E-ISSN: 2616-3470
P-ISSN: 2616-3462
Impact Factor (RJIF): 5.97

www.surgeryscience.com
2025; 9(4): 103-106
Received: 22-09-2025
Accepted: 27-10-2025

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Surgical management of mammary tumor in an eight years old local bitch: A case report

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DOI: https://www.doi.org/10.33545/surgery.2025.v9.i4.B.1256

Abstract
An eight years old local female dog was presented to Benue state veterinary Epidemiological clinic Makurdi, with swelling mass on the third right mammary gland, the mass show redness, alopecia, slight enlargement of lymph node and bloody discharges on clinical observation. The surgery was performed under general anaesthesia and the mass was removed. Basic parameters were normal including blood values, heamogram. A surgical management was conducted and the tumour was extirpated, under general anaesthesia, ketamine hydrochloride at the dose of 35mg/kg body weight and premedicated with xylazine hydrochloride at the dose of 3mg/kg body weight, banking soda (sodium bicarbonate) was applied on the defected created following the surgery. The defect was closed in three layers, the muscular and subcuticular were closed with chromic cat gut size 3-0, while the skin was close with nylon size 3-0. The post-surgical management was done with penstrep at the dose of 20mg/kg body weight intramuscularly for 4 days, surgical site was treated by application of oxyspray for 6 days, cyclophosphaminde was administered at the dose of 0.5mg/kg body weight for 10 days. The healing was recorded swift and the sutures were removed on day 12 post-surgery.

Key words: Tumor, mammary gland, dog and mongeal

Introduction
Tumors of the mammary gland can be caused by a combination of hormonal, genetic, and agerelated factors. Hormonal imbalances, particularly estrogen, can contribute to the development of these tumors. Family history and genetic mutations also play a significant role in increasing the risk of developing mammary gland tumors. Additionally, the risk of developing these tumors increases with age [1, 2, 3].
Tumours of the mammary gland in dog develops as a result of abnormal replication of the cells that make up the breast tissues. They can be benign or malignant (cancerous). Mammary gland tumours has very high incidence in dogs and cats than other domestics species among all forms of comprises 50% and about 60% of which are benign and above 40% are malignant in nature. Mammary tumours are homes dependant, and after oestrous cycle there is surge of progesterone production which stimulate hypertrophy o mammary tissues which occurs exactly after oestrus [4, 5].
Mammary gland tumors are common neoplasms in female dogs, with approximately 50% being benign. However, dogs with a history of benign mammary tumors are at increased risk for subsequent malignant tumor development, requiring ongoing monitoring and staging. This case report describes the successful surgical management of a mammary gland tumor in an eightyear-old local female dog [1, 3, 5].
The symptoms of mammary gland tumors can vary, but common signs include a new lump or swelling in the breast tissue, pain or tenderness in the breast, abnormal discharge from the nipple, and changes in the shape or size of the breast. If any of these symptoms are noticed, it is essential to consult a healthcare professional for proper evaluation and diagnosis [2, 3, 4]. Diagnosing mammary gland tumors typically involves a physical examination by a veterinary professional, followed by imaging tests such as mammography, ultrasound, or MRI scans to evaluate the tumor. A biopsy may also be performed to determine if the tumor is benign or malignant [3, 4, 5, 6, 7].

Treatment options for mammary gland tumors depend on the type and severity of the tumor. Surgery may be necessary to remove the tumor or the entire breast. Chemotherapy and radiation therapy may also be used to target cancer cells and kill any remaining tumor cells [1, 2, 8].

Preventing mammary gland tumors can be achieved through regular check-ups, screening tests, and maintaining a healthy lifestyle. Regular breast self-exams and clinical exams can help detect tumors early, while mammography and other imaging tests can detect tumors before symptoms appear. Additionally, maintaining a healthy weight, exercising regularly, and avoiding hormone replacement therapy can reduce the risk of developing mammary gland tumors. Early detection and treatment are crucial for improving outcomes in cases of mammary gland tumors [9-19].

Case History

An eight-year-old local female dog was presented to the Benue State Veterinary Epidemiological Clinic in Makurdi with a swelling mass on the third right mammary gland. Clinical observation revealed swollen lymph nodes, redness, laceration, and hot on palpation with the history of swelling, alopecicia and excruciating pains and irritation at the 3rd right mammary gland it was revealed also that that the mass has been there for the past three years. History also revealed that the dog has never allow to breed for her eight years of life. And feeding was basically on the kitchen prepared meals. The clinical observation revealed breast lump was slightly enlarge at the base of the nipple.

Haematology revealed a normal haemogram.

Surgical Procedure

The dog was prepared aseptically for surgery and anesthetized with ketamine hydrochloride (35mg/kg body weight) and premedicated with xylazine hydrochloride (3mg/kg body weight). A surgical management was conducted, according to the method by Solemmo *et al.*, 2020, and the tumor was extirpated. Sodium bicarbonate was applied to the defect created following surgery. The defect was closed in three layers: muscular and subcuticular layers were closed with chromic catgut size 3-0, while the skin was closed with nylon size 3-0.

Post-Surgical Management

Post-surgical management included administration of penstrep (20mg/kg body weight) intramuscularly for four days, wound site application of oxyspray for six days, and cyclophosphamide (0.5mg/kg body weight) for ten days. The healing process was swift, and the sutures were removed on day 12 post-surgery. Biopsy: an incision on the mass revealed grey-whitish to grey brownish areas encapsulation with adipose tissues. The area externally was ulcerated with sanguineous masked. The biopsy samples were collected in 10% buffered formalin solution for histopathology examination.

Fig 1: The local bitch on dorsal for clinic observation

Fig 2: The Tumor lump showing Areas of alopecia, reddening and thickening of the skin

Fig 3: Surgical excision of the tumor mass in 8 years bitch

Fig 4: Surgical excision of the tumor lump in 8 years bitch

Fig 5: Skin sutures post-surgery

Fig 6: Excised tumor mass

Results and Discussion

Tumours of the mammary gland in dog develops as a result of abnormal replication of the cells that make up the breast tissues. They can be benign or malignant (cancerous). Mammary gland tumours has very high incidence in dogs and cats than other domestics species among all forms of comprises 50% and about 60% of which are benign and above 40% are malignant in nature. Mammary tumours are homes dependant, and after oestrous cycle there is surge of progesterone production which stimulate hypertrophy o mammary tissues which occurs exactly after oestrus [4, 5].

Mammary gland tumors are common neoplasms in female dogs, with approximately 50% being benign. However, dogs with a history of benign mammary tumors are at increased risk for subsequent malignant tumor development, requiring ongoing monitoring and staging. This case report describes the successful surgical management of a mammary gland tumor in an eightyear-old local female dog [1, 3, 5].

Based on histopathological examination the type of tumor can be specified that the dog is suffering from a particular type of the mammary gland tumor. The tumor mass can be surgically removed under general anesthesia following standard aseptic protocols and premeditations. The tumor lump is liberally extirpated or removed, and the post-surgical procedure is multidimensionally managed [22, 23].

Mammary gland tumors in dogs can be effectively managed with surgical removal of the tumor. The type of surgery depends on the size and location of the tumor, as well as the dog's overall health. In this case, surgical excision of the tumor was successful, and the dog recovered well. Adjuvant chemotherapy may be considered in cases of malignant tumors or incomplete surgical margin [20, 24].

This case report highlights the importance of early detection and surgical management of mammary gland tumors in dogs. Regular monitoring and staging are crucial to prevent recurrence and metastasis. Further studies are needed to determine the efficacy of adjuvant chemotherapy in canine mammary gland tumors and the type of tumor.

Acknowledgements

The authors express their gratitude to Mrs. Torher and her family for their valuable collaboration and support throughout the treatment and management of this case.

Conflict of Interest

The authors declare that they have no conflict of interest.

Funding

The authors declare that this study received no financial funding.

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How to Cite This Article

Umayange A, Amase G, Onyeberechi SA, Amali E, Imenger O, Ayongo JA, Akaan ST. Surgical management of mammary tumor in an eight-years old local bitch: A case report. International Journal of Surgery Science 2025;9(4):103-106.