

Myxoma in the Nasal Cavity of a Holstein Cross Bred Cow

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ABSTRACT

This article describes a rare case of nasal cavity myxoma in a 5 year-old Holstein Friesian cross bred cow. Radiographically, a mass of soft tissue density in the right nasal cavity measuring 15 cm in length was observed. After removal, the growth was yellowish pink in color with a liver like consistency. Microscopically, it was diagnosed as myxoma. Myxomas are tumor of primitive connective tissue and are rare in the nasal cavity in farm animals. Surgical management of myxoma of nasal cavity in cattle was carried out safely under inhalant anesthesia with endotracheal intubation.

Keywords: Cattle; Nasal Obstruction; Fibromyxoma; Neoplasia.

INTRODUCTION

Obstruction of nasal cavity due to papillomatosis, actinobacillosis, nasal granuloma and tumors is relatively common in cattle (1). Multiple types of tumors in the nasal cavity of cow have been reported, which include chondrosarcomas (2), squamous cell carcinomas (3) and T-cell lymphomas (4). Myxoma is a tumour of primitive connective tissue. It has been reported at various sites in farm animals, including a case of congenital cutaneous myxoma in cattle (5), in the limb of two aged cows (6), interdigital myxoma in a Harijana cow (7), fibromyxoma in the reticulo-omasal orifice of a cow (8), odontogenic myxoma of the mandible in a filly (9) and myxoma of rectum in a buffalo (10). Portella *et al.* (2010) reported a single case of myxoma in cattle along with two other cases of acute rhinitis and fibrosarcoma (11). The present case report describes the clinical signs, radiography, successful surgical management and histopathological findings of a rare case of myxoma in a Holstein cross-bred cow.

CASE HISTORY AND CLINICAL OBSERVATION

A 5 year old Holstein cross bred, non-pregnant cow weighing 346 kg was presented to the Department of Veterinary Surgery and Radiology, with the history of nasal stridor, dyspnea and a soft tissue swelling at the site of lacrimal/maxillary bone on the right side (Fig. 1). On clinical examination, the cow showed respiratory distress from the right nasal cavity, while the left was normal. Feed and water intake of the cow was normal and the animal was healthy in appearance. The lung sounds were clear on auscultation from both sides. The soft tissue swelling present on the right side was once incised by the field veterinarian considering it to be an abscess. A slight sero-sanguinous discharge was reported to be draining through it.

Lateral (Fig. 2) and dorso-ventral (Fig. 3) radiographs of the nasal cavity revealed a mass of soft tissue density in the maxillary region of the right nasal cavity. Radiographic mea-

Figure 1: Photograph showing soft tissue swelling in the right maxillary bone region



Figure 2: Radiograph showing soft tissue density (black line) in the caudal nasal cavity region on lateral view

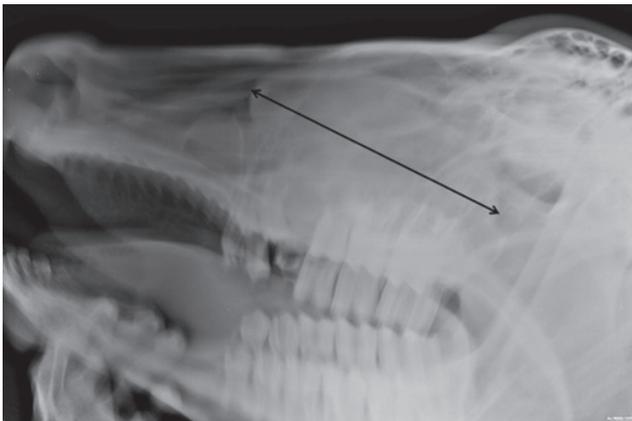
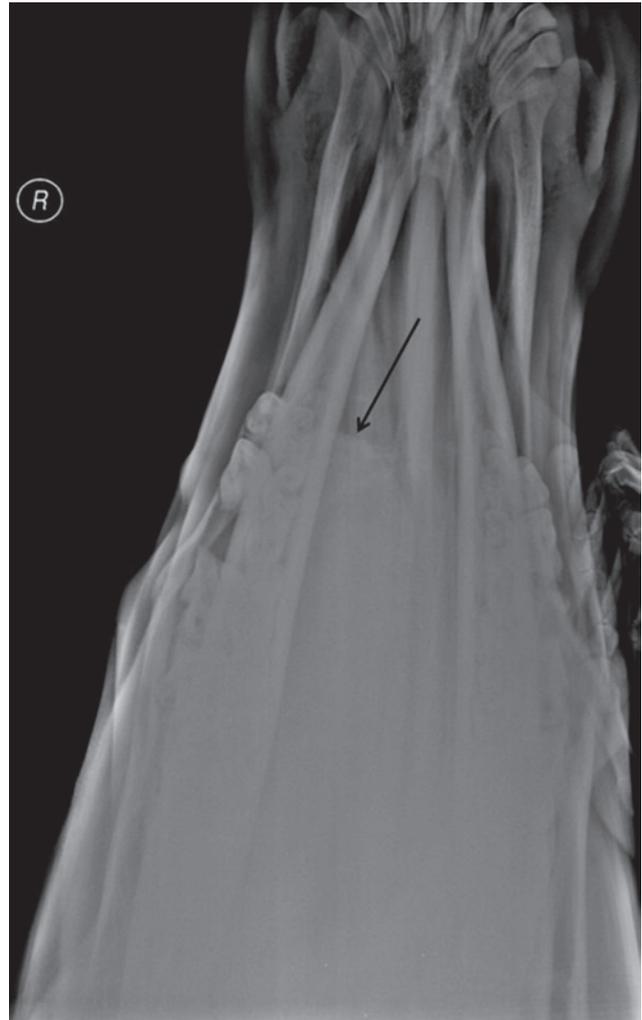


Figure 3: Dorso-ventral radiograph of nasal cavity showing soft tissue density (black arrow) in the caudal region on the right side



surement of the growth was assessed to be 15 cm in length. Surgical resection of the growth was advised to the owner after providing information of the possible associated risks.

Surgery was planned under general anaesthesia. The cow was kept off-feed and water for 24 hrs. Premedication was carried using injectable midazolam (Neon Laboratories Ltd., Mumbai, India) @ 0.2 mg/kg, intravenously, followed by induction with injectable ketamine hydrochloride (Neon Laboratories Ltd., Maharashtra, India) @ 5mg/kg intravenously. Endotracheal intubation (internal diameter-22mm) was used and the animal was maintained under inhalant anaesthesia using Isoflurane (Raman and Weil Pvt. Ltd, Daman, India) mixed with 100% oxygen.

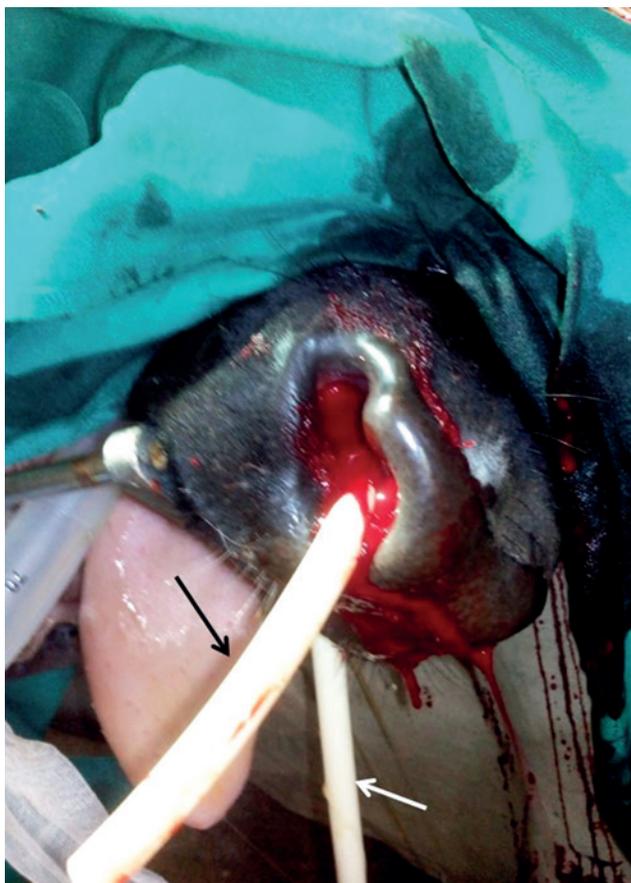
The nasal cavity was approached transcutaneously through an incision over the soft tissue swelling in the right

lacrima/maxillary sinus region. The nasal bones were soft and trephining was not required. The cavity was completely obliterated with the growth. The growth was removed in pieces, which later weighed 1.285 kgs. The growth was yellowish pink in color with normal liver like consistency (Fig. 4). To assure the patency of nasal cavity and to avoid pushing back the growth in the nasopharynx area, a hand guided retrograde nasogastric tube was passed from the pharynx to the nares through oral cavity (Fig. 5). The tube passed without any obstruction. Intra-operative bleeding was substantial which was controlled using adrenaline bitartrate (Pharma Cure Labs, Garha, Jalandhar, India) soaked cotton bandage packed into the nasal cavity and systemic administration of 20ml trenaximic acid (Zakshot-Carus Lab. Pvt. Ltd., New Delhi, India) intravenously.

Figure 4: Photograph showing pieces of growth after removal from the nasal cavity

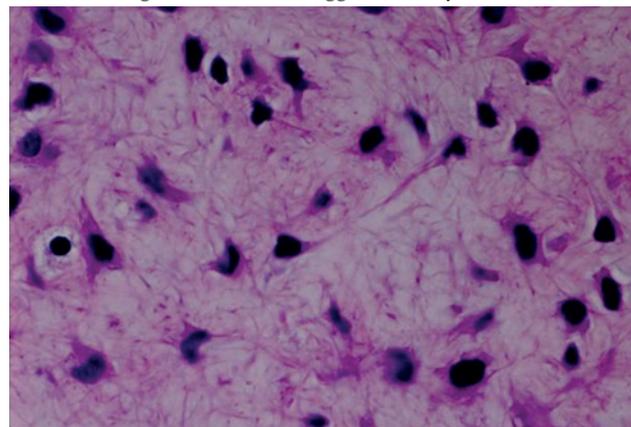


Figure 5: Photograph showing patency of right nasal cavity with a hand guided retrograde nasogastric tube passed from the pharynx to the nares (black arrow) through oral cavity (white arrow).



The skin incision was closed with cross mattress sutures using black braided silk (No 1). The sutures were advised to be removed after 10 days. Post-operative antibiotics and analgesic care included Inj. Ampicillin-cloxacillin (AC-Vet -

Figure 6: Photomicrograph showing stellate shaped cells embedded in abundant ground substance suggestive of myxoma (H&E 10x).



Intas Pharmaceuticals Ltd., Ahmedabad, India) @ 10 mg/kg body weight, twice daily for 7 days and injectable Meloxicam (Melonex - Intas Pharmaceuticals Ltd., Ahmedabad, India) @ 0.2mg once daily for 3 days, intramuscular, respectively. The retention gauze bandage placed into the nasal cavity was removed after 24 hours.

The excised sample was preserved in 10% neutral buffered formalin and submitted for histopathological examination. The tissue sample was processed with graded alcohol treatment and embedded in paraffin wax. Tissue slides were sectioned at 4-5 μ thickness. Representative slides were stained with hematoxylin and eosin (H&E) as per the standard procedure. Microscopically, the tumor was poorly cellular and had abundant stained amorphous ground substance. It consisted of large stellate, triangular and some round mesenchyme like cell with vesicular nuclei (Fig. 6). The cells formed a meshwork due to cytoplasmic processes. Mitotic figures were extremely rare. On the basis of typical microscopic findings it was confirmed as myxoma of the nasal cavity.

Five month post-operative follow up revealed the cow to be healthy with no respiratory distress and was three months pregnant.

RESULTS AND DISCUSSION

Tumors located in the nasal cavity show clinical signs of stridor, purulent nasal discharge and nasal obstruction when they completely fill the nasal cavity (2, 12). In the present case report, all the clinical signs except nasal discharge from the affected nasal cavity were observed. The absence of discharge may have been due to the smooth consistency

of the growth. The tumor was successfully identified with the aid of dorso-ventral and lateral radiographs of the nasal cavity. Surgical management of such tumors of nasal cavity in cattle is frequently reported, but the attempt made by the authors was successful under general anesthesia. Tumors of nasal cavity tend to bleed profusely from the surgical site, but in this case stuffed adrenaline soaked bandage was successful for control of the hemorrhage. Endotracheal intubation with oxygen was found to be essential in attempting respiratory surgeries due to complications relating to inspiration (13).

Fibroma and myxoma are uncommon tumors in large animals (8). Myxomas are tumors of fibroblastic origin distinguished by their abundant myxoid matrix rich mucopolysaccharides (14). Histologically the tumor was characterized by stellate to fusiform shaped cells (15, 16), abundant amorphous ground substance which formed a meshwork (15), which was typical of the histopathological findings of this case.

CONCLUSION

Nasal myxomas are rare in farm animals, and surgical management of myxoma of nasal cavity (maxillary sinus) in cattle can be safely accomplished under inhalant anesthesia with endotracheal intubation. Evidence for the success of the surgery was seen five month post-operatively when the cow was healthy with no respiratory distress and three months pregnant.

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