

SURGICAL MANAGEMENT OF MAMMARY TUMOUR IN A FEMALE DOG

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ABSTRACT

Mammary gland tumours are the most common tumours in female dogs. A non-descript nine year old female dog was presented with an enlarged left caudal abdominal mammary gland. Clinical examination revealed that it was a mammary tumour. The entire affected gland was successfully excised by simple mastectomy under general anaesthesia wherein ketamine and atropine were employed as anaesthetic and pre-medicant, respectively. A course of antibiotics and analgesics were given during postoperative period. The animal had an uneventful recovery.

Keywords: Mammary gland, female dog, tumour, mastectomy

INTRODUCTION

Fifty to 70% of neoplasms in female dogs affect the mammary glands and the incidence rate is higher in dogs above eight years. Though any mammary gland can be affected, occurrence is more in the caudal two pairs (caudal abdominal and inguinal). Ovarian hormones oestrogen and progesterone play a significant role in the occurrence of mammary neoplasms in female dogs. Ovariohysterectomy prior to the first oestrus has been shown to reduce

the incidence of tumours below 0.05% (Slatter, 2003).

CASE HISTORY AND OBSERVATION

A non-descript nine year old female dog with an enlarged left caudal abdominal mammary gland (Fig.1) having a circumference of 18 cm was presented at Government Veterinary Hospital, Kenichira, Wayanad District, Kerala. The swelling was noticed by the owner around six months ago which was expanding at a fairly steady rate. The affected mammary gland was easily movable and was clearly demarcated from the underlying abdominal muscle and fascia. The affected gland extended from umbilical to inguinal region and even to right side of median plane. There was no apparent enlargement of any other mammary gland. Skin covering the ventral surface of the gland was ulcerated owing to frequent rubbing on ground. The condition was clinically diagnosed as mammary neoplasm.

TREATMENT AND DISCUSSION

The animal was pre-medicated with atropine sulphate at the rate of 0.045 mg/kg b. wt intramuscularly. General anaesthesia was provided by the combination of ketamine and diazepam. Ketamine was administered at the rate of 1 mg/kg b. wt.

intramuscularly and diazepam at the rate of 0.02 mg/kg b. wt. intravenously to counteract side effect of ketamine. The animal was restrained on left lateral recumbency and surgery was performed with aseptic precautions. 2% Lignocaine hydrochloride was employed for local infiltration anaesthesia around the base of the affected mammary gland. The entire left caudal abdominal mammary gland was excised by simple mastectomy (Venugopalan, 2009). Skin incision was put around the base of the gland. Blunt dissection of the entire gland along with overlying skin was carried out and the entire gland was excised and removed. Muscle and subcutis was sutured using 2/0 catgut in a horizontal mattress pattern. Excess skin was trimmed and then sutured with horizontal mattress sutures using 3-0 nylon follow with the dressing applied (Fig. 2). Combination of Ceftriaxone and Tazobactem was administered once daily intramuscularly at the rate of 20 mg/kg b. wt. for five days, Meloxicalm was administered once daily intramuscularly at the rate of 0.5 mg/kg b. wt. intramuscularly for five days. The animal had an uneventful recovery and skin sutures were removed on the tenth post-operative day. The excised mammary gland was a well-encapsulated mass which was easily distinguishable and separable from the surrounding tissues. The mass had a firm consistency and had a weight of 900 g. Transverse section of excised gland revealed a thick capsule surrounding white to yellowish mass. Histopathological examination of the

tumour tissue would have been useful to identify the type of tumour.

SUMMARY

Surgical management of a field case of mammary tumour in a female dog is reported in this article.



Fig. 1. Mammary tumour before surgery



Fig. 2. Surgical site after mammary tumour excision

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SUCCESSFUL CLINICAL MANAGEMENT OF COMBINED TOXICITY OF CYPERMETHRIN AND FIPRONIL IN WHITE PEA FOWLS - A CASE REPORT

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ABSTRACT

Cypermethrin and fipronil are widely used insecticides belonging to pyrethroid and phenyl pyrazole group, respectively. Toxicity in cats and dogs as well as humans has been reported earlier but rarely in birds. This is the first report of combined toxicity of cypermethrin and fipronil in white pea fowls (*Pavo cristatus*) and its successful clinical management.

Keywords: White pea fowl, cypermethrin, fipronil

INTRODUCTION

Cypermethrin is a synthetic pyrethroid widely used as insecticide due to its high potency, rapid metabolism, less tissue accumulation, low environmental persistence and low toxicity in mammalian species (Das and Parajuli, 2006). Cypermethrin is a fat soluble compound and undergo rapid excretion after oral or dermal exposure (Hansen *et al.*, 1994). Pyrethroids alter the normal function of the insect nervous system by slowing the opening of voltage gated sodium channels.

The action on the nervous system results in the clinical signs encountered in pyrethroid toxicity (Richardson, 2000).

Fipronil is a broad spectrum insecticide that specifically targets the gamma amino butyric acid receptor (GABA receptor) and glutamate gated chloride channel resulting in central nervous system toxicity (Hosie *et al.*, 1995). Fipronil has higher toxicity to insects than mammals due to its greater potency in blocking insect isoform of GABA gated chloride channels than their mammalian counterpart (Hainzl *et al.*, 1998).

CASE HISTORY AND OBSERVATIONS

Two white peacocks and a white peahen maintained in the open enclosure of Zoological garden, Thiruvananthapuram were seen infested with tick with more intensity on the head. The birds were dipped in cypermethrin (0.15%, 15mL in 10L of water) solution up to the neck and fipronil (2.5 mg/ml, 80mL) was sprayed profusely on to the head and neck after closing the eyes and nostrils with cotton. The birds did not show any unusual signs

and all the ectoparasites on the body died. However, the birds became re-infested within three days and the same procedure was repeated on the fifth day and shifted from the enclosure. The birds developed drooping, incoordination, tremors and swaying of head and neck after one hour. Absorption of chemicals might have been enhanced by the wounds inflicted by the ectoparasites.

TREATMENT AND DISCUSSION

All the three birds were treated with Midazolam (Mezolam 1mL, 5mg/ml, Neon laboratories Limited) at 0.2 mg total dose, Dexamethasone 0.5ml (Dexona-vet 5mL, 4mg/ml, Zydu Animal Health) and B-complex vitamin 1ml (Polybion 2 ml, Merk Limited) as intra-muscular injections and Health up syrup (Vetoquinol pets) 2.5 ml and egg-white 15 ml orally. The birds were also given supportive oxygen therapy.



Fig. 1. Ticks on the head of pea fowl



Fig. 2. Engorged ticks on the neck of white pea fowl

The intensity of symptoms was higher during third and fourth hours and then gradually decreased and completely ceased within 12 hours.

Dermal absorption or ingestion of cypermethrin usually causes moderate toxicity in animals. Symptoms of dermal exposure include tingling, incoordination, seizures and may even result in death (Westcott and Reichle, 1987).

The potential for fipronil to induce specific neurotoxicity in target and non-target species has been reported. Topically applied fipronil is sequestered by sebaceous glands and is gradually released over a two month period (Dryden *et al.*, 2000). Notable species differences have been found in transdermal penetration of fipronil (Birckel *et al.*, 1996). The application of fipronil to damaged or inflamed skin can increase the transdermal penetration and thus can result in systemic toxicity.

SUMMARY

The absence of sebaceous glands and comparatively thin skin can result in increased transdermal absorption of fipronil and cypermethrin in birds. The neurological signs due to combined toxicity of fipronil and cypermethrin can be managed successfully with symptomatic treatment.

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