

PREVALENCE, TREATMENT AND MANAGEMENT OF HEALTH CONDITIONS IN PET RABBITS PRESENTED TO THE VETERINARY TEACHING HOSPITAL (VTH), UNIVERSITY OF PERADENIYA

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SUMMARY: Forty five pet rabbits of different breeds with various clinical conditions were presented to the VTH from January 2014 to March 2016 reflecting an emerging trend in companion animal ownership and health concerns. Of these cases, Psoroptic mange was the commonest disease condition while traumatic injuries (26.7%) including dog bite wounds, fractures, eye conditions were regularly encountered. Chemical trauma and infectious diseases (17.8%) namely, ulcerative pododermatitis, respiratory tract and urinary tract infections; miscellaneous cases such as floppy rabbit syndrome, heat stress, nutritional deficiency and prolapsed vagina were also presented. The objective of this communication is to make the veterinary practitioners aware of the common health conditions encountered in pet rabbits and how those were treated and managed.

BACKGROUND

Domestic rabbits are descended from the European rabbit, which belongs to the order *Lagomorpha*. Numerous breeds of domestic rabbits have been developed with various characteristics. Common rabbit breeds in Sri Lanka included New Zealand white, Flemish giant, Californian white and Chinchilla. Pet rabbits are mostly cross bred of these original breeds. Forty five pet rabbits of different breeds (pure and cross bred) with various clinical complications presented to the VTH from January 2014 to March 2016 are discussed here.

Psoroptic mange is a common mite infestation of rabbits caused by *Psoroptes cuniculi*. This condition was encountered in 19 out of 45 rabbits and clinical presentation of most rabbits was otitis externa with crusty exudates that form within the ear canal and extend up to the pinna and also the skin form on the nose (Figure 1), paws and the perineal region with extremely pruritic lesions. Diagnosis was confirmed by microscopic examination of the exudates; mites were also visible to the naked eye. These were treated with Ivermectin (0.4mg/kg) subcutaneously and followed-up after ten to twelve days. All the cases responded well to this treatment.

Among the cases presented 20% were traumatic injuries mostly due to dog bites and management related injuries. First case was an extensive infected laceration due to a dog bite at the base of the left ear up to the neck (Figure 2). The wound was cleaned with normal saline, dressed with Povidone Iodine solution and enrofloxacin (10mg/kg) sid SC was administered. There was evidence of healing of the wound with daily treatment but it succumbed to the condition after three days. The other rabbit aged five months was presented with a dog bite of the left hind limb,

where the tibia fibula, meta tarsal and digital bones with the associated soft tissue were lost resulting in an avulsion. Patient was stabilized with intravenous fluid (0.9% saline + 10% dextrose) and analgesics (meloxicam 0.2mg/kg) PO. Amputation of the left hind limb was performed under general anaesthesia (GA); induction with ketamine HCl (35mg/kg) and xylazine HCl (5mg/kg) IM. Enrofloxacin (10mg/kg) was administered to prevent bacterial infections. Even though the patient showed difficulty in hopping there was uneventful and complete recovery.

Four rabbits were presented with management/handling issues causing fractures and one with epistaxis. A cross bred rabbit with closed complete right tibia-fibula fracture was treated using intra-medullary pin insertion. Pin was removed fourteen days later and the patient showed a good response. A five month old rabbit with complete closed mid tibia-fibula fracture was treated by external coaptation using plaster of paris (POP), under GA. Owners were advised to reduce movements and the POP was removed ten days later. Another three- year old rabbit was reported with epistaxis after falling down from a height, and was managed using cold fomentation, application of one drop of Oxymetazoline® 3 times a day for 3 days into each nostril which resulted in complete recovery. A 6- month old rabbit presented paraplegic after fallen down while carrying by the owner. Pain sensation was present in the caudal region of the body, but no fractures were detected in the radiograph. Pain management was done using meloxicam orally (0.2mg/kg sid) for five days and the owner was advised to do physiotherapy (hot fomentation) but had a poor prognosis.

Two rabbits with hypersensitivity reaction due to skin exposure to Lysol® were presented and treated with dexamethasone (2mg/ kg) and chlorpheniramine maleate



Figure 1: Psoroptic mange - skin form



Figure 2: Infected laceration



Figure 3: Abscess in the eye



Figure 4: Ulcerative pododermatitis



Figure 5: Sludgy urine



Figure 6: Forward head tilt



Figure 7: Abscess below the mandible

(0.4mg/kg) IM after profusely cleansing off the chemical with water. Traumatic injuries due to unknown causes were also reported, such as paraplegia and scrotal laceration.

Ocular conditions of rabbits were also encountered. A rabbit with an eye abscess (Figure 3) was treated with enucleation under GA through lateral canthotomy followed by removal of the globe and tarsorrhaphy. Corneal opacity and conjunctivitis in an adult rabbit were treated with ciprofloxacin (1 drop bid) and betamethasone (1 drop tid) eye drops for fourteen days which resulted in complete recovery. A rabbit with corneal ulcer was treated with Keterolac® (1 drop tid) and ciprofloxacin (1 drop bid) eye drops for fourteen days but the response was unsatisfactory and thus enucleation had to be performed.

Two cases with ulcerative pododermatitis were reported (Figure 4). They were anorexic and the lesions were manifested as ulcerated infected areas of skin/ abscess on the caudal aspect of the tarsus and metatarsus. The full blood counts were unremarkable. Abscess at the hock was drained

off and a bandage was applied after applying Soframycin® ointment and in addition enrofloxacin and meloxicam were also administered SC. Owner was advised to change the bandage regularly and also to apply Soframycin® ointment and change the bedding material (hay) regularly.

One rabbit was presented with pododermatitis with concomitant psoroptic mange and was treated with ivermectin and enrofloxacin SC which resulted in good recovery.

Three rabbits were presented with respiratory tract infection. The clinical signs included loss of appetite, clear nasal discharges, shallow rapid breathing and wheezing. Treatment with Cotrimoxazole® (30mg/kg bid) and dexamethasone (1mg/kg) for five days gave a positive response, and the treatment protocol was similar to that of protocol proposed by Longley, 2010. Nasal swab of one of the rabbits was positive for *Pseudomonas* and *Staphylococcus*. The antibiotic susceptibility test indicated that the bacteria were susceptible to enrofloxacin, cotrimoxazole and ciprofloxacin.

A rabbit with a complaint of dysuria for four days, dribbling of urine, abdominal pain and reduced appetite was presented. Urinalysis revealed high calcium carbonate crystaluria, pyuria, haematuria and pH of 9 while lateral abdominal radiograph revealed urine filled distended bladder with radio opaque sediment. The condition was diagnosed as sludgy urine and cystitis (Figure 5). Urine was removed from the bladder manually under sedation (diazepam 1 mg/ kg) IV and treated with enrofloxacin (10mg/kg SC sid), Furosemide® (1 mg/ kg IV sid), meloxicam (0.2 mg/ kg SC sid) and vitamin C (25 mg PO sid) (Carpenter, 2005) for three days. The owner was advised to supply *ad libitum* drinking water and change the diet to fruits and vegetables with high water content (Kestenman, 2016). The patient responded well to the treatment.

Two similar cases were presented with forward head tilt, inability to lift the head or move the fore limbs, mild dehydration and reduced appetite. Based on the clinical signs, the condition was tentatively diagnosed as floppy rabbit syndrome (Figure 6) and SC fluid therapy, enrofloxacin (10mg/kg) and dexamethasone (1mg/kg) IM were administered. Ciprofloxacin (10 mg/ kg) and dexamethasone were prescribed orally for two more days. Both rabbits recovered completely.

Two cases of abscesses were present with white thick creamy content; both were present below the mandible (Figure 7). The culture was positive for *Pasteurella*. Abscesses were surgically drained under GA and enrofloxacin SC was given as antibiotic therapy. It has been reported that chronic suppuration is common in rabbits and slow growing, well-encapsulated, relatively painless abscesses develop readily. *Pasteurella multocida* has been frequently isolated from these abscesses (Frances Harcourt-Brown, 2002).

There were other cases reported such as vaginal prolapse (which succumbed to the condition few

minutes after admission) reproductive failure due to malnutrition which was diagnosed based on the condition of the body. The condition of two rabbits presented with reduced appetite could not be diagnosed while another adult rabbit was diagnosed having heat stress which presented with respiratory distress, elevated rectal temperature (106°F) and sudden collapse. It recovered after giving intravenous fluid and keeping in a quiet air conditioned room.

DISCUSSION AND CLINICAL SIGNIFICANCE

All rabbits infested with *psoroptes cuniculi* were similar to typical psoroptic mange cases reported in literature (Frances Harcourt-Brown, 2002). Information on the life cycle of the parasite is important to decide the treatment plan; eggs hatch after four days, but the mite can survive in the environment up to 21 days (medirabbit.com, 2016; Urquhart, 1996). Therefore, follow-ups are necessary. Owners should be advised not to remove the crust as it may cause severe pain and may also leads to wounds. This infestation can rapidly spread among rabbits (Frances Harcourt-Brown, 2002). Therefore all the rabbits of the group should be closely examined when one is infested.

Table 1: Summary of the health conditions in rabbits reported in this study

Condition	Number of cases	Percentage
Psoroptic mange	19/45	42.22
Ulcerative pododermatitis	2/45	4.44
Traumatic injuries	9/45	20.00
Ocular conditions	3/45	6.67
Abscesses	2/45	4.44
Respiratory tract infections	3/45	6.67
Floppy rabbit syndrome	2/45	4.44
Sludgy urine	1/45	2.22
Heat stress	1/45	2.22
Nutritional deficiency	1/45	2.22
Prolapsed vagina	1/45	2.22
Undiagnosed	2/45	4.44

Ulcerative pododermatitis is a very painful and serious condition which is difficult to cure once sets in. It has been recognized as a secondary disease to physical, conformational or husbandry problem (Frances Harcourt-Brown, 2002). The most common bacteria isolated from these lesions are *Staphylococcus aureus* and *Pasteurella multocida* (Frances Harcourt-Brown, 2002).

Floppy rabbit syndrome is a condition causing generalised muscular weakness. Aetiology of this disease is not known although several possibilities exist, such as hypokalaemia, nutritional muscular dystrophy, myasthenia gravis and spinal cord disease. (Esther van Praag, medirabbit.com, 2016). A feature of this condition is that the recovery can take place with supportive care.

There is a high probability of rabbits acquiring psoriatic mange and subjected to traumatic injuries similar to the reports by Okerman, (1994). Therefore, when rearing rabbits, owners should take measures to reduce traumatic injuries such as constructing cages with a suitable floor which facilitate drainage but prevent accidental trapping of limbs; and also to provide them with proper nutrition. Mixed infection was reported only in a one case where the rabbit was having both psoriatic mange and ulcerative pododermatitis. As rabbits are animals that are prone to stress easily and thus gentle handling with minimum stress is very important in disease diagnosis and treating by the veterinarians and owners.

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