

Case Study

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Unilateral Horn Cancer in Cow and its Surgical Management- A Case Report

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ABSTRACT

Keywords

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A six year old cow with growth on the left horn, with foul smell and bleeding was presented to clinics. On clinical examination the horn growth is characterised by granulation tissue at the base of the horn with offensive odour and was spongy, greyish white cauliflower like having rough and verrucous surface and was diagnosed as horn cancer. The horn tumor was removed surgically from the base and the animal was recovered uneventfully. The histopathology of the tumour revealed the squamous cell carcinoma.

Introduction

Horn cancer is a common condition in bullocks in India affecting approximately one percent of population. (Giri *et al.*, 2011 and Veena *et al.*, 2011) Horn cancer is generally unilateral and is encountered in cattle in the age group of 5-10 years (Tyagi and Singh, 2006). The disease is associated with chronic irritation of horns at their base (Sastry, 2001). The most consistent clinical signs are frequent head shaking, tilting at the affected side, bending of affected horn and increase nasal discharge on the affected side in advance cases (Joshi *et al.*, 2009). For treatment of horn cancer amputation of horn alone or along with chemotherapy using Vincristine were on reports (Udharwar *et al.*, 2008 and Nicholas *et al.*, 2011). The present case describes treatment of horn cancer in cow and its successful surgical management.

History and symptoms

A Non-descript cow of 6 years old was presented with previous history of broken horn, with growth at the base on left horn, foul smelling, blood discharge from the tumour growth. On clinical examination of affected horn, the cancerous growth was spongy, greyish white, pink cauliflower like tumour having rough and verrucous surface which was friable and bleed easily (Fig. 1). Based on the history and clinical examination, a tentatively diagnosed as horn cancer and amputation was performed

Treatment

The animal was restrained in standing position and the surgical site was prepared for aseptic surgery. Xylazine Hydrochloride (Xylaxin^R, Indian Immunologicals,

Hyderabad) @ 0.1 mg/ kg intramuscularly to sedate the animal. An amount of 10ml 2% Lignocaine hydrochloride (Xylocaine, Astra IDL Ltd Bangalore) was infiltrated in a fan pattern to desensitize the corneal nerve parallel to the frontal crest at its middle one third. After adequate analgesia dehorning was done by Flap method as suggested by Kumar (2005).

The incision was extended in an elliptical manner around the corium and the underlying tissues are separated at base of horn to raise full thickness dorsal and ventral skin flaps. Following skin incision the corneal artery were located on its ventral aspect and ligated by chromic catgut No.1 to prevent haemorrhages. The exposed horn was then dehorned closely to its base by using gigli wire saw. The remaining attachment to the bone was chiselled out with bone chisel.

The cavity was thoroughly curetted to get rid of neoplastic cells. To avoid any possibility of haemorrhage, gauze soaked in clotase was applied in the cavity for some time. The skin flaps were sutured by mattress suture pattern using silk No.2 and wound is covered with Tincture Benzoin seal to prevent haemorrhage. Post-operative treatment included administration of ceftriaxone (10mg/kg intramuscularly), Meloxicam (0.2 mg/kg intramuscularly) for 7 days, and chlorpheniramine maleate (10ml intramuscularly) for 3 days.

Daily dressing of the suture line was performed with 0.1% Povidone iodine solution and applied Lorexane ointment for wound. The skin sutures were removed on 12th post-operative day.

Histopathology

Histopathology examination of tissue revealed neoplastic epithelial cells extended

into dermis forming focal islands, cords and trabeculae and showed variable degree of squamous differentiation. In addition epidermal hyperplasia, hyperkeratosis, fibrosis was also noticed. The amount of keratin seen as intracytoplasmic, eosinophilic fibrillar material showed distinct keratin “pearls”.

The neoplastic cells forming focal islands were round with moderate amount of pale to basophilic cytoplasm. Mitotic figure were numerous. As suggestive of Squamous cell carcinoma (Fig. 2).

Results and Discussion

In the present case the recovery was uneventful and observed complete cure without any recurrence as reported by Giri *et al.*, (2011), Jaiswal *et al.*, (2014), Sharma and Singh (2014), Pitlawar *et al.*, (2016) and Behera *et al.*, (2016).

The specific chemotherapy including antineoplastic drugs could not be undertaken due to economic considerations (Veena *et al.*, 2011) while, Kumar *et al.*, (2013) used successfully vincristine sulphate @ 0.025mg/kg intravenously thrice at interval of seven days for squamous cell carcinoma of horn after surgical excision.

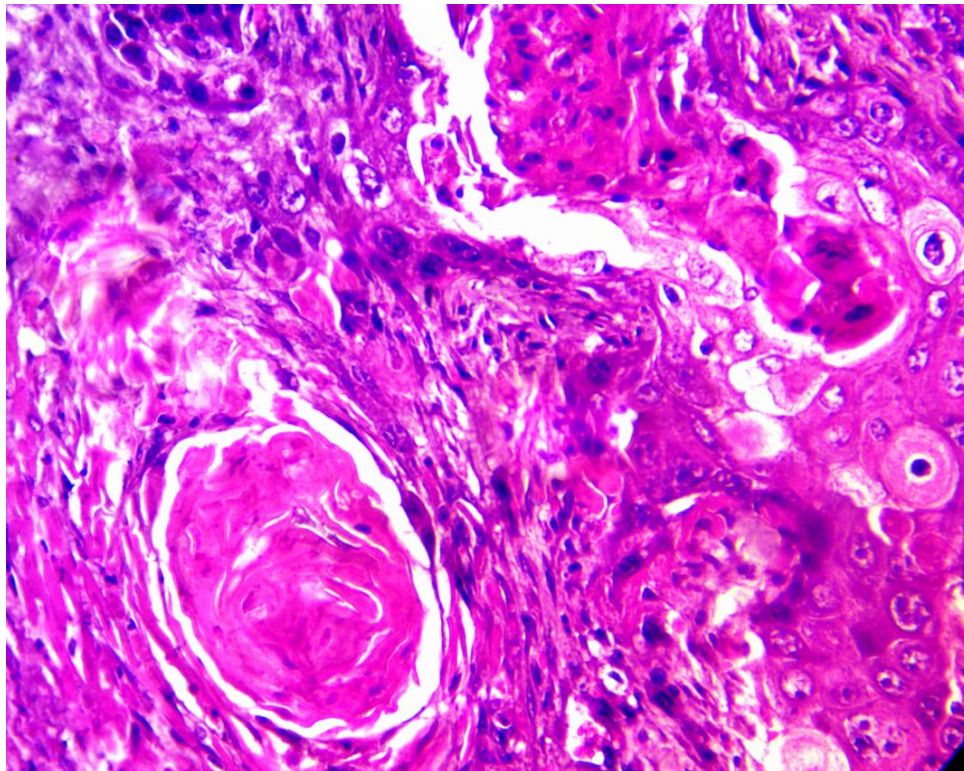
Carcinoma of horn core in cattle is primarily squamous cell neoplasm.

Histological examination of cancerous tissue collected from middle region of horn core revealed typical keratinizing squamous cell carcinoma with characteristic epithelial pearls as observed by Giri *et al.*, (2011), Jaiswal *et al.*, (2014), Kumar *et al.*, (2013) Pitlawar *et al.*, (2016) and Behera *et al.*, (2016). Early Diagnosis and treatment is essential for good prognosis.

Fig.1 Cauliflower like growth in horn cancer



Fig.2 Squamous cell carcinoma of horn tumor showing distinct keratin Pearls.



The cases of unilateral horn cancer in cattle can be successfully managed by surgical method if it is diagnosed in early stage.

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