

Case Report
Open Access

Subcutaneous Benign Tumour; A Case of an Ox and Its Management Outcome; A Case Report

Dessalew Habte

Addis Ababa University, College of Veterinary Medicine and Agriculture, Department of Clinical Studies, Bishoftu, Ethiopia

ABSTRACT

Tumor or neoplasm is an abnormal mass or swelling of tissue which results when cells divide more than they should beyond brain's control. This case report describes, a successful management of subcutaneous benign tumour on an adult local breed ox having a body weight of 295 kg that was presented to VTH of AAU-CVMA, Bishoftu, on February 24/2022. It has a primary complaint and a history of firm and cold swelling at the caudal part of mandible on the lateral side of neck region that has spent over four years. Aspiration of the swelling with a sterile 16 gauge needle with syringe didn't detect or withdrawn any of the contents (pus, fluid, blood and other). Cytological examination of tissue smears resulted immature and irregular shaped cells which have large darker nucleus. Based on history, clinical signs and cytological staining result, the case was diagnosed as subcutaneous benign tumor which is differentially diagnosed from abscess, oedema, cascious lymph adenitis and haematoma. It was managed by surgical resection and intramuscular injection of penicillin G procaine with wound spray topically for three successive days. Complete recovery of the ox was achieved after three weeks. Surgical resection accompanied with topical application and parenteral administration of antibiotics can give successful outcome on the management of localized subcutaneous benign tumours after proper identification and effective analgesics.

*Corresponding author

Dessalew Habte, Addis Ababa University, College of Veterinary Medicine and Agriculture, Department of Clinical Studies, Bishoftu, Ethiopia.
E-mail: desalewhabte@gmail.com

Received: March 28, 2022; **Accepted:** May 03, 2022; **Published:** May 07, 2022

Keywords: Benign Tumour, Surgical Removal, Ox

Introduction

In a healthy body, cells grow, divide, and replace each other and old one die in the body of both animals and human. But when there are too many new cells that are proliferated too quickly by varying in size from a tiny nodule to a large swollen mass, depending on the type without the control of brain in which the body does not need them are considered as tumour/ neoplastic or cancer cells. These cells cause the disease condition called tumour or neoplasm which affects all species of animals and all parts of the body. A tumour or cancer is a soft or hard tissue mass characterized by excessive, persistent and disorganized cell growth that is unresponsive to normal control and treatment mechanisms [1,2].

There are three main types of tumors each having different effects and names in the body namely; benign tumours which are characterized as non-metastatic or cannot grow, or do so very slowly and once removed they do not generally return; premalignant tumours are not yet cancerous, however they have the potential to become malignant; and malignant tumours which are cancerous and the cells can grow rapidly and metastatic to other body parts. Most benign tumors are not dangerous, and they are unlikely to metastasize and affect other parts of the body. But they can cause pain or other problems if they produce pressure against nerves, blood vessels or other vital organs or if they trigger the overproduction of hormones. Several factors contribute to the development of different tumors including chemical exposure, old age, genetic susceptibility and nutrition, UV light and different viruses [3,4].

Tumour/ cancer cells can be distinguished from normal cells by microscopic examination from cell samples with different cytological staining methods by giemsa, wrights, modified wright stain (wright-giemsa) and good-quality rapid romanowsky stains. Cytology can be used to diagnose the masses or growths (tumors) found on the surface of the body, but it can also assess different body fluids and internal organs and is often used for preliminary evaluation to establish a working diagnosis and as needed, plan surgery. Additionally, tumour or cancer cells can be diagnosed and confirmed by histopathology techniques. The differential diagnosis of tumour can be abscess, oedema, hernia, cascious lymph adenitis and haematoma [5,6].

Bovine tumour is of great concern now a days as it causes economic losses due to undesirable impact on animal health and productivity and thus it reduces profitability to individual farmer and livestock industry. A systematic research to find out the specific pattern of bovine tumour occurrence, application of advanced diagnostics techniques and its effective treatment in animals revealed scarce information in Ethiopia. The occurrence of different tumours is in rising tendency in the world in which the frequency of tumours in bovine is relatively increased and ranked second place following tumours of canine with no effective and available medical treatments in most developed countries. Therefore, the current case report describes a case of subcutaneous benign tumour of an ox and its management outcome [1,7,8].

Description of the Case

An adult local breed ox having a body weight of 295 kg with a

primary complaint of firm swelling that has a history of progressive development at the caudal part of mandible on the lateral side of neck region. The swelling has spent over four years and the case was referred from kality kebele veterinary clinic and presented to VTH of AAU-VMA, Bishoftu, on February 24/2022. Physical examination revealed the respiratory and heart rate to be within the normal physiological limits with slight elevation of body temperature (39.6 °c) and firm and cold swollen mass was palpated.

During clinical examination, the ox showed minor depression, reduced body condition, firm, cold and swollen mass at the caudal part of mandible from the lateral side of neck region as indicated in figure 1A below. In order to differentiate this swelling from abscess, oedema, cascious lymph adenitis and hematoma, a sterile 16 gauge needle with syringe was inserted at its most ventral part for aspiration to detect the contents (pus, blood, fluid and other) but any type of content was not withdrawn (figure 1B). Based on history of development and age of the animal and swollen mass, and clinical signs, the case was tentatively diagnosed as subcutaneous benign tumor and differentially diagnosed from abscess, oedema, cascious lymph adenitis and haematoma.

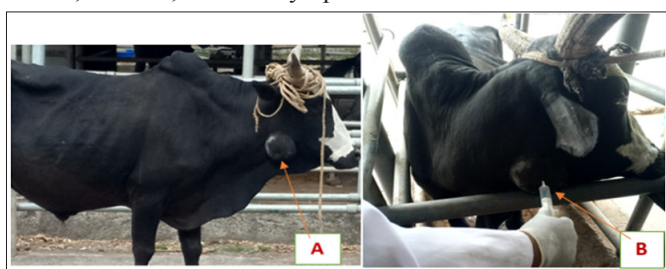


Figure 1: Picture of the ox suspected with subcutaneous benign tumor (A, indicates firm swollen mass caudal to mandible while B, showed fine needle aspiration without any content)

Laboratory Investigation and its Findings

From excised mass of tumor, a piece of tissue sample was taken and immediately transported to veterinary clinical pathology laboratory of AAU-CVMA, Bishoftu. Cytological analysis by modified wright stain (wright-giemsa) was conducted from different smears (impression and crushed tissue smears). Microscopic examination by x100, resulted irregular shaped cells which are immature and out of control in growth that have large darker nucleus (figure 2). Therefore, based on history of development and age of the animal and swollen mass, clinical signs and cytological laboratory findings, the case was finally diagnosed as subcutaneous benign tumor.

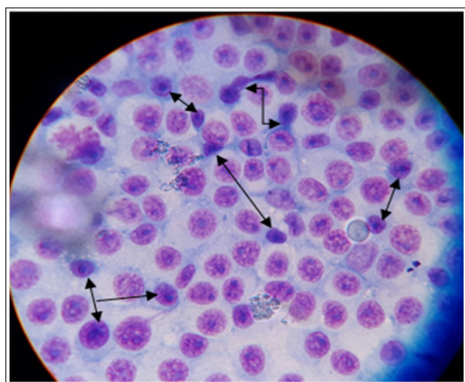


Figure 2: Cytological result of excised tumor from the ox by modified wright stain (arrows indicate immature and irregular shaped cells with large darker nucleus)

Case Management and Treatment Outcome

This case was managed and treated by surgical removal of the swollen mass (tumor) by the following procedures and protocols; after the hair was clipped from the area where the tumor was excised, it was cleaned with clean water and savlone and aseptically prepared followed by achievement of analgesia with local infiltration of 2% lidocaine HCl around the incision site, then an ellipsoidal incision was made (figure 3A) with proper haemostasis followed by blunt dissection of the structure to separate at the base without causing any injury to the jugular furrow (figure 3B). Then a ball like mass (tumor) was successfully removed (figure 3C). The healthy tissue at the base was checked for blood supply and ligated properly with chromic cut gut. Then penicillin G procaine powder was applied topically to the vacant hole followed by suturing of the edges of the skin by interrupted horizontal mattress with silk (figure 3D) which was removed after two weeks. Finally, chlortetracycline (cyclo spray) (Farvet Laboratories B.V., Netherlands) topically and intramuscular injection of penicillin G procaine (Hebei Hope Harmony pharmaceutical Co., Ltd., China) with the recommended dose of 1ml/15kg (400,000 units/kg) body weight per day for three successive days were used. After this management and treatment protocol, the ox has successfully recovered from the problem after three weeks as indicated in figure 4 below.



Figure 3: Pictures indicating surgical removal of subcutaneous benign tumor from the ox (A, ellipsoidal incision of swollen mass, B, blunt removal of the tumour, C, ball like tumour after excision, D, vacant hole due to removed mass of tumour, E, incision site after excision of tumour and skin suture)

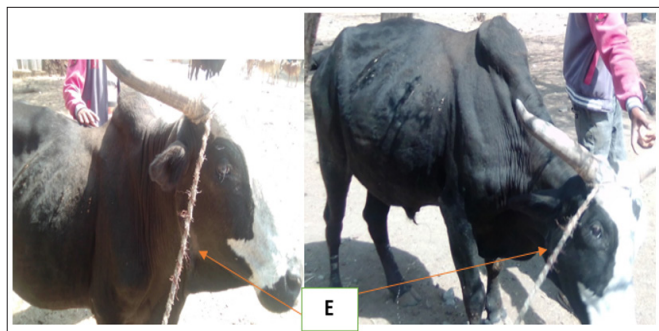


Figure 4: Picture showing recovery of the ox with disappearance of the swollen mass after two (left) and three (right) weeks

Discussion

Tumour, an uncontrolled propagation of cells in the body have different forms and its occurrence and effect in all species of animals and human is increasing globally in which dogs have high incidence and stand first by developing different tumours followed by bovine. Bovine tumours affecting skin and appendages form a major constituent of all other neoplasms in animal health practice. Among the skin tumours, the commonly diagnosed and economically important skin tumours/ neoplasms in large animals include bovine cutaneous papillomatosis, squamous cell carcinoma and different localized subcutaneous benign tumours. Currently the incidence of bovine tumour/ neoplasm is relatively increasing which causes massive economic losses due to decreased production in meat and milk yield, carcass condemnation, high treatment cost and morbidity and mortality of animals [1,2,8].

In the current case report, the clinical signs observed were depression, reduced body condition and draught power as the owner reported and development of a swollen mass at the caudal part of mandible around the neck region that has age of about four years. This swelling has assumed to cause different effects on the animals like localized stress at the site of tumor, pressing of blood flow (since located on the jugular furrow) and nerve pass way, interfering with functions of different vital organs (esophagus, trachea, lymph nodes and others), secretion of excess amounts of biologically active substances (hormones) and reduction on the productive and reproductive efficiencies and general health conditions of animals as a secondary drawbacks. This finding agrees with the case report of benign melanocytoma in cow by genital tract tumours in cattle by occurrence of certain tumours in bovines by and prevalence and factors associated with superficial tumours and tumor-like swelling in cattle by [1,2,7,9].

Reports with appropriate diagnosis and treatment of tumours in cattle are relatively rare when compared with reports on other domestic animal species. One expected reason is that most cattle do not reach an age old enough to predispose them to the development of tumours [10,11]. However, the prognosis and treatment or management outcome of begin tumours in cattle depend on the stage of tumour at diagnosis, the rate of metastases and the type and timing of the management and treatment. The surgical resection of different benign tumours on different body parts like melanocytoma and subcutaneous benign tumours is always indicated. This agrees with the present case report and its management and treatment approach that provides effective outcome on the ox to successfully recover within short period of time [12-14].

In conclusion, surgical resection accompanied with topical application and parenteral administration of antibiotics can give successful outcome on the management of localized subcutaneous

benign tumours after proper identification and effective analgesics.

References

1. Khalil A, Zeineldin M, Amin A, Shehata S, El-khodery S, et al. (2020) Prevalence and Factors Associated with Superficial Tumors and Tumor-like Swelling in Cattle and Buffalo in Egypt. *Mansoura Veterinary Medical Journal* 4: 155-160.
2. Lakshman M (2019) Occurrence of certain tumours in Bovines. *Journal of Entomology and Zoology Studies* 7: 2-4.
3. Shruthi P, Sujatha K, Srilatha H, Rayulu C (2018) Incidence of different tumours in bovines. *Open Access Journal of Science* 2: 220-222.
4. Agnew W, MacLachlan N (2016) Tumors in domestic animals, Tumors of the genital systems Hoboken Journal of science USA John Wiley and Sons 2: 689-722.
5. Zainab K (2016) Histopathological study of vulvar squamous cell carcinoma and ruminal fibropapilloma in cows in basraprovince. *Basrah Journal of Veterinary Research* 15: 243-254.
6. Gilvarry U, Farrell D, Lynch V, Moriarty M, Dooley M, et al. (2011) Cytological differences between normal and malignant cell populations in culture. *Journal of Cancer Research* 5: 390-393.
7. Katare M, Tripathi M, Raghuvanshi S, Husbandry A (2016) Benign melanocytoma in a non-descript cow : A case report Benign melanocytoma in a non-descript cow : A case report. *Indian Journal Of Animal Research* 50: 37-39.
8. Marosfoi L, Baba A, Catoi C (2009) Morphological Study of Bovine Tumors. *Bulletin of the University of Agricultural Sciences and Veterinary* 66: 147.
9. Martz P, Oezcan-martz A, Bittner L, Ebert F (2020) Case reports of genital tract tumours in cows. *Open Access CAAS Agricultural Journals* 65: 401-408.
10. Gruber A, Klopffleisch R (2020) General pathology for veterinary medicine, Tumor pathology. third edition German 222-69.
11. Stromberg P, Meuten J (2016) Trimming Tumors for Diagnosis and Prognosis. *Tumors in Domestic Animals* 22: 131-140.
12. Okawa H, Tomiki M, Ishida T, Kawaguchi H (2016) Clinical diagnosis of bovine granulosa cell tumour in a Holstein cow using plasma anti-Müllerian hormone concentration: a case report. *Journal of Applied Animal Research* 45: 529-532.
13. Vamshi K, Reddy N, Jaganmohan R, Mallesh P, Raju G (2017) Surgical management of recurrent squamous cell carcinoma in a cattle - A case report. *The pharma innovation journal* 6: 161-162.
14. Manoj K, Mallikarjuna R, Veena P, Amrita V, Sudarshan R, et al. (2014) Surgical management of fibroma in a bullock: a case report. *International Journal of Science Environment and Technology* 3: 2284-2286.

Copyright: ©2022 Dessalew Habte. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.