts as a superantigen and triggers the secretion of a large number of lymphocytic cytokines (IL1, IL6, TNF α ...). A 5 year-old male golden retriever is presented for a sudden onset of painful skin lesions. Clinical examination shows a severe fever (40.5°C) and dehydration, as well as erythematous and erosive maculae on the abdomen and interdigital spaces. On the next day, epidermal necrolysis developed with spontaneous widespread sloughing (Nikolski sign+) on the face, abdomen and limbs, uncovering a red and oozing dermis. Hematology and biochemistry tests revealed a regenerative normocytic normochromic anemia, hyponatremia and hypochloremia. Hypoalbuminemia was evidenced by protein electrophoresis. Antinuclear antibody assays were within normal limits. A bacteriological culture showed the presence of coagulase-positive staphylococci, *Staphylococcus intermedius*. Massive epidermal neutrophilic exocytosis and apoptotic keratinocytes were found in skin biopsies, as well as neutrophilic satellitosis. A severe necrosis of the epidermis and of the upper half of all follicular ostia was noted. The detection by PCR on blood and skin biopsies of canine herpesvirus and distemper virus was negative. Chest x-rays and abdominal ultrasound examination found no evidence of an internal tumour. Finally, no iatrogenic cause could be identified. The initial treatment included an antibiotic (marbofloxacin 2mg/kg SID), an anti-inflammatory and analgesic (ketoprofen 1mg/kg SID), as well as an opioid analgesic (fentanyl), with intravenous rehydration and daily antiseptic baths with chlorhexidine. The weight loss (10 kg in 10 days), anorexia, anemia and hypoalbuminemia justified an enteral nutrition for 1 week. The skin lesions, hematocrit, hemoglobinemia and albuminemia improved progressively. The dog was given back to its owner after three weeks. He was seen again three months later, cured and in good general health. Two years later, no relapse has occurred .*

Key words: *toxic shock syndrome*, dog, dermatosis.

The eye of laboratory animals in drug safety evaluation

By C. Chalier and V. Benning (*communication p.137*)

*Ophthalmologic examinations in laboratory animals are based on the same principle as that used in species routinely treated in veterinary practice. The main laboratory animal species used in toxicology studies are rodents (mostly rats and sometimes mice) as well as beagles and macaques (*cynomolgus*), and less frequently marmosets or mini-pigs. A sound knowledge of the morphological and functional characteristics, as well as of the spontaneous ocular anomalies found in each species is imperative to assess the potential ocular toxicity of a product. Macroscopic examination of the different eye segments, as well as microscopic examination are systematically performed in regulatory toxicity studies, using well-defined methodology and frequency. Further studies may be added to these routine examinations, based on the product's pharmacological activity, or on ocular changes observed in animals*

or in human patients. Two examples of mechanistic studies illustrate the variety of available techniques and models: investigation of cataractogenic potential of a drug in a co-cataractogenesis study in rats; and identification of an effect on retinal function using electroretinography.

Key words: *laboratory animals, toxicology, ophthalmology, co-cataractogenesis study, electroretinography.*

Eye and hormonal disorders in domestic carnivores

By O. Jongh (*communication p.141*)

Many hormonal disorders are described in domestic carnivores. Some of them have clinical repercussions on the eyeball and its adnexae, which may constitute the first presenting signs of an endocrine dysfunction. In dogs, ocular manifestations of diabetes mellitus are generally a rapidly progressing bilateral cataract. Hyperthyroidism, found mainly in elderly cats, may be complicated by a hypertensive retinopathy. Ocular manifestations are less frequent in canine hypothyroidism, hyperadrenocorticism and parathyroid disorders. Ocular manifestations of hyperlipidemia are associated with various hormonal dysfunctions. Lipemia retinalis, lipid effusion in the anterior chamber, corneal lipidosis¹ and neuro-ophthalmic disorders are described at the end of this review.

Key words: *eye, ocular adnexae, hormonal dysfunctions, dog, cat.*

Biomaterials and intraocular lenses, surgical implantation techniques

By J. Gaiddon (*communication p.147*)

Phacoemulsification technique has allowed to clear up most of the important problems in canine cataract surgery. State refractive studies, new and high biotechnologies materials, and collaboration with specialised laboratories have opened the way to correct post-surgical aphakia. Reliable intraocular lenses (IOL), well tolerated by the intraocular tissues, justify implantation technique development. These IOL hard or soft, foldable and/or injectable are related to precise surgical procedures. The most important quality of these IOL from last generation is to be introduced by a reduce incision and to keep the benefit of the small corneal incision used in endocapsular phacoemulsification.

Key words: *cataract, phacoemulsification, intraocular lens, biomaterials.*

Tularemia: Situation in France, issues and public health risk

By J. Vaissaire, C. Mendy, C. Le Doujet, N. Madani, A. Le Coustumier, M.-E. Terrier and J.-R. Gaillet (*communication p.153*)

This is a retrospective study on natural foci of tularemia in animals as well as human cases reported in France between 1999 and 2004.

Since 1999, approximately 20 to 60 animals foci of infection in hares are detected every year in 19 to 34 French departments. Human cases often occur in areas where animal foci have erupted, but not always.

There are several reasons explaining the presence of this disease on French territory, its underestimation in animals, and probably in man, and its durability. The disease is generally poorly recognised, except amongst shooters who are aware of its existence. Several clinical forms are known in man, sometimes with severe symptoms. The diagnosis of tularemia can be difficult due to its non-specific clinical features. Tularemia is mostly described in hares but other species can be also affected, serving as reservoirs for the infection and sometimes acting as vectors as well.

The animal population tested for tularemia should be widened to include other wild species, as well as some of our domestic animals. In man, this diagnosis should be considered in people presenting certain clinical signs. A background on epidemiological data is given. In addition, as Francisella tularensis is one of the bioterrorism agents, it is essential that clinicians and biologists recognise this bacteria and are aware of its dangers. Tularemia was removed from the list of Legally Contagious Disease in veterinary medicine in 1999. It has become a notifiable disease in human medicine in 2000.

Key words: tularemia, Francisella tularensis, epidemiology, animal, man.

Chemical or natural tools to control microbiological contamination of surfaces

By F. Dubois-Brissonnet, R. Briandet and M.-N. Bellon-Fontaine (*communication p.161*)

Food safety is dependent on the control of microbiological contamination on equipment surfaces in food processing facilities. Cleaning/disinfection procedures are not always adequate and microbial contamination persists as a biofilm. The microorganisms present in a biofilm are generally less sensitive to disinfection treatments than their planktonic counterparts. The increased resistance of biofilms is frequently attributed to the presence of a “protective” organic matrix and the particular physiology of cells within the biofilm. New curative methods are currently emerging for equipment surface decontamination: for instance, some of these use the interesting bactericidal potential of natural compounds.

Key words: biofilm, adhesion, biocontamination, disinfectant, natural antimicrobial.

Contribution to the diagnosis of tularaemia (Francisella tularensis) by in vitro gene amplification (PCR)

By S. Péruchon, S. Hénault, C. Mendy and J. Vaissaire (*short communication p. 165*)

Francisella tularensis is the causal agent of the bacterial zoonosis tularemia. This bacteria infects hares, other rodents and man, but its survival is generally weak outside its hosts. The aim of this study, based on the detection of Francisella genome by PCR, was to improve the disease’s diagnosis from specimens, and thereby assess its incidence. We compared the ability of standard techniques and of the PCR method to detect the bacteria in hare spleen. The PCR method developed in this study was specific and sensitive, and more sensitive than cultures for the detection in the spleen of hares that died a while ago. This test is rapid, reliable and simple, and will be carried out easily, and thus more speedily, by field laboratories. This method will help improve our understanding of the disease’s incidence in France, where it is already well established, and control the environment.

Keywords: Francisella tularensis, tularemia, PCR, hare, 17kDa lipoprotein/ RNAr 16 S, spleen, zoonosis.