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Surgical Management of Horn Affections - A Report of 2 Bullocks

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Abstract

Two bullocks with history of fracture of horn, foul smelling, head shaking, mucopurulent discharge from the corresponding nostrils, dull, depressed, partially closed eyes and head pressing were presented. Both animals were suspected for sinusitis and in second case tumor mass (squamous cell carcinoma) at the tip was observed. The affected horns were surgically removed and no recurrence was observed. Animals recovered uneventfully.

Keywords: Cattle; horn cancer; sinusitis; squamous cell carcinoma

Introduction

Sinusitis in bovines typically involves frontal or maxillary sinus. Frontal sinusitis is usually associated with dehorning and maxillary sinusitis with infected teeth (Campbell, 2015). Sinusitis may be a sequalae to cornuectomy, if frontal sinuses are open and exposed to dust, hay, straw particles, rain or snow. It may also occur in horned bulls resulting in fractures at base of horn (Ames, 2014). Horn cancer is the most commonly encountered neoplastic condition of economic importance in bullocks (Udharwar *et. al*., 2008). Bovine horn cancer is the most predominant cancerous condition, beginning at base of horn mostly bullocks in India. However, a case of squamous cell carcinoma of mucosa involving the tip of horn, similarly rare case of horn cancer with sinusitis are treated successfully and managed.

History and Diagnosis

Case-1

A eight year bullock was presented with history of fracture of left horn six months back (Fig.1). Clinical examination revealed foul smelling fractured site with mucopurulent discharge from corresponding nostril. The rectal temperature was 102.5^{0}F and rest of parameters *viz.* respiration and heart rates were within normal range. Rubbing of affected horn to hard objects, restlessness, teeth grinding and head shaking were other symptoms reported. These clinical signs were suggestive of frontal sinusitis.

Case-2

A ten year bullock was reported with history of fracture of proximal end of right horn, six months back and was treated by amputation of horn distal to fractured site without closing the surgical wound exposing sinus. Gradually during the period of six months, growth at tip of horn originating from inner mucosa of horn was noticed (Fig. 2). The sample from growth was collected for histopathological examination. The rectal temperature was 103^{0}F and animal was anorectic since two days. Remaining clinical parameters were within normal physiological range. The mucopurulent discharge through the corresponding nostrils, partially closed eye of affected side, head pressing to hard objects and frequent shaking of head was observed.

Treatment

Both animals were treated surgically for amputation of horn by flap method. The amputation of horn was performed in standing under tranquilization with Triflupromazine hcl @ 0.1 mg/kg b. wt. IM and cornual nerve block with 2% Lignocaine hcl in standing position with positive head restraint. The operative site was prepared aseptically as per routine procedure. After desired level of analgesia, the elliptical incisions were taken on anterior and posterior side at base of horn and flaps of skin were separated. The cornual arteries were ligated with catgut no 1, inflamed mucosa with mucopurulant deposition were scraped out from inner linings of sinuses and affected horns were amputated with due care for proper closure of skin flaps (Fig. 3). In both cases, mucous membranes appeared inflamed. Four Nitrofurazone and Urea boli were kept in the frontal sinuses cavity and skin was sutured with nylon by horizontal mattress technique. Post operatively, Inj. Intacef[a] (Ceftriaxone) 3 gm IM for five days, Inj. Melonex[a] (Meloxicam) 15 ml IM for three days, Inj. Anistamin[a] (Chlorpheniramine maleate) 7 ml IM for three days were administered and dressing of wound for five days with oint. Loraxane[b] was carried out. Skin sutures were removed on 10th post-operative day.

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a - Brand of Intas Animal Health, Ahmedabad
b - Brand of Virbac Animal Health, Mumbai

Fig. 1: Fracture of left horn (case 1)

Fig. 2: Tumor mass at the tip (case 2)

Fig. 3: Removal of horn and posterior flap (case 2)

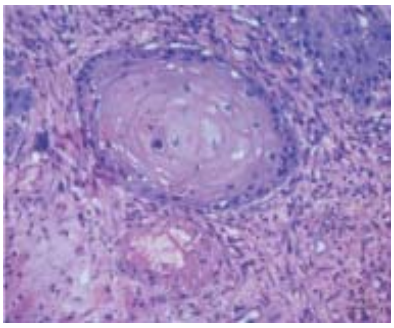

Fig. 4: Squamous in histological section (case 2)

Histopathology

Microscopically tumor tissue on 10th day in 2nd case. revealed proliferating squamous epithelial cells. The multiplying cells were seen in form of islands, the formation typical keratin pearl was observed in centre of these islands (Fig. 4). The proliferation of fibrous connective tissue around the islands was seen which supported the multiplying cells. The haemorrhages were evident in connective tissue stroma. The growth was identified and diagnosed as squamous cell carcinoma of malignancy grade II.

Discussion

Frontal sinusitis in one of the common sequele to fractured horn and amputation of horn in cattle. Acute frontal sinusitis is more common and usually follows sharp dehorning techniques. In first case, fractured horn was amputated distal to site of fracture and sinus was left open for six months, leading to exposure to dust and surroundings which precipitated sinusitis, as also reported by Ames (2014). The sinusitis is characterized by fever 103^{0}F, unilateral or bilateral mucopurulant discharge from corresponding nostrils, depression, partially closed eyes and head pressing suggestive of pain and may also be characterized by grinding of teeth. Similar observations were made by Divers and Peek (2008). Horn cancer is one of the common malignancies observed in castrated bovines. The available literature revealed that growth is mostly observed at base of horn resulting in swelling, change in shape and position of horn apparently visible due to asymmetrical horns, foul smelling, horn rubbing etc. The condition may be associated with hormonal imbalance resulting due to castration since it is mostly seen in castrated cattle than in cows, constant friction at base of horn due to moving yoke, use of lead paints for colouring the horns etc (Rajmani *et al*., 2012). History of trauma and fracture at tip of horn core, subsequent cutting of horn distal to fracture and letting the surgical wound open exposing the horn core and sinuses open to surroundings might have resulted in infection and irritation resulting in growth at tip in second case.

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