

## NASAL OBSTRUCTION IN BOVINE: REPORT OF EIGHT CLINICAL CASES

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### SUMMARY

This report is based on eight clinical cases of bovine nasal obstruction brought to the university clinic over a period of three years. The clinical signs observed in these cases were dyspnoea, mouth respiration, partial reduction in food intake and blood tinged nasal discharge. The radiographic examination of nasal area was done to ascertain the cause and location of nasal obstruction. The rhinotomy revealed that the nasal cavity was obstructed due to the nasal neoplasm in four cases (2 buffaloes and 2 bullocks), nasal cyst in two cases (1 buffalo and 1 bullock) and nasal abscess in remaining two buffaloes. The nasal obstruction was cleared off surgically. The post-operative treatment with antibiotics, anthiomaline, nasal inhalation and antiseptic dressing of surgical wounds was continued for 5-10 days. Two cases of neoplasm, two of cyst and two of abscess showed smooth recovery but two cases of nasal obstruction having osteomyxoma / fibrosarcoma were euthanised.

**Key words:** Nasal obstruction, bovine, nasal neoplasm, nasal cyst, nasal abscess

Nasal obstruction is not so common in domestic animals. There are few reports regarding nasal obstruction due to various neoplasms such as squamous cell carcinoma in cows (Pycock *et al.*, 1984) and osteoma in horses (Schumacher *et al.*, 1988) In the present report, 8 clinical cases have been discussed in bovine with the observation that nasal obstruction was caused by neoplasms, cysts and abscesses affecting either one side or both sides of nasal cavity. The detail of history of these cases is described in Table 1.

**History and clinical examination:** Eight cases of bovine including 5 buffaloes and 3 cattle were admitted to the College Clinic over a period of 3 years with complain of respiratory problems for the last 2 to 5 months. Earlier the cases were treated with drugs such as oxytetracycline, meloxicam, local inhalatory drug and vitamin B-complex but without much improvement. History revealed fever in three cases (2 buffaloes and 1 bullock) and reduction in feed intake. After treatment of ten days animals were maintained

on fluid therapy but animals did not show improvement and finally the animals were reported to the University Hospital. At the time of admission to the University Hospital, the animals were showing signs of respiratory discomfort characterized by dilatation of nostrils, stretching of neck (1 buffalo and 2 bullock), mouth respiration (2 buffaloes and 1 bullock) and even snoring in 2 cases (1 buffalo and 1 bullock). There was blood tinged mucus discharge in four cases (2 buffaloes and 2 bullocks) and mucopurulent discharge in 2 cases (2 buffaloes) from both nostrils. In one buffalo the growth was visible protruding out of the nostril (Fig 1). There was a nasal protuberance in 3 cases (2 buffaloes and 1 cattle) and even bursting of the nasal bone in one case (buffalo, Fig 2). There was reduction in feed intake depending upon the extent of nasal obstruction. In cases where obstruction was partial 5 cases (3 buffaloes and 2 bullocks), the animals were taking little quantity of feed and in those cases (2 buffaloes and 1 bullock) where obstruction was complete and the animals were respiring through open mouth the animal were totally off feed. There was ocular discharge from both eyes in two cases (one buffalo and one bullock). Cotton roll thread was placed before

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Fig 1. Neoplastic growth protruding out of the nostril.



Fig 2. Nasal bone burst due to abscess.

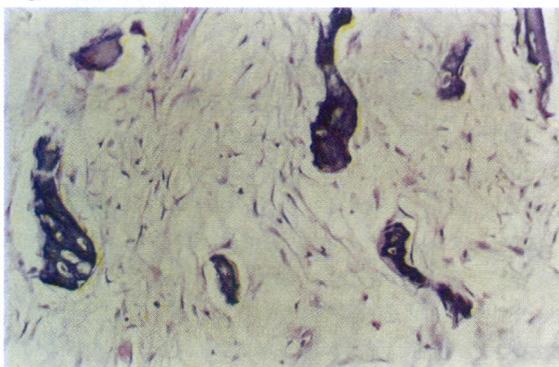


Fig 3. Osteoma showing fibrous connective tissue matrix with irregular bony trabeculae.

both nostrils. It showed movement in 5 cases indicating partial nasal obstruction and there was no movement in 3 cases showing that nasal obstruction was complete. On percussion of the nasal bone with hammer, sound was dull at the site of obstruction. Dull sound was observed from mid portion of the nasal bone up to the frontal bone on both side of nasal cavity in three cases (1 buffalo and 2 bullocks), on right side in two buffaloes and on left side in one buffalo. In other buffaloes, the pus was oozing out through the ruptured bone. The patency of the nasal

cavity was also checked by passing small diameter nasogastric tube. The tube could be passed in five cases where obstruction was partial. To judge the exact location of the lesion, the cases were referred for the radiography of the nasal area. After ascertaining the location and depth of the obstructing material, the line of treatment was decided. A long Allis tissue forceps was introduced into the affected nasal cavity and a small piece of obstructing material was collected in four cases (2 buffaloes and 2 bullocks) for histopathological examination and the cases where Allis tissue forceps got smeared with pus or watery material, swab sample of pus (2 buffaloes) and watery material (1 buffaloes and 1 bullock) were collected and sent for cultural examination and antibiotic sensitivity testing.

**Surgical management:** The animals were controlled and secured in standing position after sedation with Xylazine (0.1 mg/kg) body weight. After deciding depth of the lesion on the basis of passing of nasogastric tube and radiography the mode of approach was decided whether through nostril or after opening of the nasal cavity through rhinotomy (Fig 3) In cases of rhinotomy the site over affected part of nasal cavity was prepared and infiltrated with 2% lignocaine hydrochloride to achieve local analgesia. Further details of operation are described in Table 1.

**Histopathological examination:** It revealed osteoma (1 bullock), papilloma (1 bullock) osteomyxoma (1 bullock) and fibrosarcoma (1 buffalo). The osteoma was characterized by the presence of fibrous connective tissue matrix intervened in between by irregular bony trabeculae. The matrix has mucoid appearance. In papillomatous growth histopathology showed projections consisting of connective tissue core in the centre and keratinized mass in the periphery. The osteomyxoma was characterized by star shaped fibroblasts with the light homogenous basophilic mass and presence of bony tissue in between the cytoplasmic process. In fibrosarcoma, there were interlacing bundles of immature fibroblasts giving whirl like appearance.

**Discussion:** The cultural examination of pus material (2 buffaloes) showed *Staphylococcus* infection which was found sensitive to routine

**Table 1**  
**Types of lesions, surgical approaches and outcome of the clinical cases**

Species	Lesion	Mode of approach	Involvement of nasal cavity	Post-operative care	Out come
Bullock	Osteoma	Rhinotomy (over the lesion)	Growth was attached to nasal septum-extending upto maxillary bone	Inj. Streptopenicillin (5 gm i/m, 5 days), Inj. Anthiomaline (15 ml, deep i/m, 5 days alternatively), Turpentine oil inhalation, Antiseptic dressing with Betadine	Cured
Bullock	Papilloma	Through nostril (by whelping forceps)	Nasal bone	Same as above besides Inj. Chromostat (20 ml i/m, 3 days)	Cured
Buffalo	Osteo-myxoma	Rhinotomy	Spongy mass was extending upto orbit	As in column first (reoccurred after 20 days)	Euthanised
Buffalo	Fibro-sarcoma	Rhinotomy	Entire nasal cavity, nasal septum and eye	Attempt was made to remove surgically but entire mass could not be removed	Euthanised
Bullock & buffalo	Cyst	Rhinotomy	Nasal bone	As in column first except anthiomaline	Cured
Buffalo	Abscess	Rhinotomy through maxillary bone	Turbinates were involved	About 1 kg pus was removed and Inj. Streptopenicillin (5g i/m, 5 days), flushing of nasal cavity with normal saline followed by eucalyptus oil inhalation	Cured
Buffalo	Abscess	Rhinotomy through maxillary bone	Turbinates were involved	About 1.5 kg pus was removed, Inj. Streptopenicillin (5g i/m, 5 days), flushing of nasal cavity with normal saline, and eucalyptus oil inhalation	Cured

antibiotics. Nasal cavity acts as a filter for the inspired air separating dust particles from the inhaled air. The deposition of these particles over mucus lining of the nasal cavity may cause proliferation of the nasal epithelium converting it into a neoplasm or may act as a nidus for abscess formation. Clinically it is very difficult to differentiate the cause of nasal obstruction however, growths on anterior side and advanced stage of caudal neoplasm can be seen protruding out of the nostril. The use of radiography is essential to ascertain the type of lesion. The cases of osteoma and papilloma were easy to treat and there was no recurrence in such cases. Use of anthiomaline after surgery was very effective to check the recurrence. Schumacher *et al.* (1988) also did not observe any recurrence in a case of osteoma in a horse. In cases of osteomyxoma and fibrosarcoma, surgery could not prove to be of much use and finally both buffaloes were euthanised as described by Pycock *et al.*, 1984. In cases of nasal abscesses, the maxillary bones were trephined to evacuate the pus and flushed with 0.9 % normal saline solution. The inhalation of eucalyptus oil helped to quick respiration through the affected nostril. The cases of nasal cysts were opened through nasal bone and the animals started respiring immediately after clearance of serous fluid containing cyst from the nasal cavity. Turpentine oil inhalation was very soothing in post-operative surgery. The cases of nasal obstruction due to nasal cysts and nasal abscesses were easy to manage and responded earlier as compared to the cases of nasal neoplasm

## REFERENCES

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