MAST CELL SARCOMA IN A DOG

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Mast Cell Tumors (MCT) are the cancerous proliferation of Mast cells. The cause of the tumour is unknown but a viral etiology is speculated. MCTs are found on the skin, spleen, liver, bone marrow or on any part of the body. The tumors are usually single, or appear as multiple nodules. Some nodules occasionally enlarge and then regress in size on their own, due to swelling within the tumor itself, which is suggestive of MCT and are unpredictable in their behaviour *(Patnaik et al, 1984).* Increased risk for MCT development was found in spayed females of boxers, Labrador retrievers, pugs, golden retrievers, the mastiff and terrier respectively *(White et al 2011)*

Apart from being a tumour, secondary damage by MCT is by the systemic effect of the chemicals they produce like histamine, heparin, serotonin, prostaglandins and proteolytic enzymes, excessive production of which cause allergic symptoms, internal bleeding and gastric ulcers *(Hottendorf and Nielsen 1958).*

MCTs are diagnosed by aspiration and cytology. CBC may reveal elevated mast cell count and low/elevated TLC. The average age of occurrence being 8 to 10 years in dogs. *(Bostock,1973)* Apart from cuteneous swellings patients may also show loss of apatite, vomition, diarrhoea, abdominal pain, dark feces etc. Abdominal ultrasound or radiographs may be necessary to determine the likelihood of metastasis of malignant mast cells. *(Nielsen and Cole ,1958)* Review of literature indicates that the incidence of benign MCT is quite high, but very few reports are available from India, hence a case of malignant Mast Cell Sarcoma in a Labrador bitch is reported.

Case history and diagnosis

A ten year old, female Labrador was presented with a history of inapetance, frequent bloody diarrhoea, occasional vomition sometimes blood mixed, and having several peanut to lemon sized swellings over the ventral and lateral aspect of thoraco- abdominal region (fig-1). On examination generalised erythema of the skin was noticed especially around the nodular swelling. Some of the nodules showed oozing, ulceration or healing with cicatrix. The swellings on aspiration showed thick caseated purulent material. The contents when examined cytologically indicated Mast cell Sarcoma. Hence it was decided to completely excise all the individual tumour mass in total.

Treatment

Pre-operaative The dog was premedicated with atropine Sulphate 0.6 mg sc,(Atpin-Harron labs, Baroda) and Triflupromazine @ 1 mg/kg, i/v., (Siquil- Zydus AHL, Ahmedabad) and the ventro-lateral abdomen was prepared and draped for aseptic surgery. Anaesthesia was induced with Thiopentone sodium @ 12.5 mg/kg i/v (Thiosol-Neon labs, Mumbai) and maintained with halothane 2% (Fluothane-ACCI,Chennai) in oxygen. The animal was restrained on dorsal recumbency.

Surgical procedure A long incision was made from xiphoid to pubis and most of the swellings were excised entirely through this incision. However, swellings which could not be accessed through this incision, separate incisions were made or a perpendicular incision was made to join this main incision (fig-2). Some of the nodules required separate incision for their excision. It was ensured that majority of the nodular swellings was excised entirely along with surrounding healthy tissues. It was noticed that the nodules were loosely situated in the subcutaneous tissue and no adhesions were noticed to the underlying muscular tissues hence making the excisions comparatively easier, however some of the nodules were firmly adherent to the skin, hence requiring a part of the skin to be excised along with the tumor. Cromic catgut 1-0 (Ethicon, Johnson & Johnson) was used to suture the subcuticular tissues and polyamide 1-0, (Trulon, Sutures india, Bangalore) was used to suture the skin. A few very small swellings which were far away from

the main line of incision were left intact which were to be subjected to chemotherapy.

Fig-1: Photograph showing nodular eruptions due to mast cell Sarcoma in a dog

Fig-2: Photograph showing sutured skin after excision of mast cell Sarcoma nodules.

Post operative care

Wound was dressed in a routine manner, many tailed bandage was applied and the dressings were changed daily. Gentamycin 80 mg, sc,(Gentamycin-TTK health care, Chennai), Meloxicam 20 mg sc (Melonex, Intas pharmaceutical, Ahmedabad) and Prednesolone acetate 20 mg sc, (Pridnesolone-Intervet india, Pune) was given daily for a week. The wound healed uneventfully and the skin sutures were removed on 8th post operative day.

Six doses of Vincrystine sulphate @ 0.025 mg/kg (Cytocrystin-TNDPL, Chennai) was given at 15 day interval over a period of next three months. During this period of chemotherapy regime the patient was orally supplemented with liver extracts and multivitamins.

Results

The patient recovered uneventfully. The apatite improved and restored to normalcy over a period of one month. The untended small nodules showed a gradual but complete regression and over a period of one year follow up, did not show any signs of recurrence.

Discussion

MCTs cause more harm by systemic effect of excessive chemicals secreted by them *(Hottendorf and Nielsen 1958).* In this case also the pet owner was more concerned about the blood mixed vomition and diarrhoea rather than the multiple nodules on the skin which were somewhat covered by the hair. Complete surgical removal of the tumour mass and follow up with chemotherapy turned out to be the most effective treatment in this case as proposed by other authors *(Bostock,1973)*

Summary

A successful treatment of mast cell sarcoma in a ten year old, female Labrador dog by surgical excision and chemotherapy is reported.

References:

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