Rhabdomyosarcoma in a Mongrel Dog

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Rhabdomyosarcomas are the most common neoplasms arising from skeletal muscles, but still represent less than 1% of all spontaneous neoplasms in domestic animals (Hulland, 1990). They grow rapidly and show infiltration, metastasis and transplantation (Vegad, 2007). Canine rhabdomyosarcomas have been reported as occurring in the pharynx, larynx, gingiva, urethra, bladder, cardiac muscle, greater omentum, trachea and tongue but primary rhabdomyosarcoma of limb muscles were seen rare (Hulland, 1990). The neoplasm can occur in almost all ages, however it is frequent at around 2-3 years. Present study deals with rhabdomyosarcoma encountered in a four year-old mongrel dog.

Case History and Observations

A four year old male mongrel dog was presented to Veterinary Polyclinic of College of Veterinary Science & Animal Husbandry, Kumarganj with a swelling on the left hind limb (Fig 1). The growth was noticed for the last eight months. Due to the swelling, there was lameness, restlessness and dog had reduced appetite. Clinical examination revealed a large single, pedunculated growth which was firm in consistency on the left hind limb. The rectal temperature was 102°F, respiratory rate was 28 breaths/min and the heart rate was 90 beats/min.

Treatment and Discussion

The dog was prepared for, aseptic surgery on routine basis. General anesthesia was induced by xylazine @ 2.5 mg/kg i/m ketamine @ 5 mg/kg i/m and diazepam @ 0.25 mg/kg i/m following premedication with atropine @ 0.04 mg/kg i/m. The anesthesia was maintained by diazepam @ 0.25 mg/kg i/v during operation. The tumor (Fig 2) was removed through a blunt dissection after an elliptical skin incision on its base. The surgical wound was closed a routine manner. The wound was protected. Parenteral analgesic meloxicam @ 0.4 mg/kg i/m for three days and antibiotic therapy with amoxicillin @ 25 mg/kg was followed for five days postoperatively. Skin sutures were removed on the 10th post-operative day. The case was followed for fourteen months and no recurrence was observed.

Fig 1. Dog (mongrel) with rhabdomyosarcoma

Fig 2. Rhabdomyosarcoma after surgical removal

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The Removed mass was of 250 g weight. It was hard and presented a yellowish red and moist cut section. The cut mass was fixed in 10% formaline and processed as per routine procedures. It was stained with Hematoxylin and Eosin (H&E stain) and Masson’s trichrome stain.

Microscopic examination of the tissue stained with H&E revealed numerous neoplastic cells of different sizes with hyperchromatic oval nuclei spreading to various directions, giant cells and mitotic figures. By Masson’s trichrome staining, the nuclei were detected basophilic, and the cytoplasmas and muscle fibers were in pink color. The tumor was diagnosed as rhabdomyosarcoma.

Rhabdomyosarcoma causes clinical symptoms such as lameness and irregular swellings on the legs and causes disorders in the metastasized tissues or organs viz. lymph nodes, lungs, heart, spleen, adrenal glands, kidneys (Worley and Gorham, 1954). Similar swelling, pain and lameness were observed in the present case. However, no metastasis occurred during the follow-up period. In this case, Masson’s trichrome staining was used to show striated muscles. Furthermore, immunohistochemical examinations have started to be utilized recently, in order to show cellular myoglobin of intermediate filament proteins (De Las Mulas et al., 1992). In some of the rhabdomyosarcomas diagnosis can be difficult due to striations and various histomorphological appearances (Hulland, 1990) particularly in the lack of an evident histomorphological finding indicating rhabdomyoblastic differentiation (De Las Mulas et al., 1992).

Summary
Rhabdomyosarcoma which rarely occurs in dog was excised surgically and successfully managed. There was no recurrence of the tumor for a period of fourteen months under study. The pathological findings were recorded.

References