

## LIPOMA IN A RAT - A CASE REPORT

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### SUMMARY

A two year old, male rat was presented to the Veterinary Clinical Complex of this University with history of progressing growth at neck region for the past one and a half month. Rat used to move with the body tilted on one side because of the growth and was unable to climb. The history revealed that one more rat of the same owner died last year with the similar presentation. Physical examination revealed a hard, movable mass on neck extending up to thorax. Temperature was within physiological limits. Based on history and clinical examination it was tentatively diagnosed as tumor. The entire mass was surgically excised by anaesthetizing rat with xylazine hydrochloride @ 10 mg/kg and ketamine hydrochloride @ 50mg/kg body weight. Histopathologically tumor mass was confirmed as lipoma with mast cell infiltration.

**Key words:** Ketamine, lipoma, rat, tumor, xylazine.

Lipoma is a rare benign growth that has been described in humans and several animal species. It arises from mature adipocytes and is commonly seen in dogs, cats and rats. The tumor may be present in the cutaneous or subcutaneous tissue with size varying from 1 cm to 30 cm (Veena *et al.*, 2011). Lipomas of the central nervous system have been observed in the pig, horse, cow, dog, rabbit, and fox (Turnquist and Miller, 1993). Intracranial lipomas, “lipomatous” hamartomas, and choristomas have been described in several mice strains, with predominance in C3H/HeJ, C57BW6J and BALB/c mice (Brander 1995). Along with respiratory infections, tumors are one of the most common health problems and causes of death in rats, especially in females. Lipomas are rarely life-threatening. Lipomas growing in internal organs can be more dangerous; for example lipomas in the gastrointestinal tract can cause bleeding, ulceration and painful obstructions (so-called “malignant by location”, despite being a benign growth histologically (Taylor *et al.*, 1990; Thompson, 2005).

A two years old, male rat weighing approx. 180g was presented to the Veterinary Clinical Complex of LUVAS Hisar with a history of progressive swelling at neck region for the past one and a half month (Fig. 1). History revealed that one more rat died with same condition earlier. Physical examination revealed a hard, movable mass on neck extending up to thorax and the

animal did not express any sign of pain during examination. Rat was unable to raise its neck and used to move with the body tilted to one side. It was unable to climb and totally lacked physical activity. Body temperature of the rat was found within physiological limits.

Treatment and discussion based on the history and clinical signs, it was tentatively diagnosed as a case of tumor and surgical intervention was undertaken. Rat was anaesthetized with xylazine hydrochloride @ 10 mg/kg and ketamine hydrochloride @ 50 mg/kg body weight. Animal was positioned in sternal recumbency and prepared for aseptic surgery. A linear skin incision was made on the skin and hemorrhage was controlled. The entire tumor mass was separated from skin by blunt dissection and was ligated at the base with chromic catgut no. 3-0. The tumor mass weighing 62g was dissected out from the body (Fig. 2). The muscles were sutured with chromic catgut no. 3-0 in routine manner and skin sutured with braided silk no 1-0 in cruciate pattern. Postoperatively the rat was treated with Syp. Cephalaxine 0.5 ml, Syp. Melonex 5 drops both BID for five days. Owner was advised for daily dressing of the wound with povidone iodine and suture was removed on 14 days postoperatively. Rat recovered uneventfully and there is no evidence of any recurrence followed for six months (Fig. 3). Animal recovered its normal activity started climbing and raising the head. Histopathology of tumor mass revealed lipoma and it was characterized by

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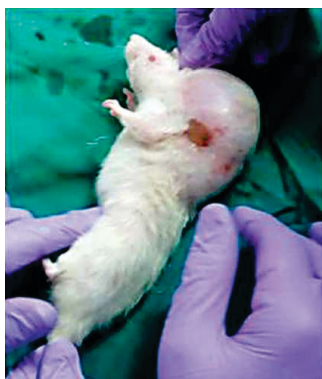


Fig. 1 Rat with tumor on neck



Fig. 2 Dissected mass



Fig. 3 Rat recovered after surgical intervention

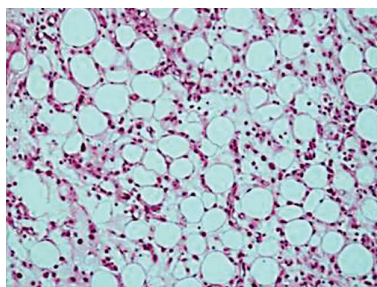


Fig. 4 Microphotograph of lipoma showing mature adipocytes with eccentrically placed nuclei. (H. & E.  $\times 200$ )

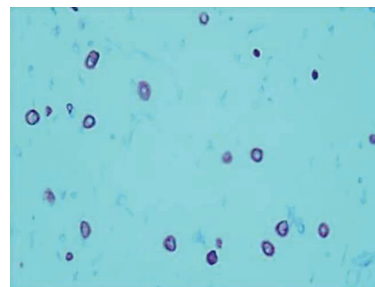


Fig. 5 Tumor mass showing the presence of mast cell infiltration. Toluidine blue staining (400X)

presence mature adipocytes with eccentrically placed nuclei. (Fig. 4) along with masts cell infiltration in the supporting connective tissue detected by toluidine blue stain (Fig. 5)The lipocytes of varying size containing flattened nucleus at the periphery were surrounded by fibrous connective tissue stroma showing scattered infiltration with mast cells. The degree of undifferentiating was minimal. Mast cells showed abundance of large darkly stained granules and centrally placed round or ovoid nuclei. Distinct cytoplasmic borders were clearly visible. The significance of presence of mast cells in this tumor is unknown. Similar findings were also reported by (Chandrashekar *et al.*, 2012).

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