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Short Communication

EFECT OF VINCRYSTINE AND RHINOTOMY FOR NASAL TUMOUR IN A COW

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ABSTRACT: A six year old Bengal non-descript pregnant cow weighing 200kg with a hemorrhagic tumour mass in right nasal cavity attached to nasal septum compressing the left passage was presented with stretor, unilateral epistaxis and difficulty in breathing. Administration of Lithium Antimony thiomalate at deep intramuscular route was not effective. Vincrystine @0.025 mg/kg I/V was without response. The growth was removed by dorsal rhinotomy. Diathermy and diluted phenol were used for separation and hemostasis, respectively. In histopathology, the mass was diagnosed as chondro-adenofibroma.

Key words: Pregnant Indian cow, Nasal chondro-adenofibroma, Chemotherapy, Rhinotomy.

In cattle, extra skeletal location of chondroma or chondrosarcoma has rarely been reported (Richardson and Acland 1983, Uno *et al.* 1989). This communication describes the pathological features along with chemotherapeutic trials of a nasal chondro-adenofibroma in a non-descript pregnant cow where rhinotomy was the last measure to alleviate the sufferings of the animal.

History and observation

A six year old Bengal non-descript pregnant cow weighing approximately 200 kg with stertor, unilateral epistaxis and air hunger in ventilatory distress was presented in rural animal hospital in Amta-I block of West Bengal, India. On physical examination a hemorrhagic and compressive hard tumor mass in right nasal cavity attached to a large area of nasal septum was found (Fig. 1). Lithium Antimony thiomalate (®Anthiomaline, May & Baker India Ltd., Chennai, India, 1 ml contain 60 mg) 20 ml was applied intramuscularly followed by 15 ml on two occasions at deep route at weekly interval by the local Veterinarian, but was not effective.

Treatment with commonly used anti-cancer medicine Vincristine (Cystocristin aquous, 1mg/ml, CIPLA limited, Mumbai, India) @0.025 mg/kg body weight I/V (Das and Das 2000) was performed for 7 days and it was found refractory.

Treatment and discussion

For the purpose of diagnosis, a harvested piece of growth of 3-5 mm diameter, fixed in 10% buffered formalin for 48 hours was transferred into formic acid for 7 days for decalcification. The formic acid was changed every 24-48 hour. The piece was rinsed under running tap water for 5 minutes and processed as a block in paraffin. Sections were cut at 5 μm, and stained with H&E and Gram stain for histopathological evaluation. Microscopical examination of the growth was diagnosed as chondro-adenofibroma. Under microscope the encapsulation consisted of wavy mass of thick and tortuous connective tissue band running towards the center of growth (Fig. 2). The central matrix had innumerable goblet secreting cells consisting of mucoid discharge and was interpisetted with immature erythrocytes. The glands comprised of dilated spherical mass with void secretion. Angioinvasions were found throughout the section. The nucleus of epithelial cells and fibrocytes showed pleomorphism. No mitotic figure or abnormal nucleus: cytoplasm ratio was found. It was not a nasal granuloma. Therefore surgical treatment was decided.

Values of haematological and biochemical parameters were within normal ranges. The growth was removed by dorsal rhinotomy approaching from lateral aspect to protect the nasal septum under Diazepam (Calmpose ,

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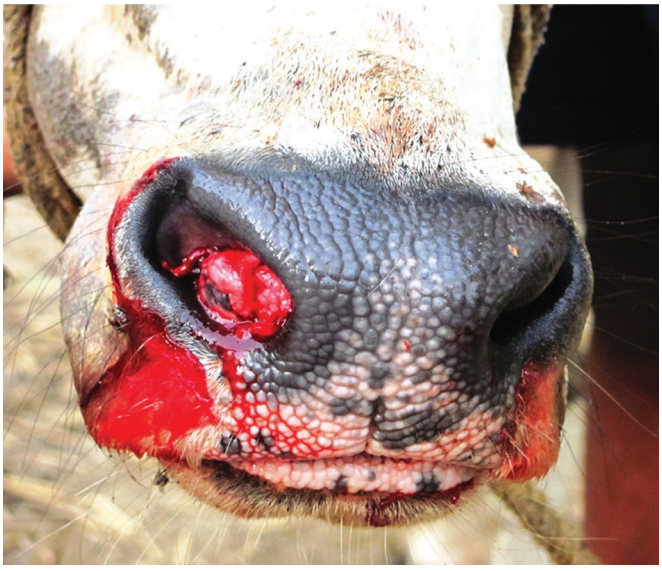

Fig.1. Shows Hemorrhagic Mass in right nasal cavity.

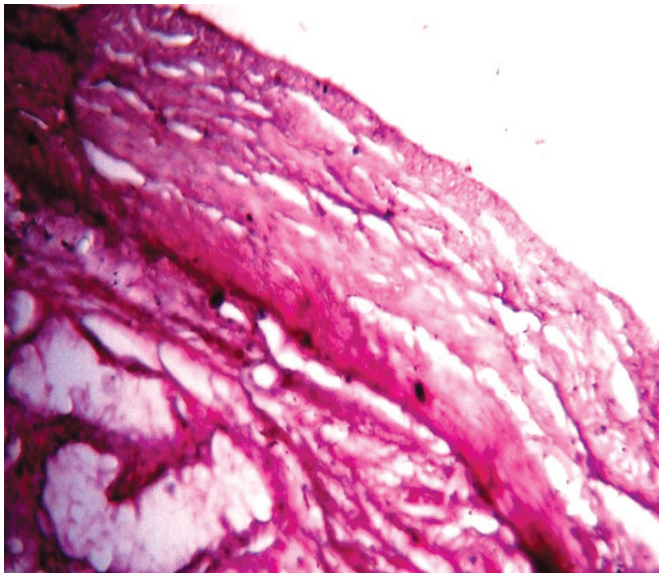

Fig. 2. Shows Nasal Chondro-adenofibroma with glandular proliferation, Angiogenesis and connective tissue band; 40XH&E.

Ranbaxy Ltd., New Delhi, India, 5 mg/ml) I/V (0.2 mg/kg), local infiltration of 2% lignocaine hydrochloride (Lox 2%, NEON Laboratories, Hyderabad, India) and infra-orbital nerve block. Obstetrical wire and Diathermy were used for separation and haemostasis, respectively. Diluted phenol for chemocautorisation to stop recurrence was touched on the cut surface of nasal septum. Macroscopically, the mass was well-circumscribed, lobulated, firm with sharp edge and solid with multiple small mucous filled cavities. Polychemotherapy protocol was not economic. The owner reported recurrence of the tumour 3 months after debulking and they sold the cow all on a sudden.

Though post-mortem was not possible, exploration during rhinotomy was enough for diagnosis of extend of the growth. Thoracic radiograph for metastasis in cow was not done as its general health was normal. Gross and histopathological features of this study were consistent with diagnosis of locally recurring chondroadenofibroma in the cow. Cartilaginous neoplasia in cattle and horse involves more often the flat bones (Thompson and Pool 2002, Beytut *et al*. 2006). Involvement of both mesenchymal and epithelial cell line in a single tumour tentacling flat nasal bone as in this cow is very rare in veterinary literature. Recurrences of nasal chondrosarcoma after removal by Rhinotomy have also been reported by Beytut *et al.* (2006) in cow as well as by Holt and Goldschmidt (2011) in 5 dogs with nasal septal osteolytic polyps. The histopathological feature of binucleated cells or lacunae with more than one chondrocyte was absent in the cow.

Conclusion

Analyzing several reports of chondrosarcoma (Beytut *et al.* 2006), squamous cell carcinoma (Baniadam *et al.* 2010) and malignant mescenchyoma (Puff *et al.* 2011) in cattle, chondro-adenofibroma in this report may be the rarest. Vincrystine, a mitotic inhibitor arrests the cell division in metaphase. The use of this agent in lymphoid or skeletal neoplasms is scarce in animals. Medium size nasal haemangioma was cured by vincrystine sulphate without surgery (Maji and Mukherji 2013). Other nasal tumors are protected from the "Kiss of death" by other member of VAC (Vincrystine, Adriamycin®, and cyclophosphamide) protocol. Following huge numbers of literature about therapeutic actions of Vincrystine on canine transmissible veneral tumour (CTVT) of mesenchymal origin including one in nasal cavity (Upadhaye *et al.* 2011), vincrystine was tried but could not act alone. Experience of refractory result by the above chemotherapy needs further investigation of this condition, to define the true incidence and to try to determine its detailed pathogenesis, to enable specific recommendations for prevention and treatment to be given.

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