

Surgical Correction of Extensively Large Mammary Tumor in Mouse: A Case Report

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Abstract: A case in a mouse with the history of soft tissue mass at side of inner left thigh region was reported to the Bai Sakrabai Dinshaw Petit Hospital for Animal, affiliated to Bombay Veterinary College, Mumbai. On thorough clinical examination, it was revealed that extensive swelling was not responding to the primary medicinal treatment since last two months. On palpation the swelling was hard, painless and progressively increase in size over a period of time. The growth was removed surgically under general anaesthesia with ketamine and maintenance by 3% isoflurane through inhalation route. The skin sutures were removed on 12th post operative day after uneventful recover. The histopathological examination, revealed fibroma of mammary gland.

Keywords: Mice, Mammary Tumor, Fibroma

1. Introduction

Mammary gland tissue is extensive in rats, extending from the cervical to the inguinal region ventrally and is as high as the shoulders and flanks laterally (Greenacre, 2011). Mammary tissue can be observed anywhere along the shoulder, neck, ventrum, flank or tail base. The tumors of mammary gland are common in mouse and are genetically predisposed to a high incidence of tumors and cancers. The tumors are of both types i.e. malignant and benign however mostly reported are of benign types (Raja, 2017). Present paper deals with successful surgical correction of mammary gland fibroma in mouse.

2. Case History and Clinical Observation



A female non-descript mouse was presented to Bai Sakrabai Dinshaw Petit Hospital Animal, affiliated to Bombay Veterinary College, Parel, Mumbai with the history of extensive swelling on inner side of left thigh. The hard, painless mass was progressively increased in sized over a period of two months. Thorough clinical examination, revealed that it was moderately hard on palpation, the mouse was dull, unable to walk, restless due to its extensive large size of mass. The X-ray examination of abdomen revealed soft tissue mass closed to ventral abdominal wall and on left thigh region. On physical, radiographical examination and history of its progressive increase in size, it was decided to remove the growth surgically.

3. Treatment

The lower abdomen was prepared by shaving and cleaning for aseptic surgery. The mouse was anaesthetized with ketamine (@ 80mg/kg BW) administered intramuscularly and maintained with 3% Isoflurane inhalation anaesthesia and placed in ventrodorsal position.

Elliptical incisions were made just on skin at the base of growth and the subcutaneous fascia bluntly dissected. The base of growth was then free from all sides after ligating blood vessels and was completely excised from its attachments. After removal of growth, dead space was flushed with betadine liquid and simple interrupted suture were placed to close dead space below skin with chromic catgut no. 2-0 and skin was sutured with nylon by horizontal mattress sutures.

Postoperatively, cefotaxim @ 25mg/kg BW I/V and meloxicam @ 0.2 mg/kg BW I/M for 5 days was given after dressing of wound with silver ointment. The mouse showed normal uneventful recovery. Skin sutures were removed on 12th post operative day.

4. Discussion

The incidence of tumor varies dramatically with the strain as well as age, sex, diet, caloric intake, and environment. The incidence of mammary gland tumors in aged females and male were range from 30% to 90% and 16% reported. Most of the mammary tumors in rats are fibro adenomas whereas about 10% are adenocarcinomas (Greenacre, 2011).

The present case was admitted with extensive swelling on inner side of left thigh which was hard painless & progressively increased in the period of time. Both benign and malignant tumours are reported in mice where benign tumor are capsulated and separated from nearby tissue.

The exact etiology of tumor is not known but hormone prolactin favors the growth of tumor cells in estrus every after 3-5 days in mouse and release of prolactin results in its rapid growth. This growth can be accelerated by secretion of prolactin itself and can also be produce by induction of chemical like N-methyl N-nitrous uria or bacterial lipopolysaccharide (Sharam, 2011)

The symptoms like restlessness, dullness were noted in present case. Similar observations were also reported by Shaharam, 2011 in chemical and bacterial induced tumors. The X- ray examination was performed for detection of extent of tumor. In contrast Shaharam & Akihiro 2017 reported various other methods like MRI and laboratory diagnostic test for its diagnosis and nature of its extend. The surgical correction was performed by taking two elliptical incisions & removal of encapsular growth from its base was found suitable, quick and easy to perform in such a small surgical space. Histopathologicaly, it was a fibroma of mammary gland, which was benign in nature. Willey 2011, reported that 80% of mammary tumor are fibroadenomas and 20% are adenocarcinomas type or malignant in mice. Cefotaxim controlled bacterial infection and meloxicam helped to reduce local swelling. Daily dressing with betadine and silver sulfadiazine ointment helped in early healing of wound.

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