could have potential use as a prognostic indicator in dogs with neoplasia.

It is clear from the results of this study that serum haptoglobin concentration is raised in dogs with a variety of diseases and will therefore, have low sensitivity and specificity if it were to be used as the primary diagnostic test for a particular disease. However, the value in assessment of the concentration of this analyte is in its non-specificity, and a raised level is a clear indication that a dog is not healthy. A serum haptoglobin assay should prove to be a valuable diagnostic tool providing evidence of an inflammatory or infectious process and especially useful for monitoring responses to treatment or assessing prognosis, just as monitoring for APF in serum is an extremely valuable marker of disease in human medicine (Scott and others 1999). Further studies are required to determine whether haptoglobin monitoring can be used in a similar way in canine medicine.

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References


Prospective study of the treatment of feline plasmacytic pododermatitis with doxycycline

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FELINE plasmacytic pododermatitis is characterised by soft and frequently painless swellings of multiple footpads. Ulceration and secondary infection, pain, lameness and lymphadenopathy may also occur (Scott and others 2001). The cause and pathogenesis of feline plasmacytic pododermatitis are unknown. Response to immunosuppressive therapy, particularly glucocorticoids at high doses and gold salts, suggests an immune-mediated pathogenesis (Medeau and others 1982, Scott 1984, Koch and others 1996). However, other factors are probably involved, as the disease is localised and also responds to surgical intervention (Guaguer 1992, Yamamura 1998). Feline plasmacytic pododermatitis is diagnosed tentatively by history, clinical examination and cytology, and the diagnosis is confirmed histopathologically (Gross and others 1992, Yager and Wilcock 1994). Immunosuppressive therapy has the potential to cause serious adverse effects, and surgical intervention is very invasive. Tetracyclines have been shown to have immunomodulatory effects in various species (Bellahsene and Forsgren 1985, Gabler and others 1994, Liu and others 1999) and are used to treat immune-mediated skin disease in human (Fivenson and others 1994) and veterinary medicine (White and others 1992, Rothstein and others 1997). This short communication describes a prospective study to evaluate the efficacy of doxycycline monohydrate (Vibramycin; Pfizer Animal Health) in the treatment of plasmacytic pododermatitis.

Skin biopsy specimens from cats sent to the Central Veterinary Diagnostic Laboratory in Melbourne, Australia, over a 24-month period were evaluated. Histopathological criteria for the diagnosis of plasmacytic pododermatitis included a diffuse infiltration of the dermis of the pad by plasma cells, some of which showed eosinophilic globules known as Russell bodies. For all confirmed diagnoses the referring veterinarians were contacted immediately after diagnosis. If cats had clinical signs consistent with plasmacytic pododermatitis and veterinarians were willing to participate in the study, a questionnaire regarding each cat's signalment, history and clinical examination and detailing the study protocol was sent out. The protocol was for the treatment of the condition solely with 25 mg of doxycycline monohydrate given orally every 24 hours for three to four weeks. If, after that time, there was complete remission or no improvement, treatment was discontinued. If there was a partial response, doxycycline monohydrate treatment was continued for a further three to four weeks. Other dermatological signs, previous treatments and responses were recorded. Follow-up was obtained by calling the veterinarians after the re-examinations.

Forty-three cases of feline plasmacytic pododermatitis were diagnosed histopathologically in the time period of the study. Twenty-seven cases were initially included in the study, but in 10 cats insufficient information was obtained, treatment protocols were not followed or re-examination after treatment was not permitted. Seventeen cats completed the prospective study. Eleven cats were domestic shorthair, two...
pads that feel spongy and show cross-hatched striae. Central metatarsal or metacarpal pads are commonly affected (Scott and others 2001). In the present study, 11 of 15 cats had central pad involvement either solely or in conjunction with other pads. Ulceration and secondary infection, pain and lameness may occur (Scott and others 2001). A third of the cats in this study showed ulceration and in more than half of the cats the lesions were painful. Interestingly, only two of the nine cats with painful lesions showed pad ulceration while three cats had ulcerated footpads which were not painful.

The cats in this study were examined by general practitioners before and after therapy, and the questionnaires were therefore completed by many different individuals. The high drop-out rate due to lack of follow-up or insufficient information reflects one of the inherent problems of such multi-centred studies. To keep subjective differences to a minimum, evaluation criteria were largely objective (such as the presence of ulceration). Judgement of pain is, however, subjective and in the context of many different evaluators has to be interpreted with caution. Despite this, the objective data gathered were considered relevant enough by the authors to warrant reporting of the findings.

Treatments for feline pododermatitis recommended in the literature include immunosuppressive therapy (Medleau and others 1982, Taylor and Schmeitzel 1990) and surgical removal of the affected pads (Guaguere 1992, Yamamura 1998). Immunosuppressive agents may cause unwanted adverse effects such as vomiting, diarrhoea, bone marrow suppression and/or secondary infections. Three cats in this study had previously received glucocorticoid therapy but it had had no effect. This may have been due to the anti-inflammatory, rather than the immunosuppressive effect of these glucocorticoids.

A previous study has suggested a possible link between feline pododermatitis and concurrent feline immunodeficiency virus (FIV) infection (Simon 1993). FIV testing was performed on two cats included in this study; one tested positive, the other tested negative.

In the majority of cats with pododermatitis there was a clinical response to 25 mg doxycycline monohydrate given orally every 24 hours. Doxycycline is an antibiotic agent effective against most *Mycoplasma, Chlamydia* and *Rickettsia* species and spirochetes, as well as a number of different Gram-positive and Gram-negative bacteria (Plumb 1991). It also has several effects on the immune system. Chemotaxis of human polymorphonuclear neutrophils was inhibited in vitro (Forsgren and others 1977). Suppression of phagocytosis was reported in humans (Gabler and others 1994) and cattle (Paape and others 1990). In mice, tetracyclines suppressed interleukin 1 secretion of stimulated thymocytes (Ingham 1990). Tetracyclines had a negative effect on lymphocyte proliferation (Ingham and others 1991). Antibody production in mice was suppressed in vitro (Ibrahim and others 1988), but not in vivo (Corrales and others 1989). It is not known whether the efficacy of doxycycline was due to the immunomodulatory effect or the antibiotic effect. However, other antibiotics such as clavulanic acid/amoxycillin or lincomycin were ineffective in some of the cats in this study. Thus, bacteria typically sensitive to these antibiotics are probably not involved in the aetiology of feline pododermatitis. To identify if bacterial organisms are involved or if the disease is immunologically mediated will require further study, although the reported response of pododermatitis to immunosuppressive therapy suggests immune-mediated disease.

Three of the cats with a partial response to doxycycline and no further therapy underwent spontaneous remission. Thus, it is possible that some of the complete and partial responses were spontaneous rather than due to the effect of therapy with doxycycline. However, in many of the cats, a response...
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was seen immediately after starting therapy with doxycycline, which may be considered evidence for a relationship between drug therapy and the improvement of clinical signs. Spontaneous remission has been previously reported (Scott 1984). However, the number of cats showing spontaneous remission is small and more studies are needed to evaluate the potential and extent of spontaneous remission as well as aetiological factors in feline plasmacytoid pododermatitis.

The results of this study indicate that doxycycline for the treatment of plasmacytoid pododermatitis is effective and well tolerated and is thus recommended for cats with histopathologically confirmed plasmacytoid pododermatitis as an initial treatment option.

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Intravaginal fibroma in a sheep

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The prevalence of tumours in sheep is very low; a survey in the UK found only 24 tumours per million sheep slaughtered (Anderson and others 1969). Some tumours, such as sheep pulmonary adenomatosis and enzootic nasal tumours are caused by viral infections. Studies in the UK and South Africa have shown that sheep pulmonary adenomatosis accounts for almost 70% of all sheep tumours, while the prevalence of enzootic nasal tumours is not known (Sharp and de las Heras 2000). Other common tumours in sheep are interstitial adenocarcinoma, lymphosarcoma and hepatocellular carcinoma (Hamir 1985, Head 1990). Less common, and not always listed as neoplasmas, are rumen papillomas and jaw fibrosarcomas (McCrea and Head 1978, 1981). The number of fibromas reported in sheep is very limited. In two surveys extended over several years, one thyroid fibroma and only one fibroleiomysoma of the vagina were found (Ross 1983). A fibroma of the vagina or uterine cervix has never been reported before. This short communication describes an unusual case of a vaginal fibroma in a pregnant sheep, which caused dystocia and subsequent maternal and fetal death.

A 12-year-old crossbred Texel ewe that had given birth to 19 lambs in 11 parturitions was pregnant for the 12th time. At 136 days of pregnancy, the ewe started straining and one day later a red ‘balloon’ was hanging out of its vulva. After the prolapsed tissue was reposited, the sheep continued to strain and was presented at Ghent University with prolapse of the vagina or bladder.

At the university, the ewe continued to strain from time to time but was alert and had no fever (body temperature 38.5°C). Respiratory and pulse rates were somewhat increased; the respiratory rate was greater than 20 breaths per minute (reference range 12 to 20) and the pulse rate was greater than 80 beats per minute (reference range 70 to 80).

The mucous membranes were pink. Transabdominal ultrasound scanning (6 MHz) revealed an intact bladder, and a uterus with caruncles containing a lamb and intact fetal membranes. Vaginal examination by means of a speculum showed a hyperaemic mucous membrane. The cervix was dilated by 1 cm, and parts of the fetal front legs and nose could be seen. At the ventral side of the birth canal, just caudal to the cervix, a reddish, nodular, exophytic structure was observed. The birth canal of the ewe was spacious and it was possible to palpate the structure at the ventral side of the vagina, just in front of the pectineal pubis. The tumour-like structure felt solid and was the size of a fist. The structure was biopsied by means of a biopsy needle and the tissue was fixed in 10 per cent formalin solution. It was embedded in paraffin wax, sectioned at 10 μm and stained with haematoxylin and eosin and von Gieson. The sample consisted of tissue from a vaginal exophytic, nodular, highly cellular, well-differentiated, non-encapsulated and non-invasively growing neoplastic process.

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