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**INCIDENCE AND GENETIC ASPECTS OF PATELLAR LUXATION IN DOGS IN THAILAND**

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Since the high incidence of PL in Pomeranians, it is interesting to study the molecular genetics of this disease. Aim of this study is to assess the possible linkage of one or more collagen genes namely COL6A1, COL6A3, COL9A1, COL9A2, and COL9A3 with PL in Pomeranians.

DNA samples were collected from Pomeranians. 45 affected dogs were selected from 15 families of Pomeranians. These families were analyzed for co-segregation of the phenotype with 5 polymorphic DNA markers situated closely to the COL6A1, COL6A3, COL9A1, COL9A2, and COL9A3 genes. Mlink was used to calculate the lod score for the linkage of the phenotype with each of the markers. The results were statistically analyzed with Genehunter software. Linkage of the gene with PL is determined when there is more than 50% of the genome sharing with the sibling pairs.

The high incidence of PL in Pomeranians presented at the Small Animal Hospital, Faculty of Veterinary Science, Chulalongkorn University during 2006 and 2008. In a recessive model, the lod scores for the COL6A1, COL6A3, COL9A1, COL9A2, and COL9A3 genes were 0.19, 0.05, 0.29, 0.53, and 0.42, respectively and in a dominant model of the lod scores were –0.75, -0.99, -1.01, 0.24, and –0.61, respectively. Sibling-pair analysis revealed that none of the collagen markers analyzed had a high nonparametric linkage score. The low lod scores for these collagen genes indicated non-involvement in PL in Pomeranians.

In summary, these collagen genes are not association with PL in Pomeranians. The large number of affected dogs might cause the low lod scores. SNPs (Single Nucleotide Polymorphisms) with the advantage of its model free might be used at the specific regions of interest in order to find the genes associated with PL in Pomeranians.

**FREEZING OF DOG SEMEN WITH TRIS EXTENDER INCLUDING VARIOUS LEVEL TAURINE IN PELLETS AND STRAWS**

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**Introduction**

Dog breeding is gaining an international interest in recent years. In particular, the use of frozen semen eliminates the costly, dangerous and time-consuming animal transportation, reduces disease risks and allows breeders to use semen from genetically superior dogs both within and between countries. The addition of an antioxidant compound in the extender used for canine semen cryopreservation could reduce lipid peroxidation, therefore preserving optimal sperm performance. However, there are no available references relative to the possible antioxidant protection of canine frozen semen1. The aim of this study was investigation of the effects of adding various amounts of taurine to Tris extender on post-thaw motility and morphological traits of dog semen frozen in pellets and straws.

**Materials and Methods**

Seven Kangal male dogs under the same managemental conditions were used in the study. Semen was collected by hand manipulations for 5 times with weekly intervals. Ejaculates from each dog were divided into 3 equal portions. These 3 portions were extended respectively at 32°C with 20% egg yolk Tris-fructose-citric acid (TFC) extender, 50 mM taurine containing TFC-T1 extender and 100 mM taurine containing TFC-T2 extender. Then the samples were chilled to 5°C in one hour. Glycerolisation was completed in 1 hour (final glycerol concentration 4%)
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and equilibrated for 2 hours. To freeze semen in pellets, dry ice was provided by a private commercial company. Two pellets were frozen (-79°C) for each extender group. Two straws for each extension group were frozen in liquid nitrogen vapor at -110°C and stored in liquid nitrogen at -196°C.

Results
Post-thaw motility results in pellet frozen semen samples for TFC, TFC-T1 and TFC-T2 extenders were 50.43%, 60.00% and 29.57% respectively. These results were 63.00%, 61.00% and 34.71% for TFC, TFC-T1 and TFC-T2 groups respectively in straw frozen semen samples. The lowest motility value for both freezing techniques were in the TFC-T2 extender group and the differences between the motility results between this group and others were statistically significant (p<0.001). In morphological defect results TFC-T1 extender was the most successful with 22.54% and 24.26% for pellet and straw techniques respectively.

Discussion
In conclusion, addition of 50 mM taurine to Tris-fructose-citric acid extender made a beneficial effect on spermatozoa motility and morphology of dog semen frozen in pellets or straws. However adding 100 mM taurine to the TFC extender have been unsuccessful comparing with other extenders in motility and morphology in both freezing techniques.

References:

PULSING OF THE UNICONDYLAR FEMORAL FRACTURE IN THE CORONAL PLANE (HOFFA FRACTURE) ENCOUNTERED IN A DOG.
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Unicondylar fractures of the femur in the coronal plane (Hoffa fracture) is rare and mostly effects the lateral condyle. This study was carried out on a dog, which brought to Ankara University, Faculty of Veterinary Medicine, Orthopedics and Traumatology Clinic. The study was practiced on the medial condyle fracture of the left femur after the clinical and radiological examinations the fractured fragment was reducted and fixated with a cortical screw. Two month later the screw was removed.

Key words:
Coronal Plane, Dog, Fracture, Hoffa.

PULSE WAVE DOPPLER IMAGING OF THE OCULAR ARTERIES IN PERSIAN CAT
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Ultrasonography is relatively inexpensive, noninvasive, and allows definition of ocular and retrobulbar anatomy and, with the advent of Doppler imaging, permits measurement of the blood velocity parameters of the orbital and ocular vasculature.

A total of 6(Female) previously healthy Persian cats were selected. General Electrics Voluson -Pro ultrasound equipment with linear trapezoid 8-10 MHz transducer was applied for all the examinations. The ocular blood vessels imaged included the long posterior ciliary arteries(LPCA), the short posterior ciliary arteries(SPCA), the anterior ciliary artery(ACA). Two meas-
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urements were made for each vessels imaged and the results were averaged: peak systolic velocity(PSV) and end diastolic velocity(EDV). Mean PSV, EDV, at the LPCA were (12.3cm/s, 5.1cm/s), SPCA were (10.8cm/s, 5.5cm/s) and for ACA were(16cm/s,8.2cm/s).

Doppler imaging has the potential for determining no invasively and consecutively the blood velocity parameters found in orbital and ocular diseases, including orbital inflammations and neoplasia; intraocular inflammations and neoplasia; vascular diseases including systemic vascular disease (hypertension) vasculopathies, and anemia; the glaucoma; and document able follow-up after medical and surgical treatment of these diseases.

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INVESTIGATING THE SAFETY OF A NOVEL MYXOMA VIRUS VECTORED RABBIT HAEMORRHAGIC DISEASE VIRUS VACCINE IN YOUNG RABBITS

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Introduction
Myxomatosis and Rabbit Haemorrhagic Disease (RHD) are two viral diseases affecting the European rabbit. Both are almost invariably fatal in the naive animal therefore there is a real need for safe and efficacious vaccines.

Recently a novel recombinant myxomatosis-RHD vaccine has been authorised for use in the EU (Nobivac Myxo-RHD; MSD Animal Health). The vaccine has been shown to be efficacious in protecting rabbits against both diseases following challenge (10). The following study demonstrates the safety of this vaccine in newly-weaned, 5 week old rabbits.

Materials and Methods
Twenty-four 5 week old SPF New Zealand White rabbits were divided into three groups and housed together. Twelve were vaccinated with an overdose (107 ffu), followed, 21 days later, by a dose at maximum release titre (106.1 ffu). Six were inoculated with placebo (diluent) at the same times and six served as uninoculated controls.

All rabbits were observed daily for any adverse local or systemic signs post-inoculation. Tissue from the sites of inoculation from all vaccinated and two placebo-inoculated animals were examined histologically at the end of the study. Blood samples were collected to investigate any spread of vaccine virus to the unvaccinated groups.

Results
All animals were antibody negative for myxoma virus and RHD virus at the start of the study and both unvaccinated groups remained antibody negative for the duration of the study.

No adverse systemic signs attributable to vaccination were observed in any of the animals either following overdose or repeated dose vaccination. Apart from a minor, transient local swelling in two of the vaccines, no adverse injection site reactions were observed either grossly or by subsequent histological analysis.

Reference
OVARIAN REMNANT SYNDROME AND STUMP PYOMETRA IN CATS

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Ovarian remnant syndrome (ORS) is the presence of functional ovarian tissue with signs of estrus as a complication after ovariohysterectomy. However there are few reports about ovarian remnant syndrome and stump pyometra in cats. In this report, three cats with recurrent estrus behaviors after ovariohysterectomy were described. In two cats, ORS and stump pyometra and in one cat only ORS were diagnosed by anamnesis, vaginal cytology and ultrasonography examination. Remnant ovarian and uterine tissues were removed by laparotomy. Two cats were recovered without any complications; however the cat with enlarged and ruptured uterine stump was died 2 days after the operation. This study reveals that ORS and stump pyometra can result in severe complication or be fatal. Also some suggestions were made to prevent these complications.

Key words:
Cat, ovarian remnant, stump pyometra

MAGNETIC RESONANCE IMAGING OF PERSIAN CAT EYE

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The purpose of this study was to investigate magnetic resonance imaging of the normal feline eye and optic nerves using T1-weighted and T2-weighted images and the sizes of the orbital structures were compared in left and right eyes by MRI.

A total of 6 Persian cats weighing 3.2±0.4 kg those were normal in clinical and paraclinical examinations were selected. Magnetic resonance imaging data were collected using GEMSOW (Philips) at a magnetic field strength of 1.5 T. Dorsal, sagittal, and transverse planes images were obtained from left and right eyes. Intraocular structures of the cats visible on T1-weighted and T2-weighted images include cornea, anterior chamber, posterior chamber, lens, iris, sclera, and chiasm. Cornea was well detected in T1-weighted and the iris in T2-weighted and chiasma was well detected in T2-weighted in coronal plan. Measurements of the visible structures on T1-weighted and T2-weighted images did not show any significant difference between the left and right eyes (P<0.05). MRI provides excellent anatomical detail of the feline eye and optic nerves due to its superior soft tissue contrast and its multiplanar and multislice imaging capability.

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INDUCIBLE NITRIC OXIDE SYNTHASE EXPRESSION IN CEREBELLUM OF DOGS INFECTED WITH CANINE DISTEMPER VIRUS

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Nitric oxide generated by the inducible form of nitric oxide synthase (iNOS) may contribute to the pathogenesis of demyelination in the Canine distemper (CD). iNOS is induced in many cell types by inflammatory stimuli and synthesizes very high amount of nitric oxide (NO). The present study investigated iNOS expression in the cerebellum of dogs infected with canine distemper virus (CDV), a disease characterized by demyelination in the white matter of the cerebellum. Cerebellum collected from twenty CDV (14 cases acute and 6 cases chronic) infected and six non-infected dogs. The presence of CDV infection was confirmed on the basis histopathology and immunohistochemical localization of CDV antigen in glial cells of the white matter of cerebellum. The CDV infected cerebella were also categorized Luxol Fast Blue staining according to the severity of demyelinating lesions as mild (n=5), moderate (n=2), or severe (n=3). The horseradish peroxidase (HRP) technique was used to detect immunopositivity and immunolocalisation of the CDV antigen, iNOS, nitrotyrosine and glial fibrillary acidic protein (GFAP). CDV antigens, immunopositive astrocytes, oligodendrocytes and granular neurons were seen in both the white and grey matter of the infected dogs. In the control dogs, iNOS and nitrotyrosine immunopositivity were not seen in the white matter of the cerebellum. In CDV infected dogs, iNOS immunopositivity was observed especially astrocytes in substantia alba of cerebellum. The number of iNOS immunopositive astrocytes were significantly (p < 0.05) higher in chronic cases compared to acute cases of CDV-infected dogs. iNOS immunopositive cells also were immunopositive for nitrotyrosine, reflecting protein nitration by NO derived peroxynitrite and nitrates. iNOS and nitrotyrosine immunopositivity was not detected outside the region of the demyelination plaques. The iNOS immunopositive total cell number was found to be significantly higher in severely affected demyelination areas (p < 0.05). These data indicated that there was a relationship between degrees of the CDV associated with demyelination and the level of iNOS immunopositivity in the glial cells.

Keywords:
Canin Distemper Virus, Cerebellum, Demyelination, iNOS

MEDICAL AND SURGICAL TREATMENT OF SEVERE CORNEAL ALKALINE BURN IN A CAT

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Chemical burns of the cornea are among the most critically urgent ocular emergencies. Especially alkaline materials penetrate rapidly into the cornea and they cause serious complications in the anterior segment structures. Therefore, in ocular alkaline burns early and timely intervention is crucial.

A three year old female tabby cat was referred to the university clinic with severe ocular pain, blepharospasm and mucopurulent discharge of both eyes. The owner noticed the animal fell into a lime pit the previous day. The eyes were lavaged thoroughly for several minutes with a balanced salt solution. Because of the ocular pain, local anesthetic was used for ocular examination. Both eyes had severe corneal alkaline burns with diffuse corneal edema, superficial perilimbal neovascularization and mucopurulent conjunctivitis. Schirmer values were 8 mm in the left eye, 5 mm in the right eye. Fluorescein stain test was positive in both eyes. Cyclopentolate HCl 1%, Lomefloxacin, acetylcystein ophthalmic solutions were used in both eyes. Two weeks following the initial presentation the left eye had improved dramatically and was normal in appearance; however, the right eye had keratitis and corneal vascularization. Corneal scar debrided with a corneal blade and bulbar conjunctival flap was performed to the wound. A third eyelid flap was used to protect the eye. Third eyelid flap was removed from the eye on 4th week and the ulcer was noticed to be healed.

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This case report has shown once again the importance of early intervention of corneal alkaline burns. Also, implementation of medical treatment with conjunctival flap is important to shorten the recovery time of the cornea.

**SERUM CORTISOL CONCENTRATION IN HEALTHY DOGS FOLLOWING INTRAMUSCULAR ADMINISTRATION OF A LOW DOSE OF A DEPOT SYNTHETIC ACTH PREPARATION**

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**Introduction**

The ACTH stimulation test is used in the diagnosis of canine adrenal diseases. Cosyntropin, tetracosactrin or tetracosactide are generic names for ß1– 24- corticotropin, a hormonally active synthetic polypeptide identical to the N- terminal 24 residues of corticotropin. Tetracosactide is also available as a depot formulation, where the active substance is adsorbed onto an inorganic zinc complex to provide a protracted release. These depot formulations have both diagnostic and therapeutic indications in human patients and are the only form available in some countries.

**Aim of the study**

To evaluate the adrenocortical response in healthy dogs by measuring cortisol before and one hour after IM administration of 5 µg/kg of depot tetracosactide (Nuvacthen depot).

**Material and methods**

Inclusion criteria were age > 6 years, absence of clinical signs suggestive of adrenal or non-adrenal disease, normal haemogram, biochemical profile and urinary cortisol:creatinine ratio (reference range< 60*10-6). A total of 19 dogs were included, 9 males and 10 females, aged between 6.5 and 13.5 years (mean 10.2) and with a bodyweight between 4.5 kg and 34 kg (mean 14.3 kg). Dogs received 5 mg/kg IM of a depot synthetic ACTH formulation (Nuvacthen depot; Novartis). Blood samples were obtained before and 60 minutes after ACTH administration.

**Results**

Mean basal serum cortisol (2.31 ± 1.31) increased significantly (P<0.0001) 60 minutes after ACTH administration (11.72 ± 3.52). Range for basal and post-ACTH cortisol concentration was 0.6–5.8 and 6.4-19.5 mg/dl respectively.

**Conclusions**

Depot tetracosactide (5 mg/kg) induces a significant adrenocortical response one hour after IM administration. Reference range is comparable to that reported using the same dose of IV non-adsorbed tetracosactide. Additional studies are needed to establish the efficacy of this protocol as a diagnostic tool for canine hyperadrenocorticism.
Results
Presumptive diagnosis of idiopathic peripheral vestibular syndrome was based on exclusion of other diseases. Two days later, resolution of nystagmus, head turn and rolling was observed. The animal was able to walk, with head tilt and circling toward the affected side. After 4 weeks there was a resolution of clinical signs, an only a residual head tilt was maintained.

One month after resolution, vestibular crisis with nystagmus, circling and disorientation, which disappeared in only a few hours, were observed with a frequency of twice a month. First vestibular crisis and recurrences were both developed after stressful situations. Six months later, time between crisis become shorter and developed independently of stress.

About one year later the first vestibular episode, Misi presented with intense depression and seemed to be unaware of its surroundings. Computed tomography scan was repeated without abnormalities, and finally the cat was euthanized due to the worsening of its neurological state.

At necropsy, no macroscopic lesions were observed. At histopathological study, a great number of polyglucosan bodies were observed.

Conclusions
Idiopathic vestibular syndrome has usually a good prognosis \(^1\). Evolution of this case was uncommon, because there was a high recurrence of vestibular crisis and at the first period they were related with stress. Polyglucosan bodies can appear in aged animals but have also been related with neurologic disease in dogs \(^2\) and cats \(^3\).

References:

DYNAMICS OF PTH SECRETION IN RESPONSE TO HYPO- AND HYPERCALCemia IN HEALTHY CATS
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Introduction
Parathyroid function can be assessed by studying the relationship between parathyroid hormone (PTH) and blood ionized calcium (Ca\(^{2+}\)) which is best represented by a sigmoidal curve: the PTH-Ca\(^{2+}\) curve. Knowledge of the PTH-Ca\(^{2+}\) curve provides important insights of the regulatory mechanisms involved in calcium homeostasis and represents the basis to understand the pathophysiology of endocrine disorders of calcium metabolism \(^1,2\).

The purpose of this study was to characterize the dynamics of PTH secretion in response to changes in extracellular Ca\(^{2+}\) in healthy cats.

Material and methods
The PTH-Ca\(^{2+}\) curves were obtained in thirteen adult healthy European shorthair cats of both sexes (6 males, 7 females) on a standard chow diet with normal mineral content. PTH-Ca\(^{2+}\) curves were obtained by i.v. infusion of disodium EDTA and CaCl\(_2\). Blood Ca\(^{2+}\) was measured using selective electrodes and PTH was measured using both intact (I-PTH) and whole (W-PTH) PTH IRMA assays. Individual PTH-Ca\(^{2+}\) curves were constructed by adjusting the PTH and Ca\(^{2+}\) values of every cat to a sigmoidal equation.

Results
At baseline Ca\(^{2+}\) (1.20±0.01 mM), cats had an I-PTH concentration of 11.6±2.4 pg/mL and a W-PTH concentration of 18.6±5.5 pg/mL. During hypocalcemia a sigmoidal curve that was very similar when measured with I-PTH or W-PTH was obtained. The maximal PTH concentration in response to hypocalcemia was greater with W-PTH (179.6±41.9 pg/mL) than with I-PTH (67.6±10.5 pg/mL) at Ca\(^{2+}\) levels of 0.82±0.02 mM. However, hypercalcemia resulted in an equivalent concentration of

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Fleas and ticks are not just a nuisance for pet animals, they cause diseases and they transmit pathogens like viruses, bacteria and protozoa, including zoonotic pathogens. Veterinary surgeons and physicians therefore agree: pets which are exposed to flea and tick infestations need to be protected. A novel polymer matrix collar containing imidacloprid 10% and flumethrin 4.5% has been approved by European regulatory authorities for flea and tick control in dogs and cats for up to eight months. The release of the active ingredients is based on skin compatible neutral oil derivatives which provide a dose adjusted continuous release for 8 months. From the collar surface active ingredients diffuse into the natural lipid layer on the skin and the coat of treated animals following a concentration gradient from areas with higher to those with lower concentrations thus spreading all over the animal’s body.

The aim of this study is to confirm the release and distribution of the active ingredients during treatment by analytical determination in hair samples taken from different body areas of treated dogs and cats between week 2 and month 8 of treatment and by the assessment of ex vivo flea and tick mortality after exposure to these hair samples.

Hair kinetics has been calculated separately for dogs and cats and for imidacloprid and flumethrin by log regression and is shown as xy functions: Cat imidacloprid: y = 113.59 - 15.79*ln(x), Cat flumethrin: y = 0.63 + 1.63*ln(x), Dog imidacloprid: y = 177.47 - 25.38*ln(x), Dog flumethrin: y = 6.51 + 1.96*ln(x). Fleas and ticks were killed when exposed to the hair samples from treated animals.

The results show that imidacloprid and flumethrin act on contact. Hair kinetics confirms continuous release and distribution of both active ingredients from the polymer matrix to the animals coat for eight months.

STUDY OF THE HEAT SHOCK PROTEIN 70 EXPRESSION IN DOG SEMEN SUBMITTED TO COLD-THERMAL TREATMENT

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Heat shock proteins are molecular chaperones involved in cell protection under chemical or temperature stress situations. HSP70 is associated with cell survival under thermal stress and was found in mammalian spermatocoe (SP2). This study aimed to charac-

Introduction

Heat shock proteins are molecular chaperones involved in cell protection under chemical or temperature stress situations. HSP70 is associated with cell survival under thermal stress and was found in mammalian spermatocoe (SP2). This study aimed to charac-
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Material and Methods
Cytological specimens were obtained from fresh ejaculates (Controls-CTRs; n= 8), and from chilled (24h) and frozen samples (REF and FROZ; 8 samples each), fixed in 95% ethanol for immunocytochemistry with a polyclonal primary antibody (Ab-31010, AbCam; at 1:150). Intensity of immunoreactions was scored from 0 to 3 (negative to strong), in a 200 SPZ/sample and the subcellular distribution was also recorded. Semen quality was evaluated by CASA and the hypo-osmotic swelling test. These tests were used to classify the samples as good, acceptable and bad freezers.

Results
In CTR and REF groups, similar immunoreactions against HSP70 were found: a moderate immunolabeling in the acrosomic region with a staining reinforcement at the periphery was found. In contrast a significant decrease (p<0,05) in the intensity of immunolabeling and a dislocation of the marker towards the SPZ tail was found in the FROZ group. This pattern is similar to the described for capacitated SPZ. Samples classified as bad freezers showed lower intensity scores for HSP70, both in the CTR and REF groups; the decreases in HSP70 were more pronounced for these samples after freezing/thawing. Overall, we could state that males with poor CASA parameters were also those displaying the lower acrosome and higher tail scores.

Conclusions
This work showed the presence of HSP70 in dog SPZ and the changes that exist on the intensity and sub-cellular localization during cryopreservation. Furthermore, the use of new molecular marker may be useful in the predicting sperm reaction to freezing/thawing.

ROYAL CANIN STUDENT AWARD FINALIST 2012, REX AND HIS TYPICAL SYMPTOMS
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Rex, a German shepherd of 12 years, was presented with ulcerative lesions on his lips, which did not respond to antibiotics or prednisolon. He suffered from these lesions for two and a half years, recently he also developed comparable lesions on his nose, around his eyes, and on his hind side.

Upon general examination, no abnormalities were found apart from red mucous membranes. The skin examination showed excoriations and crustae on the lips and elbows. There were plaque-like lesions with crustae and hyperpigmentation on his hips. When de crusts were removed ulcerative lesions with hemopurulent exsudate became visible. On the nasal planum there was hyperkeratosis, partly with depigmentation and an ulcus.

Initially it was considered that the different lesions were caused by two different disorders, an auto-immune dermatosis and a deep pyoderma. Therefore the differential diagnosis was a combination of the possible diagnoses for these disorders and included among other things pemphigus, lupus erythematosus, bullous pemphigoid, epidermolysis acquisita, linear IgA disease, pyotraumatic folliculitis, and German shepherd pyoderma.

Skin biopsies were taken from the lips, elbows and hips. A histopathological examination was performed. This showed a chronic perivascular and peri-adnexal dermatitis with crust formation.

In conclusion, Rex was diagnosed with a German shepherd pyoderma. Treatment with Cefadroxil (200 mg 2 times daily, for 3 weeks) was initiated.

German shepherd pyoderma can be triggered by an underlying disease such as allergic skin disease, metabolic diseases or possibly staphylococcen hypersensitivity. Cell mediated immunodeficiency might play a role. It is rec-
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A CASE REPORT OF FELINE ACROMEGALY: GOING FROM HYPER- TO HYPOGLYCEMIA AFTER TRANSSPHENOIDAL HYPOPHYSECTOMY

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An 9 year old Maine Coon cat, castrated male, was referred to the Department of Clinical Science of Companion Animals, Faculty of Veterinary Medicine Utrecht, with poorly regulated diabetes mellitus (DM). The clinical signs of polyuria/polydipsia (pu/pd) and polyphagia persisted despite high dose of insulin (> 1.5 IU/kg BID). The daily blood glucose curve, performed by the owner at home, revealed persistent hyperglycaemia throughout the day. Based on this, insulin resistance was suspected and the cat has been referred for further investigation. The physical examination was unremarkable, except some muscle atrophy, respiratory stridor and tachycardia. Initial blood examination demonstrated hyperglycaemia and increased plasma fructosamine concentration, consistent with unregulated DM. Therapeutic management had been excluded as possible cause for unregulated DM. In further diagnostics, the urine cortisol creatinine ratios (UCCRs) were unremarkable, which excluded hypercortisolism. Plasma Insulin like Growth Factor (IGF) and growth hormone (GH) were elevated, pointing to acromegaly being a responsible for insulin resistance in this cat. Computed tomography (CT) revealed an enlarged pituitary gland. A presumptive diagnosis of GH-secreting pituitary tumor has been made and transsphenoidal hypophysectomy (HX) was performed. Immunohistological examination of a pituitary specimen confirmed a functional somatotrophic adenoma in the pars distalis of the pituitary gland.

Within one week post-HX plasma glucose levels normalized and insulin administration was no longer required. Post-operatively, an esophageal tube was placed due to loss of appetite and the cat was released home with substitution of cortison acetate, thyroxine and desmopressine. At a re-check 2.5 weeks post-HX, blood examination revealed hypoglycemia. Plasma insulin levels were measurable (12 mU/L), which was interpreted as inappropriate. It could be speculated, that hyperinsulinemia was a result of hyperplasia and/or hypertrophy of β cells (due to previous GH influence). So far, there are no reports in literature on acromegalic cats being hypoglycemic after HX.

Discussion is ongoing concerning whether these examinations are necessary given that Rex showed no other clinical symptoms and he is responding well to the treatment. Further, these assessments are particularly recommended in the case of pruritus, which Rex has not.

An 9 year old Maine Coon cat, castrated male, was referred to the Department of Clinical Science of Companion Animals, Faculty of Veterinary Medicine Utrecht, with poorly regulated diabetes mellitus (DM). The clinical signs of polyuria/polydipsia (pu/pd) and polyphagia persisted despite high dose of insulin (> 1.5 IU/kg BID). The daily blood glucose curve, performed by the owner at home, revealed persistent hyperglycaemia throughout the day. Based on this, insulin resistance was suspected and the cat has been referred for further investigation. The physical examination was unremarkable, except some muscle atrophy, respiratory stridor and tachycardia. Initial blood examination demonstrated hyperglycaemia and increased plasma fructosamine concentration, consistent with unregulated DM. Therapeutic management had been excluded as possible cause for unregulated DM. In further diagnostics, the urine cortisol creatinine ratios (UCCRs) were unremarkable, which excluded hypercortisolism. Plasma Insulin like Growth Factor (IGF) and growth hormone (GH) were elevated, pointing to acromegaly being a responsible for insulin resistance in this cat. Computed tomography (CT) revealed an enlarged pituitary gland. A presumptive diagnosis of GH-secreting pituitary