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Posters
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PCR-CONFIRMED *ENTAMOEBA INVADENS*-ASSOCIATED HEPATOCOLITIS IN 3 CO-HOUSED HOME'S HINGEBACK TORTOISES (*KINIXYS HOMEANA*)

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Introduction: *Entamoeba invadens* is an amoeboid protozoan known to be highly pathogenic in lizards and snakes. A single PCR-confirmed case is documented in a river turtle but reports of presumptive cases affecting terrestrial chelonians lack molecular confirmation by PCR testing. This presentation documents a rare outbreak of PCR-confirmed *E. invadens* infection in three co-housed terrestrial chelonians.
Materials and methods: Three deceased Home's hingeback tortoises (*Kinixys homeana*) were submitted by a zoological collection over a 2-month period for full post-mortem examination.
Results: Primary gross lesions included: 1) hepatomegaly with multifocal, 2–5 mm diameter, pale-cream/tan, irregularly circular depressions rimmed by melanin pigment over the capsular surface and cut surfaces; and 2) catarrhal colitis with diffuse submucosal oedematous thickening, reddened mucosa and moderate amounts of intraluminal mucoid fluid. Direct microscopy of colonic content revealed moderate numbers of large ciliate protozoa (consistent with *Balantidium coli*) and low numbers of smaller non-ciliate amoeba-like protozoa. Main histological lesions included: 1) marked, multifocal to coalescing random acute hepatic necrosis with intralesional protozoa (consistent with *Entamoeba* spp) and occasional multifocal bacillary bacterial colonies; and 2) marked subacute diffuse erosive and heterophilic colitis with submucosa oedema and intralesional (*Entamoeba*-like) protozoa and mixed colonizing bacteria. Pooled liver samples were positive on PCR analysis for *Entamoeba* spp and *E. invadens*.
Conclusions: This PCR-confirmed outbreak of *E. invadens* infection substantiates past suspicions that this *Entamoeba* species can induce clinical disease in terrestrial chelonians and may be transmissible. Whilst the source of infection was unknown, co-housed reptiles or faecal contamination cannot be excluded.

TESTICULAR DEGENERATION DUE TO SUSPECT CHRONIC THEOBROMINE POISONING IN TWO RESCUED COATIS (*NASUA* SPP)

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Introduction: Theobromine and caffeine are the most common methylxanthines present in high concentrations in cacao or/and caffeine. Theobromine absorption and excretion is slow in animals, therefore the half-life is longer in most animals. In humans, there is increasing evidence that theobromine ingestion is involved in changes in endogenous physiological adrenocortical secretion and the development of testicular pathological changes, including cancer. Here we report testicular degeneration in two male coatis (*Nasua* spp) with a history of being fed a theobromine-rich diet.
Materials and methods: Two rescued 4-year-old coatis (*Nasua* spp) used for entertainment in a circus were neutered in a private veterinary practice in Texas, USA. The animals presented with friable testicles with scattered firm foci. Both had a history of being indiscriminately fed with food containing theobromine (eg, cupcakes, chocolate). The testicles of both animals were submitted to the Zoo and Exotic Animal Pathology Service at the University of Georgia, USA, for histopathological analysis. The samples were histologically processed and stained with HE and Masson's trichrome, plus IHC for the expression of Melan-A.
Results: Histologically, both animals presented with diffuse partial or complete lack of spermatogenesis, along with germ cell degeneration, disorganization and depletion. Severely affected tubules were sclerotic with mineralized spermatozoa and fibrosis. Approximately 90% of epididymal tubules were devoid of spermatozoa. Additionally, there were multifocal spermatozoa granulomas. One of the animals also had bilateral interstitial cell hyperplasia.
Conclusions: Considering the clinical history, the testicular histopathological alterations are comparable to theobromine-induced lesions reported in other species.

CRYPTOSPORIDIUM ANDERSONI-ASSOCIATED PROLIFERATIVE ABOMASITIS IN A ROAN ANTELOPE (*HIPPOTRAGUS EQUINUS*)

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Introduction: *Cryptosporidium* spp are zoonotic, intracellular and extracytoplasmic apicomplexan parasites; infections are an important cause of potentially life-threatening diarrhoea in a wide variety of vertebrate species worldwide. *C. andersoni* infections have mainly been described in cattle and camels, with occasional reports in humans. Though many cryptosporidia have a tropism for small intestinal enterocytes, *C. andersoni* preferentially infects abomasal epithelia in cattle. In other species, clinical findings, as well as the gross and histological lesions associated with *C. andersoni*, have not been described.
Materials and methods: A 2-year-old male zoo-housed roan antelope (*Hippotragus equinus*) was submitted for routine post-mortem investigation after a prolonged history of diarrhoea and weight loss. Genomic DNA was extracted from abomasal and intestinal contents and subject to PCR using primers specific for the 18S rRNA gene of *Cryptosporidium* spp, followed by Sanger sequencing.
Results: Gross findings included a diffusely thickened and corrugated abomasal mucosa. Histologically, the apical surface of the markedly hyperplastic abomasal mucosa was lined by abundant structures consistent with *Cryptosporidium* spp. Ziehl–Neelsen staining of abomasal content smears highlighted abundant acid-fast positive structures consistent with *Cryptosporidium* spp. All samples tested were positive by 18S PCR and sequences were most closely homologous to *C. andersoni*.
Conclusions: This is the first report of abomasal cryptosporidiosis in a roan antelope. Zookeepers and veterinarians should consider this pathogen in

cases of diarrhoea in this species. This agent is a zoonotic pathogen and early diagnosis of animals in captivity may help to prevent human cases, especially in immunocompromised patients.

INTRA-ABDOMINAL SOFT TISSUE SARCOMA IN AN ELDERLY CALIFORNIA SEA LION FROM A ZOO

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Introduction: Neoplastic diseases in sea lions are frequent. Unfortunately, most of these are due to human driven pollution of their habitat. However, tumours associated with high age in zoo kept sea lions are uncommon. This report presents one such case with multiple intra-abdominal tumour masses in an elderly Californian sea lion.
Materials and methods: A 27-year-old male California sea lion (*Zalophus californianus*) was submitted for necropsy from Zagreb Zoo. During routine necropsy samples of the tumour masses were taken and the following histochemical or immunohistochemical stains were performed: haematoxylin and eosin, periodic acid–Schiff (PAS), vimentin, pancytokeratin, smooth muscle actin (SMA), S100 protein (S100), glial fibrillary acidic protein (GFAP) and neuron-specific enolase (NSE).
Results: Necropsy revealed two multilobulated, round, pink to grey, soft elastic, 13 and 3 cm in diameter intra-abdominal masses that were attached to the jejunal mesentery. Microscopic examination revealed a moderately cellular mass supported by scant stroma, often containing watery extracellular matrix or protein, and composed of poorly defined streams and bundles of mostly plump but also elongated and oval-shaped, medium-sized cells. Large areas of the tumour were necrotic or haemorrhagic, and mitoses were moderately frequent. PAS, pancytokeratin, SMA and GFAP stains were negative, while vimentin, S100 and NSE were expressed. The animal died due to causes unrelated to the tumour (chronic heart failure).
Conclusions: Based on the results the diagnosis of soft tissue sarcoma was made. The morphology of the cells and findings of the IHC markers used favour the diagnosis of schwannoma.

OVARIAN TERATOMA IN A FREE RANGING ROE DEER (*CAPREOLUS CAPREOLUS*)

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Introduction: Ovarian teratomas (OTs), rare neoplasms composed of endodermal, mesodermal and ectodermal derived elements (DEs), can occur in various species, including wildlife. However, there is limited knowledge about the occurrence of OTs in deer, with only three cases reported in roe deer (RD) (*Capreolus capreolus*). Here we describe an OT found in a RD.
Materials and methods: A 3-year-old free ranging female RD in poor condition, with low adipose deposits, was found dead and subjected to necropsy, revealing a pathological condition in the right ovary, which was sampled for histopathology.
Results: The right ovary, measuring 27 cm in maximum diameter and weighing 3.3 kg, appeared cocooned and polycystic, compressing the right uterine horn where a partially lytic fetus was present. Histologically, the ovary was replaced by a variably cellular, well-demarcated, multilobulated and polycystic unencapsulated neoplasm with expansive growth and consisting of tissues derived from endoderm, mesoderm and ectoderm. The endodermal DEs were squamous and columnar epithelial cells, delimiting alveolar and bronchiolar structures, respectively. The mesodermal DEs comprised myxoid, fibrous and cartilaginous connective tissue. The ectodermal DEs included epidermal tissue, delimiting large cysts containing abundant lamellar keratin. Numerous pilosebaceous units, often containing hair shafts, radiated from these cysts. One mitosis was observed in 2.37 mm^2. A diagnosis of OT was made.
Conclusions: OTs are rare neoplasms derived from pluripotent cells rarely described in wildlife. Further reports will be useful to better understand the incidence, cause and impact of reproductive neoplasms, including OTs, in wild ungulate populations.

MULTICENTRIC CUTANEOUS HISTIOCYTIC PROLIFERATION RESEMBLING LANGERHANS CELL HISTIOCYTOSIS IN A HOWLER MONKEY (*ALLOUATA PALLIATA*)

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Introduction: Langerhans cell histiocytosis has been mostly described in humans and, although uncommon, it is well recognized in dogs. This case report describes the clinical and pathological aspects of a multifocal cutaneous histiocytic proliferation resembling Langerhans cell histiocytosis in a howler monkey.
Materials and methods: An eleven-year-old male howler monkey (*Allouata palliata*) was presented with mild lethargy, weight loss and numerous skin lesions. The biggest one was located close to the elbow; others were reported to have grown and regressed. Seven months later, new skin masses had developed in the chest and submandibular region. Neither worsening of clinical signs nor lymphadenomegaly were reported, and prednisone treatment was initiated. The largest initial masses (elbow and submandibular region) and some later masses were completely excised and subjected to histological and immunohistochemical examination.
Results: Microscopically, the masses consisted of large neoplastic round cells arranged in sheets. The cells had distinct margins and moderate to large amounts of eosinophilic cytoplasm. Nuclei were large and oval to reniform, with stippled chromatin and 1–3 small nucleoli. There was moderate to marked anisocytosis and anisokaryosis. The cells exhibited widespread and intense vimentin and Iba-1 expression, while CD3 staining was negative. The new skin masses exhibited identical histological features, but with a higher mitotic count.
Conclusions: In humans, it is not yet well established whether this condition represents a neoplasm or an inflammatory response, and scarce information is available about its origin and clinical features in animals. No cases have previously been reported in new world primates.

TRICHOMONOSIS IN WILD BIRDS FROM ENGLAND AND WALES: A RETROSPECTIVE STUDY OF SUBMISSIONS TO THE ANIMAL AND PLANT HEALTH AGENCY (APHA)

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Introduction: Trichomonosis is a parasitic disease of wild birds caused by the protozoa *Trichomonas gallinae*. In England and Wales, wild bird disease surveillance is accomplished mainly through the APHA Diseases of Wildlife Scheme and the Garden Wildlife Health Project. Members of the public and wildlife organizations are encouraged to report wild bird mortalities and suitable cases are further investigated. This is a retrospective study of the range of species and pathological features of trichomonosis in wild birds submitted to the APHA between 2018 and 2022.
Materials and methods: All data were extracted from the APHA reporting system. Birds were initially tested for avian influenza virus. Following a negative result, a detailed post-mortem examination was performed.