**Clinical Article**

**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, antihistamine, 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 mucopurulant 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...
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 buffalo 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

<table>
<thead>
<tr>
<th>Species</th>
<th>Lesion</th>
<th>Mode of approach</th>
<th>Post-operative care</th>
<th>Involvement of nasal cavity</th>
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<th>Post-operative care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullock</td>
<td>Osteoma</td>
<td>Rhinotomy (over the lesion)</td>
<td>Inj: Septrin (5 gm, i.m., 5 days), i.f: Penrose (15 ml, deep i.m, 5 days alternatively), Turpentine oil (20 ml, i.m., 3 days)</td>
<td>Spongy mass was extending up to maxillary bone and nasal septum</td>
<td>Enucleated and responded earlier as compared to 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.</td>
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<td>Buffalo</td>
<td>Papilloma</td>
<td>Through nostril by means of forceps</td>
<td>As in colon first (mucuced after 20 days)</td>
<td>Entire nasal cavity, nasal septum and eye</td>
<td>Attempt was made to remove surgically but entire mass could not be removed</td>
<td>About 1 kg pus was removed, i.f: Septrinpcillin (5 gm, i.m., 5 days), flushing of nasal cavity with normal saline followed by eucalyptus oil inhalation</td>
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<td>Bullock</td>
<td>Osteomyxoma</td>
<td>Through nostril by means of forceps</td>
<td>As in colon first (mucuced after 20 days)</td>
<td>Spongy mass was extending up to maxillary bone and nasal septum</td>
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<td>Buffalo</td>
<td>Fibrosarcoma</td>
<td>Through nostril by means of forceps</td>
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<td>Buffalo</td>
<td>Cyst</td>
<td>Through nostril by means of forceps</td>
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<td>Buffalo</td>
<td>Abscess</td>
<td>Through nostril by means of forceps</td>
<td>As in colon first (mucuced after 20 days)</td>
<td>Spongy mass was extending up to maxillary bone and nasal septum</td>
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**REFERENCES**
