

Surgical Management of Right Horn Squamous Cell Carcinoma - A Report of Two White Coat Cattle

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Abstract

Two adult cows were presented with complaint of growing hard mass showing irritation with few bleeding spots at the right horn since last two months. Tentatively the animals were diagnosed with horn cancer, which was later confirmed as squamous cell carcinoma by histopathological examination. Radical excision after sedation and cornual nerve block was under taken. Post-operatively, animal was kept on Enrofloxacin and Meloxicam for five days with daily antiseptic dressing with no complications or regrowth.

Keywords: Cancer; epithelial pearl; horn; squamous cell carcinoma

Introduction

Among all tumors of cattle, horn cancer is considered to be the most common in India. It is an important disease, causing huge economic losses due to reduced draught power in working bullocks and decreased milk production capacity in milking cows. Horn core carcinoma in cattle is a neoplasm of squamous cell type (Patra, 1963) and trauma or irritation at the base of horn are the most common responsible factors for this condition (Shastry, 2001). These tumors are painful and fill the horn core and may invade the frontal sinus but rarely metastasize to regional lymph nodes, lung and liver. The incidence of squamous cell carcinoma has been frequently recorded in cattle (80%) than buffalo (3%) (Somvanshi, 1991). Adult long horned white coat breed cattle of 5-10 years of age are most susceptible (Kulkarni, 1953). Left horn cancer (66.66%) is more prevalent than right horn cancer (33.33%) (Udharwar *et al.*, 2008).

History and Diagnosis

Two white coat breed adult cows of seven years of age were presented with complaint of a growing mass (Fig. 1) and irritation present at the right horn since last two months. On clinical examination, the mass was found to be hard and there were few bleeding spots on the mass. Tentatively the case

was diagnosed to be horn cancer which was later confirmed as squamous cell carcinoma by histopathological examination and was decided to go for radical excision.

Treatment and Discussion

The cows were sedated with Xylazine @ 0.2mg/kg b. wt. intramuscularly and restrained in left lateral recumbency with affected horn side up. The surgical site was cleaned and scrubbed with Chlorhexidine solution. Cornual nerve block was established with 2% Lignocaine hydrochloride. An elliptical incision was made around the horn base and underlying tissues were separated to make a skin flap. The bleeding was checked by ligating cornual vessels with catgut no.1. The mass was excised (Fig. 2) by dehorning using a hexa blade by keeping it close to the horn base. The exposed bone was chiseled out. Tincture benzoin guaze was packed firmly into the cavity for some time and then the guaze was replaced with Betadine^a guaze. The outer skin flap was sutured with silk in simple interrupted pattern.

Post-operatively, antibiotic Enrofloxacin (5mg/kg b. wt. once a day for five days) and Meloxicam^b (0.2mg/kg b. wt. once daily for three days) were given intramuscularly. Daily antiseptic dressing was advised with Betadine^a solution for five days. The animals were observed for two months post-operatively and there were not any complications or regrowth of the mass.

Histopathological Examination

The tissue samples for histopathological

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a - Brand of GSK Pharma Ltd., Mumbai

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Fig. 1: Mass at right horn

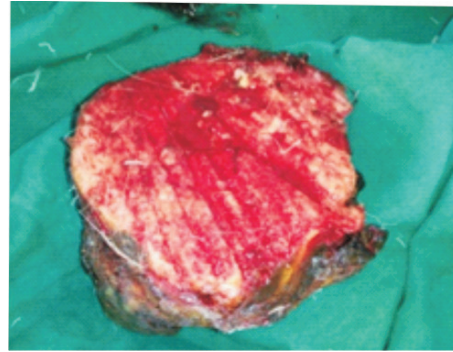


Fig. 2: Excised horn with mass

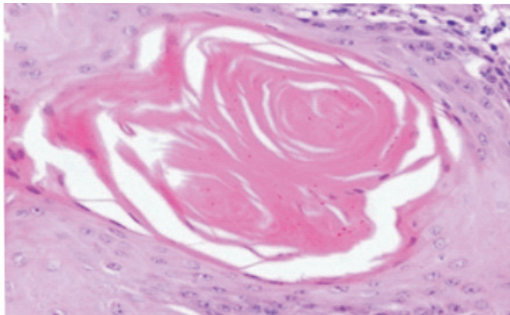


Fig. 3: Typical epithelial pearl suggestive of squamous cell carcinoma

examination were collected from the excised mass and fixed in 10% neutral buffered formalin. After fixation the samples were processed for Hematoxylin and Eosin (H&E) staining using standard protocol (Luna, 1968). Histopathological examination revealed extensive proliferation of squamous cells forming concentric layers with Keratinisation at the centre, giving the appearance of a typical epithelial pearl (Fig. 3). The cells were polyhedral in shape with prickly borders and large nuclei. The surrounding connective tissue was fibrous

containing blood vessels engorged with RBCs. Some lymphatic vessels contained squamous cells indicating metastatic nature of tumor. On the basis of histopathological examination the cases were diagnosed as squamous cell carcinoma.

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Sex Sorted Semen production centre at Rishikesh, Uttarakhand

Under the 'Rashtriya Gokul Mission' Yojana, Shri Trivendra Singh Rawat, Chief Minister and Shri Radha Mohan Singh, Union Agriculture minister laid the foundation stone of the country's first sex sorted semen laboratory at Deep Frozen Semen Production Centre, Shyampur, Rishikesh, Uttarakhand on 9th June' 2018.