CLINICAL ARTICLE

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ACUTE PUERPERAL METRITIS IN A DROMEDARY CAMEL (CAMELUS DROMEDARIUS)

Z.I. Qureshi, G. Muhammad, M. Athar and L.A. Lodhi
Faculty of Veterinary Science, University of Agriculture, Faisalabad-38040, Pakistan

ABSTRACT

A case of acute puerperal metritis in a dromedary camel developing in the wake of dystokia corrected under unhygienic condition is described. The condition was associated with fever, foul-smelling purulent uterine discharge and pasty faeces. Pretreatment haematologic examination indicated leukocytosis (22.05 x $10^3/mm^3$), owing to monocytosis (24%). Microbiological examination of uterine discharge revealed a mixed bacterial infection with *E. coli*, Bacillus and streptococci which were all sensitive to norfloxacin, gentamicin, and amoxycillin. Faecal examination indicated a mixed infection with nematodes. Intrauterine administration of oxytetracycline with parenteral administration of amoxycillin, dipyrone and oral administration of oxfendazole successfully treated the case. The Principles of treatment of acute puerperal metritis have been discussed.

Key Words: Puerperal metritis, treatment, camel.

Case History

An 8-years old she dromedary camel, weighing about 500 Kg was presented at the outdoor clinic of the Department of Animal Reproduction, University of Agriculture, Faisalabad, for the treatment of anorexia and copious foul smelling purulent vaginal discharge. Anamnesis revealed that four days ago the dam confronted a calving difficulty due to foetal malpresentation and a dead calf was expelled through forced extraction by the owner. During this process, dust had been applied for the sake of achieving a firm grip of foetal parts protruding from the genitalia of the dam.

Clinical and laboratory findings

Clinical examination revealed fever (rectal temperature 104 °F at 10 AM), a foul smelling purulent discharge from the genitalia and pasty faeces. Per-vaginal examination of the reproductive tract revealed lacerations of the vaginal wall, and the presence of placental contents. The cervix was partially opened to allow passage of only three fingers. Samples of venous blood, faeces and uterine discharge were collected for haematological profiles, gastrointestinal parasitism and microbiological examination, respectively. The bacterial growth was tested for antibiotic susceptibility to 12 antibiotics as per procedure recommended by the National Committee for Clinical Laboratory Standards (Anonymous, 1994).

Leukocytosis, owing to a marked increase in monocytes was the principal haematological alteration (Table 1). The subject was negative for haemoparasites (*Trypanosoma evansi, Dipetalonema evansi*, etc.) Microbiological examination of uterine discharge revealed a mixed infection of *E. coli*, Bacillus, and streptococci. All of these isolates were sensitive to oxytetracycline, norfloxacin, gentamicin, and amoxycillin but variably resistant to other 8 antibiotics. Faecal examination indicated a mixed infection with nematodes.

Treatment:

The following treatment was instituted starting from the date of presentation:

i. Inj. Oxytera-10 (Oxytetracycline 100 mg/ml, in a polyvinylpyrolidone base, Meriel Pakistan Ltd.) 20 ml + 50 mL distilled water intrauterine.
ii. Inj. Vetrimoxin-LA (Amoxycillin trihydrate 50%, Sanofi Animal Health) 50 ml, intramuscular (IM).
iii. Inj. Dipyrone (S.J. & G. Pharmaceutical Pak. Ltd.) 25 ml, IM.
Iv. Oxafax Suspension (Oxfendazole 2.265%, Glaxo Wellcome Pakistan) 100 ml orally.

Intrauterine treatment and Inj. Dipyrone were repeated daily for 5 and 3 days, respectively, whereas Vetrimoxin-LA was repeated twice at 48-hour intervals. On the second day of treatment, body temperature was 103 °F and the animal had started partaking of green fodder. The temperature gradually receded to normal value over the next 3 days. Vaginal discharge abated after treatment of 3 days.

DISCUSSION

Reports on the occurrence of puerperal metritis in dromedary camel are extremely sparse and the case under discussion seems to be the first report on the occurrence of acute septic puerperal metritis in this species. Postpartum uterine infections vary in severity from mild to toxic, and may delay conception or lead to death of the affected animals. A number of factors can influence the severity and prevalence of uterine infection. These include species, pathogenicity of the causative organisms, cellular and immunological defenses, dietary management of the affected animals, and environmental sanitation (Younguist and Bierschwal, 1985; Gruert, 1986). There is a high correlation between dystokia, placental retention and metritis. Studies on bovine postpartum infections have shown that 80% cases of puerperal or septic metritis were associated with dystokia or retained foetal membranes (Youngquist and Brann, 1986). In the dromedary case being reported here also, there was history of dystokia due to foetal malpresentation, which had been dealt with by owner under unhygienic conditions.

The potentially pathogenic organisms often associated with bovine post-parturient uterine infections include *Staphlococcus aureus*, α and β haemolytic streptococci and non-haemolytic streptococci. Other organisms are usually rapidly eliminated after 10 days post-partum. However, some may progress to produce metritis. The most significant organism found to invade the post-partum uterus and produce severe symptoms is *Corynebacterium pyogenes* (Olson *et al*., 1986). Microorganisms (*E. coli*, Bacillus and streptococci) isolated from the uterine samples in the present report probability had their origin in the dust applied at the time of handling dystokia. Information on the type of organisms associated with puerperal metritis in camel is non-existent.

The principles of treatment of bovine metritis are well established (Barragry, 1994). The antibiotic therapy instituted in the present case was based on these principles. The antibiotics prescribed for the treatment of uterine infections must be active against the primary uterine pathogens especially C. pyogenes and gram-negative anaerobes, it must reach concentration at the site of infection above the minimum inhibitory concentration; it must be active in the presence of organic debris and in the anaerobic environment of the post-partum bovine uterus (Laing *et al*., 1988; Barragry, 1994). Microorganisms associated with puerperal metritis produce penicillinases which inhibit the efficacy of penicillin for post-partum uterine infections. Oxytetracycline is a broad spectrum antibiotic active against many of microorganisms that infect the bovine uterus. Although the activity of oxytetracycline is slightly reduced by organic debris and the absence of oxygen but still it is considered the drug of choice for early post-partum infections (Paisley *et al*., 1986). Some prepartions (e.g., those containing polyvinyl pyrolidone) should be used. Sulfonamides are inactivated by organic debris and are a poor choice for intra-uterine therapy. The aminoglycoside antibiotics are not active in anaerobic environment and are thus not indicated in the treatment of post-partum infections. In case of systemic illness, alongwith oxytetracycline, parenteral administration of penicillin is recommended because it increases the affinity of penicillin to be absorbed by deeper layers of the uterus and helps in prompt recovery.

Table 1: Pre-treatment haematological profiles of a camel suffering from acute puerperal metritis.

Parameters	Observed values	Normal values*
Erythrocyte sedimentation rate (mm/1st hr)	03	1.38
Packed cell volume (%)	20	29.50
Haemoglobin (g/dL)	9.2	10.77
Total erythrocyte count (x 10^6/mm^3)	5.29	7.02
Total leukocyte count (x 10^6/mm^3)	22.05	10.64
Differential leukocyte count (%)		
Neutrophils	39	42.05
Lymphocytes	27	48.51
Monocytes	24	1.17
Eosinophils	5	8.23
Basophils	0	0.04

* Source: Zia-ur-Rahman *et al*. (1994); Gahlot (2000).

REFERENCES

Anonymous. 1994. Performance Standards for Antimicrobial Disc Susceptibility Tests. 5th Ed. Approved Standard M2-A5. National Committee for Clinical Laboratory Standards. Villanova. Pa. USA.

Barragry. T.B.. 1994. Veterinary Drug Therapy. Lea and Febiger. Philadelphia.

Gahlot. T.K.. 2000. Surgery of the dromedary camel. In Gahlot. T.K. (ed.): Selected Topics on Camelids. The Camelid Publishers. Bikaner. India. p. 303.

Grunert. E.. 1986. Etiology and pathogenesis of retained bovine placenta. In Morrow. D.A.: Current Therapy in Theriogenology II. W.B. Saunders Co.. Phladelphia. pp: 237-242.

Laing. J.A.. W.J.B. Morgan and W.C. Wanger. 1988. Fertility and Infertility in Veterinary Practice. 4th Ed. Bailliere Tindall. Oxford. UK.

Olson. J.D.. K.D. Bretzlaff. R.G. Mortimer and L. Ball. 1986. The metritis-pyometra complex. In Morrow. D.A.: Current Therapy in Theriogenology II. W.B. Saunders Co.. Philadelphia. Pp. 227-236.

Paisley. L.G.. W.D. Mickelsen and P.B. Anderosn. 1986. Mechanism and therapy for retained foetal membrances and uterine infections of cows: A review. Theriogenology. 25: 353-381.

Youngquist. R.S. and C.J. Bierschwal. 1985. Clinical management of reproductive problems in diary cows. J. Dairy Sci.. 68: 2817-2826.

Youngqust. R.S. and W.F. Brann. 1986. Management of infertility in the cow. J. Am. Vet. Med. Assoc.. 109: 411-414.

Zia-ur-Rahman. M.M. Hassan. A. Ahmed and I.U. Haq. 1994. Haematochemcial values of young male and female one-humped Pakistani camel Pak. Vet. J.. 14(2): 73-76.