Debarking by botox injection

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The present research attempts to provide a reliable solution for barking dogs and keeping them in urban environment, using a non-surgery, pharmacological, reversible method. We also conduct a review to find the precise appropriate location for medicine injection and the exact, needed amount of the medicine to be injected as well as diagnosis of its possible side-effects after injection. (1)

For this purpose, we selected 6 mature male dogs seemingly 1 to 2 years of age from big race, and then we divided them into three groups of two members including two experimental groups (A, B) and a control group of C. Then the dogs were kept in normal situation in cages, until they were prepared to be injected medicine. Afterwards, they were undergone anesthesia process under sterile situation in public surgery room. We pulled the tongue of the animal to one side using light and biopsy forceps in order to gain access to glottis and sound cords. Using Needle no. 28 and insulin syringe, we injected two different doses from clostridium botulinum type A, totally 150 units (to each dog of group A) and 100 units (to each dog of group B) in the place of muscles that lead to sound cords, in a two-way method. Also, we injected the same amount of physiology serum to each dog of the control group (C) in the same place with the same method. (2) After injection, the dogs were kept for 3 months and their sound changes were recorded each day under normal conditions.

Results of this study indicated that during the first month after injection, the experimental groups refused to bark when recording the sound. They had become calm; however, these changes were not significant. Since such a study had not already carried out in veterinary, the results that have been obtained through this study can be regarded as a base for pilot future researches on this issue. For this purpose, we need clostridium botulinum type A in various doses in different parts of glottis. (3)

References:
2. Marks, JMBower, AL; goormastic , M; Malcky J L a comparison of common bile duct pressures after botulinum toxin injection into the sphincter of Oddi verus biliary stenting in a canine model. Departament of surgery , Minimally invasive surgery center, E-32, the Cleveland clinic Foundation, 9500 euclid avenue , 44195. Cleveland , OH, USA, e-mail: jmmarks61@aol.com
provide more information about the appearance of canine DISH. Radiography, computed tomography (CT), magnetic resonance imaging (MRI), and/or (histo)pathology were described in four dogs with DISH. All four dogs showed signs of stiffness and lameness. Two dogs also showed comorbidity of DISH and spondylosis that may have resulted in their orthopaedic signs. The diagnosis of DISH can be made using radiography, CT or MRI. On histology, DISH can be distinguished from spondylosis by the location (ventral longitudinal ligament) and extent of new bone formation (Figure 1). More prospective research is needed to evaluate the clinical impact of DISH and of possible therapeutic options.

**Figure 1.** Histological image of a healthy intervertebral disc from a dog with DISH: there is diffuse new bone formation along the ventral side of the whole vertebral body (Picrosirius Red/Alcian Blue stain).

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**LAPAROSCOPIC TREATMENT OF INGUINAL HAEMORRHAGE AFTER PRESCROTAL ORCHIECTOMY IN A DOG**

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**Introduction**

Serious complications after orchietomy are rare, since most can be prevented using good surgical technique. Postoperative haemorrhage may be serious, particularly when it occurs within the abdomen and goes unnoticed (1-2). Treatment of the haemorrhage can be conservative or surgical, depending on the localisation and severity (3). This case describes the use of laparoscopic surgery to locate the bleeding vascular pedicle and achieve hemostasis.

**Case history**

A 1-year-old male Jack Russell terrier was presented to the Faculty of Veterinary Medicine at Ghent University with anaemia, lethargy and a large prescrotal hematoma after elective prescrotal orchietomy. Previous emergency exploration by the referring vet had not been successful in locating the area of bleeding. After stabilizing the cardiorespiratory function, laparoscopic exploration of the abdomen was performed. The inguinal nature of the haemorrhage could be established and after retracting the spermatic cord into the abdomen haemostasis was easily performed using a bipolar sealing device. Evacuation of the prescrotal hematoma afterwards was simplified by the achieved hemostasis.

**Discussion**

In the surgical treatment of postoperative haemorrhage a (pre)scrotal approach is advocated when haemorrhage is located near the scrotum, and an abdominal approach is used for abdominal or inguinal haemorrhage. The caudal abdomen can be approached by traditional laparotomy or laparoscopy (4-6). Performing a laparoscopic exploration of the abdomen offers all the advantages (magnification, superior lightening, adequate working space, complete abdominal exploration) without the disadvantages of a mini-laparotomy (6). Ligation of the spermatic cord can
easy be performed using different techniques. Minor bleeding can be dealt with, using irrigation/suction apparatus. Extensive bleeding, however, would be an indication to convert to open surgery. The authors believe laparoscopic surgery can be the preferential alternative for caudal midline celiotomy to locate and ligate a bleeding vascular pedicle in case of abdominal or inguinal haemorrhage after orchietomy.

References:

CHYLOABDOMEN IN A CAT
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An eight year old castrated cat was referred to the Department of Companion Animals of the Faculty of Veterinary Medicine at Utrecht University after two weeks of anorexia and pica. Treatment with NSAIDs and intravenous fluids had no effect. The cat was referred to the DCSCA when an intraabdominal mass was diagnosed with abdominal palpation. The cat was lethargic and in a poor condition. Clinical examination revealed a heart murmur and an extended abdomen without undulation. Ultrasound of the abdominal cavity revealed free fluid, splenomegaly, multiple, cyst-like structures in the ileocaecal mesenteria, and bilaterally enlarged kidneys with a poorly distinguishable transition between cortex and medulla and a medullary rim sign present. The cysts were aspirated and contained chylus (fluid with a milky aspect; triglyceride: 41.7 mmol/l, cholesterol: 0.9 mmol/l). Haematology and serum biochemistry revealed a non-regenerative anemia, monocytosis and hypergammaglobulinemia. Cardiac ultrasound revealed no clinical significant abnormalities. Exploratory surgery revealed free abdominal chylus and a large mass (10 cm in diameter) originating from the mesenterial lymph nodes. Resection in toto was impossible mainly because of the infiltrative growth of the mass. The mass contained several cyst-like compartments that were filled with chylus. Samples for histology were obtained and the cysts were omentalized. Histology revealed a fibrosarcoma. Fibrosarcoma as a cause of chyloabdomen has not been described before.

REPORT OF FATAL BABESIOSIS IN A TWO WEEKS PUPPY
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Canine babesiosis is a thick borne disease caused by hemoprotozoan parasites of the genus Babesia. It occurs worldwide, mostly in regions where the tick vectors are prevalent. Babesia canis (large piroplasm) and Babesia gibsoni (small piroplasm) are the predominant species known to infect dogs. These organisms primarily affect red blood cells but can involve multiple organs and cause a relatively mild to a fatal hyperacute disease. Severity of disease is correlated with age and immune response of host, virulence of parasite and the degree of parasitemia. The strain virulence and clinical course of the disease is varied in different geographic locations. There is no report of canine Babesiosis in Tehran. This report describes the hyperacute form of canine babesiosis.
caused by Babesia canis in Tehran, Iran. A 14 day-old male Shih Tzu puppy was referred to teaching pet hospital of Faculty of Veterinary Medicine, University of Tehran because of lethargy, anorexia and fatigue. icteric mucous membrane, respiratory distress, dehydration, fever, collapse and shock were the main clinical findings. Complete blood count results showed severe anemia (PCV (%): 10, RBC (106/µl): 1.8), marked thrombocytopenia (100000/µl) and slightly leukocytosis (23000/µl). Pair intraerythrocytic piriform-shape merozoites morphologically compatible with large piroplasm were detected in blood smear stained with Giemsa. Despite the aggressive treatment of shock and babesiosis, the dog died after one hour. Necropsy showed icterus in different serosal surfaces, hepatomegaly, splenomegaly, lymphadenopathy, edema and haemorrhage of lungs. In evaluating splenic impression smears we found Babesia-like inclusions in many erythrocytes. This report shows that the virulent strain of Babesia canis which cause fatal disease exists in Iran. We used clinical findings, hematologic results and demonstration of Babesia organisms within infected erythrocytes to establish the diagnosis however molecular assays might be needed to identify the strain of the piroplasm.

**ACUTE BILATERAL EPISTAXIS IN A 3 MONTHS OLD GREATER SWISS MOUNTAIN DOG: A CASE OF INHERITED THROMBOCYTOPATHY?**
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A 3 months old intact male Greater Swiss Mountain dog was referred to the Department of Clinical Sciences of Companion Animals in Utrecht because of acute bilateral epistaxis, tachycardia and pale mucous membranes after possible trauma. The dog was treated with packed red blood cells and fresh frozen plasma and intranasal adrenaline 0.1% was used to try and stop the bleeding. Blood work showed signs of a nonregenerative anemia and a low total protein and albumin, consistent with acute severe blood loss. Coagulation screening essays, thrombocyte count and vWF antigen activity were within reference ranges. A BMBT could not be performed in the dog due to his restlessness. Because of the agitation of the dog and the continuous epistaxis, the dog was anesthetized to place gauzes in the nasal cavity and rhinopharynx to stop the bleeding. This procedure failed and the owner decided to euthanize the dog. A complete necropsy was performed and showed a mild acute rhinitis but could not elucidate the cause of the epistaxis. A thrombocytopathy was suspected as primary cause of the dog’s severe epistaxis. Recently a thrombocyte disorder has been identified in Greater Swiss Mountain dogs in Canada. A mutation in the gene encoding the ADP receptor P2Y12 on thrombocyte membranes disrupts platelet aggregation. A blood sample of the dog was sent to Canada and the dog resulted a carrier for the P2Y12 mutation. In the current opinion carriers have no clinical signs and do not bleed excessively following trauma or surgery, unless another hemostatic disorder is coinherited, as described in humans.

Reference:

**FOOD-DEPENDENT HYPERCORTISOLISM IN A DOG WITH AN ADRENOCORTICAL TUMOR**
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In most cases, spontaneous canine hypercortisolism is a result of excessive secretion of adrenocorticotropic hormone (ACTH) by the pituitary gland (pituitary-dependent hypercortisolism, PDH) or an autonomous cortisol-secreting adrenocortical tumor (AT). In about 10% of cases a combination of PDH and AT may occur. Here we report on an 8-year-old, female castrated poodle, in
which hypercortisolism was diagnosed based on typical clinical and biochemical changes and elevated urinary corticoid creatinine ratios (UCCR). Computed tomography revealed a non-enlarged pituitary and asymmetric adrenals: the size and shape of the right adrenal were suggestive of neoplasia, while the left adrenal was considered not-atrophic. These findings point to hypercortisolism due to a combination of AT and hypophyseal microadenoma. Next, laparoscopic right unilateral adrenalectomy was performed. Not unexpectedly, the surgery was not curative. Endocrine tests post surgery revealed elevated UCCR and also the low-dose dexamethasone suppression test (LDDST) pointed to hypercortisolism. Basal plasma ACTH concentration was suppressed on repeated measurements. Based on these results, expression of functional aberrant receptors was suspected and the possibility of food-dependent hypercortisolism (FDH) was explored. Ingestion of a meal induced an increase of UCCR and plasma cortisol concentration of > 50%, which is consistent with the diagnostic criteria of FDH in humans. In addition, administration of octreotide completely prevented meal-induced hypercortisolemia. This has been ascribed to the negative effect of octreotide on the secretion of gastric-inhibitory polypeptide (GIP). As aberrant expression of functional GIP receptor underlies FDH, lack of cortisol release after octreotide administration indirectly proved the diagnosis of FDH in this dog (1). This is a first report of a dog with an AT and FDH.

Reference:

ATRIAL SEPTAL DEFECT IN A FERRET: A CASE REPORT
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two year old, male castrated, ferret was presented with chronic, progressive distention of the abdomen and weight loss despite normal appetite. Examination by the referring veterinarian did not reveal any abnormalities aside from the ascites. Serum chemistry and urinary profile revealed a low serum albumine, a low-normal total protein and proteinuria. Starvation based ascites was suspected and the patient was treated with furosemide and a feeding protocol. No clinical improvement was achieved and the patient was referred to our clinic.

At physical examination pale mucous membranes, an elongated CRT, a pulse rate above 300 bpm, severe ascites and lymphadenopathy were found. No heart murmurs or other abnormalities were found at additional circulatory examination.

Echocardiography revealed an atrial septum defect (ASD) of 2 mm with concurrent dilatation of the right atrium and severe eccentric hypertrophy of the right ventricle. Severe left-to-right atrial shunting, as well as a tricuspid valve insufficiency was visible with Color flow Doppler. The diameter of the pulmonary artery and its peak velocity were within normal limits. The left atrium and ventricle were within normal limits. An enlarged liver, a distended caudal vena cava and hepatic veins were present. The free abdominal fluid had an echogenic aspect.

The patient was euthanized because of poor prognosis and presented for post mortem examination. The latter confirmed the ultrasonographic findings. The abdominal free fluid (200 ml) was fibropurulent exsudate. In addition, all lung lobes were diffusely edematous. Decompensation...
Royal Canin Clinical Cases Award

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Pituitary dwarfism in dogs is due to an autosomal, recessively inherited disorder, caused by a genetic defect in LHX3\(^{(1)}\). It is encountered most often in German shepherd dogs, but has been mentioned to occur in the Czechoslovakian wolf dog as well. The disorder is characterized by underdevelopment of the pituitary gland and a combined pituitary hormone deficiency. Pituitary dwarfism can lead to a wide range of clinical manifestations and not all dwarfs display the same signs. The most common clinical manifestations are marked growth retardation, retention of secondary hairs (puppy hair coat) with concurrent lack of primary hairs, and bilateral symmetrical alopecia\(^{(2)}\).

A 7-month-old female intact Czechoslovakian wolf dog, suffering from pituitary dwarfism, was presented with progressive ataxia, sopor and intermittent star gazing. Neurological exam revealed ataxia of her limbs, trunk and head, paraparesis, impaired proprioception and a hypermetric gait of all four limbs. History and clinical signs suggested a combination of a cerebellar and a spinal problem. Radiography, computed tomography and magnetic resonance imaging were performed of the neck and skull. Imaging revealed an abnormal dens and incomplete ossification between the three bony elements of the atlas with concurrent atlanto-axial subluxation and dynamic compression of the spinal cord by the dens. In addition, the calvaria caused pressure on the cerebellum. The malformations and aberrant motion at C1-C2 were confirmed at necropsy.

In human patients that suffer from dwarfism caused by a mutation in LHX3, anatomical abnormalities in the occipito-atlantoaxial joint in combination with a basilar...
impression of the dens axis can be found[3]. This is the first report of similar abnormalities in a dog with pituitary dwarfism.

References:

PARAPROTEINEMIA AS CAUSE OF HEMORRHAGIC DIATHESIS
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A 7-year-old, castrated male, Maltese dog presented with ongoing postoperative hemorrhage from a surgery wound after a mass (suspect sarcoma on cytology) had been removed by the referring veterinarian from the right axillary region.

On physical exam the dog was quiet but alert, had a steep pulse with a rate of 190/min and was panting. The mucous membranes were pale-pink, capillary refill time was <1 second and the peripheral lymph nodes were not enlarged. The surgery wound still actively bleeding and had formed a large hematoma.

Because of the large hematoma and ongoing severe hemorrhage, a disorder of the secondary hemostasis was suspected. Abnormalities of the intrinsic pathway (e.g. Hemophilia A and B), extrinsic pathway (defect in factor VII), common pathway (e.g. defect in prothrombin, fibrinogen), or combinations (vitamin K deficiency, hepatic disease, DIC) were excluded since PT, APTT and fibrinogen were within reference range. Remaining differential diagnoses are inhibitors of the coagulation or abnormalities in the protein spectrum. In this case a monoclonal hyper gammaglobulinemia was detected. This could be caused by chronic infections, but the monoclonal appearance suggested a paraproteinemia due to multiple myeloma.

Paraproteinemia can induce hemorrhagic diathesis. In human literature, qualitative platelet dysfunction, acquired von Willebrand Factor (vWF) deficiency, inhibition of fibrin polymerization, heparin like circulating anticoagulants and vascular endothelial damage, are reported as potential causes [1]. The vWF in this dog was 59%, which could have contributed to the increased bleeding tendency.

The paraproteinemia and hemorrhagic diathesis resolved after plasmapheresis and the diagnosis multiple myeloma was confirmed by cytology of a bone marrow biopsy. Histopathology of the removed axillary mass showed a chronic inflammation. Treatment with prednisolone resulted in clinical remission.

In conclusion, in dogs with clinical hemorrhagic diathesis with a normal coagulation profile, paraproteinemias should be considered as an underlying cause.

References:
A 5-year-old male neutered Gos d’atura catala was referred to the Utrecht University Clinic for Companion Animals for evaluation of progressive exercise intolerance since 2 months, weight loss, polyphagia and tachypnoe. He had always been a very quiet dog and never was very energetic.

At presentation he had a stiff gait in the front limbs and could only walk for a few meters before he had to lie down. He presented with a breathing frequency of 80/min and showed no further abnormalities on clinical examination.

During the workup of exercise intolerance elevated muscle and liver enzymes, elevated lactate, hypoglycemia and myoglobinuria were detected. A storage disease was suspected and liver and muscle biopsies were taken. Glycogen storage was identified in the liver biopsies whereas lipid storage was diagnosed in the muscle biopsies.

Canine lipid storage myopathies are usually associated with primary or secondary carnitine deficiency, abnormal function of mitochondria or deranged fatty acid oxidation.

Glycogen storage diseases are rare diseases in dogs.

In humans different glycogen storage diseases are recognized. Storage diseases as a cause of myopathies are also rare. In human literature there are a few reports in which glycogen storage disease with concurrent muscular lipid storage or glycogen storage and carnitine deficiency are described. How the two storage problems are connected is not completely understood.

The dog was supplemented with L-carnitine, coenzyme Q, Riboflavin and fed with a high protein diet with multi-portions divided over the day. The dog improved clinically.

If a muscular and hepatic storage disease is suspected, it is important to take biopsies of both the liver and the muscles, because the storage products can differ. In human medicine it has been documented that patients only improve clinically when both problems are treated.