

## DIAGNOSIS AND MANAGEMENT OF OSTEOSARCOMA IN ORAL CAVITY OF A COW

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### SUMMARY

An 11 years old cow was presented to Veterinary Clinical Complex, LUVAS, Hisar with history of large size growth on mandibular incisor region from six months and there was partial anorexia from one month. Physiological and haematological parameters were within normal range. After examination growth was excised under general anaesthesia. On the basis of histopathological features, it was diagnosed as osteosarcoma. Cow started feed and water intake normally after 10 days and recovered well in postoperative follow up of three month.

**Keywords:** Cow, Oral cavity, Osteosarcoma

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Tumours of odontogenic origin in domestic animals are rare and difficult for accurate diagnosis (Head *et al.*, 2002; Kumar *et al.*, 2019a). Oral tumours in bovine are more common at mandible region and rostral mandible is the most affected part (Kumar *et al.*, 2019a). Surgical excision of odontoma in cattle at mandible region is successful with good recovery (Dabas *et al.*, 2014; Tanwar *et al.*, 2016; Kumar *et al.*, 2019a). Vincristine sulphate is effective for the treatment of small size bovine oral tumours (Kumar *et al.*, 2019b); however surgical excision is required for large size bovine oral tumours (Kumar *et al.*, 2019c).

An eleven years old cow was presented to Veterinary Clinical Complex, LUVAS, Hisar with the history of large size ulcerated growth on mandibular incisor region from six months (Fig. 1). There was partial anorexia from one month may be because of this tumourous growth. All physiological and haematological parameters were within normal physiological range. Radiograph was not possible for the mandibular region because X-ray machine was out of order on that day. After examination removal of that growth was planned. General anaesthesia was given by xylazine and butorphanol as a pre-anaesthetic @ 0.05 mg/kg and 0.02 mg/kg b. wt and maintained on propofol @ 1.3 mg/kg b. wt by intravenous route. Growth was debulked along with incisor tooth and proximal mandibulectomy was done with orthopaedic wire (Figs. 2 and 3). Approximate weight of growth was 1.6 kg. Thesuturing was done of lower lips and inner lining of mandible region. The representative tissue sample from surgically excised growths was collected in 10% buffered formalin and sent for routine histopathological examination (Luna, 1968). The histopathological examination revealed pleomorphic neoplastic osteoblasts characterized with round to oval,

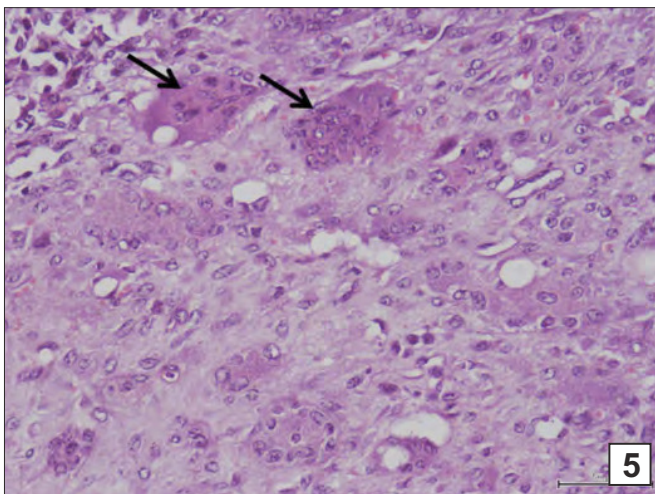
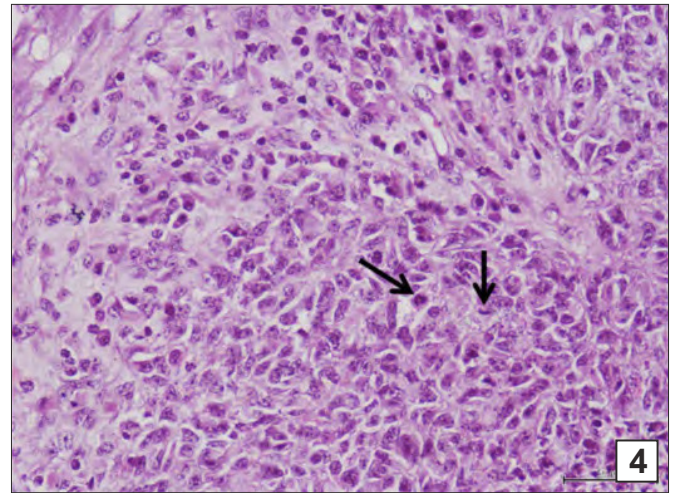
spindle shaped hyperchromatic nuclei, prominent single to multiple nucleoli and moderate to scant cytoplasm and mitotic figures (Fig. 4). Numerous multinucleated giant cells were also evident (Fig. 5). On the basis of histopathological features, it was diagnosed as osteosarcoma. Besides, tumour section also revealed haemorrhages, necrosis and infiltration of mononuclear cells and few neutrophils. Antibiotics (Dicrysticin 5g intramuscular) and analgesic (Inj.Melonex\*100 mg intramuscular) were prescribed for five days. Owner was advised to give liquid or semi-liquid diet for at least 7-10 days. After ten days cow started feed and water intake normally and recovered well in post-operative follow up for three month.

Mandibulectomy for treatment of oral tumours in cattle can result in acceptable cosmetic appearance without any functional impairment (Tetens *et al.*, 1995). p53 mutants may not play important role in bovine oral tumours and most of the oral tumours in bovine are benign in origin (Kumar *et al.*, 2020) but Jangir *et al.* (2021) found a rare case of liposarcoma in oral cavity of a buffalo which correlates with the findings of present case. It can be stated that the large sized oral tumour growth in cattle can well be managed by surgical excision.

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Figs. 1-5. (1) A large dome shaped ulcerated growth in the lower jaw of female cattle; (2) Extirpation of tumorous growth during mandibulectomy; (3) Removal of growth after mandibulectomy; (4) Photomicrograph of osteosarcoma exhibiting numerous multinucleated giant cells (arrows). H&E×400; (5) Photomicrograph of osteosarcoma showing pleomorphic neoplastic osteoblasts with round to oval, spindle shaped hyperchromatic nuclei, prominent single to multiple nucleoli, moderate to scant cytoplasm and mitotic figures (arrows). H&E×400

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