CASE REPORT

Successful Diagnosis and Treatment of Naso-Sinual Myxosarcoma in a Dog

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Nasal and paranasal sinus tumours are relatively uncommon in dogs, accounting for approximately 1-2% of all canine neoplasms. However, they constitute the majority of tumours affecting the upper respiratory tract in dogs (Withrow *et al.,* 2020). These tumours are predominantly malignant and locally invasive, leading to progressive destruction of surrounding soft tissues and bony structures of the nasal cavity and paranasal sinuses (Thrall and LaRue, 1995). Clinical manifestations commonly include unilateral or bilateral nasal discharge, epistaxis, sneezing, facial deformity, stertor and dyspnoea (Ettinger *et al.,* 2017). Carcinomas are the most commonly reported canine nasal tumours, whereas sarcomas occur less frequently (Meuten, 2017). Myxo-sarcomas are classified as soft tissue sarcomas of fibroblast origin with an abundant myxoid matrix composed of mucopolysaccharides (Meuten, 2017). The prognosis is generally poor because of the high rates of local recurrence and metastasis (Gage *et al.,* 2019).

Advanced diagnostic modalities such as rhinoscopy and computed tomography (CT) are important for evaluation of tumour extent, turbinate destruction and sinus involvement (Adams *et al.,* 2009). Histopathological examination remains the gold standard for definitive diagnosis. Therapeutic approaches commonly involve surgery, radiation therapy and chemotherapy either alone or in combination depending upon tumour type and extent of disease (Dernell *et al.,* 1998). The present case report describes the clinical presentation, diagnostic findings, surgical management and chemotherapeutic treatment of naso-sinusal myxosarcoma in a dog.

Case History and Observations

An 8-years old Labrador dog was presented with the history of unilateral left side nasal bleeding and forceful sneezing with poor mentation since last one month. Clinical examination showed normal body temperature and mucus membrane. The haematological parameters revealed neutrophilic leucocytosis (TLC, 30.90 x10^3/µL), elevated SGPT (165.90 U/L), ALP (460.80 U/L) and decreased serum albumin (1.74 g/dL).

Rhinoscopic examination of left nasal cavity revealed an irregular, friable, proliferated soft tissue mass occupying the nasal passage. Mucosal surface appeared markedly congested and hyperamic with multifocal haemorrhagic areas. The lesion was pink to reddish in appearance with uneven nodular projections causing complete obstruction of nasal lumen, mild mucopurulent discharge ad-mixed with blood clots around the mass. The surrounding nasal mucosa showed oedema and inflammatory changes while normal turbinate architecture was poorly visualised due to obstruction by the proliferative tissue growth (Fig.1). Cytological examination revealed low to moderate cellularity comprising of clusters of epithelial cells with mild to moderate pleomorphism. Cells showed oval to elongated nucleoli with clumped chromatin with basophilic cytoplasm and moderate haemorrhagic background. No fungal elements seen on microbiological examination. The dog was immediately treated with IV fluids (Inj. DNS 5% 500 mL), antibiotics (Inj. Clindamycin @ 10 mg/kg b. wt., IM and Metronidazole @ 10 mg/kg b. wt., IV), corticosteroid (Inj. Prednisolone @ 1 mg/kg, b. wt., M), multivitamin (Inj. Polybion @ 2 mL, IM), and Ethamsylate @ 250-500 mg.

The animal was scanned with a 16-row whole-body X-ray computed tomography (CT) device. The CT findings at the initial visit are shown in Figure 2a. The whole nasal passage was full of soft tissue growth. The nasal septum was normal. CT of the skull revealed a unilateral soft tissue attenuating

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Fig. 1: Rhinoscopic view of nasal cavity

mass occupying the right nasal cavity with extension into the ipsilateral frontal sinus (Fig. 2b). Marked destruction of the nasal turbinates and destruction of the nasal septum were observed. Mild bony lysis and remodeling of adjacent osseous structures were evident. The lesion caused near complete obliteration of the right nasal passage, while the contralateral nasal cavity remained comparatively normal and air filled (Fig. 2c). No obvious intracranial extension was observed in the evaluated sections.

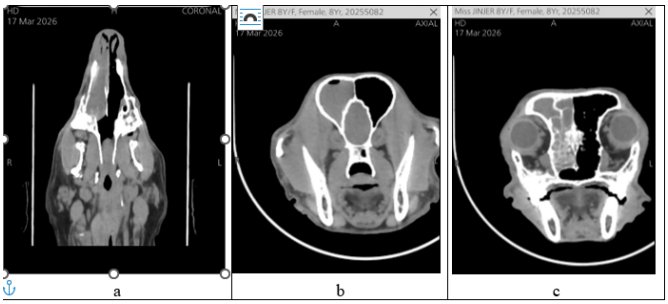


Fig. 2: CT scan images, (a). Showing whole nasal passage full of soft tissue. (b). Skull revealed a unilateral soft tissue attenuating mass occupying the right nasal cavity with extension into the ipsilateral frontal sinus. (c). Showing complete obliteration of the right nasal passage, while the contralateral nasal cavity remained comparatively normal and air filled

Surgical Treatment and Discussion

Animal was positioned in lateral recumbency with affected side up and aseptically prepared for surgery. A dorsal midline incision was made over the left nasal bone extending from the level of frontal bone to the rostral aspect of nasal cavity. The subcutaneous tissues and periosteum were bluntly dissected and reflected laterally to expose the nasal bone. Using osteotome and bone cutting instruments dorsal rhinotomy was performed to assess the nasal and paranasal sinus cavity. On exploration proliferative friable growth occupying the left naso-sinusal space was identified (Fig. 3). The mass was carefully separated from surrounding mucosal attachments using blunt and sharp dissection. Multiple tissue fragments and necrotic debris were removed with forceps until the nasal cavity was adequately patent (Fig. 4). The cavity was thoroughly lavage with sterile normal saline to remove residual blood clots and tissue debris. The bony flaps were repositioned after complete removal of the growth. Periosteum and subcutaneous tissue were apposed in routine manner and skin closure was performed with interrupted non-absorbable suture (Fig. 5). Post-operatively the animal was treated with antibiotic, anti-inflammatory and analgesic. The surgical wound repaired uneventfully.

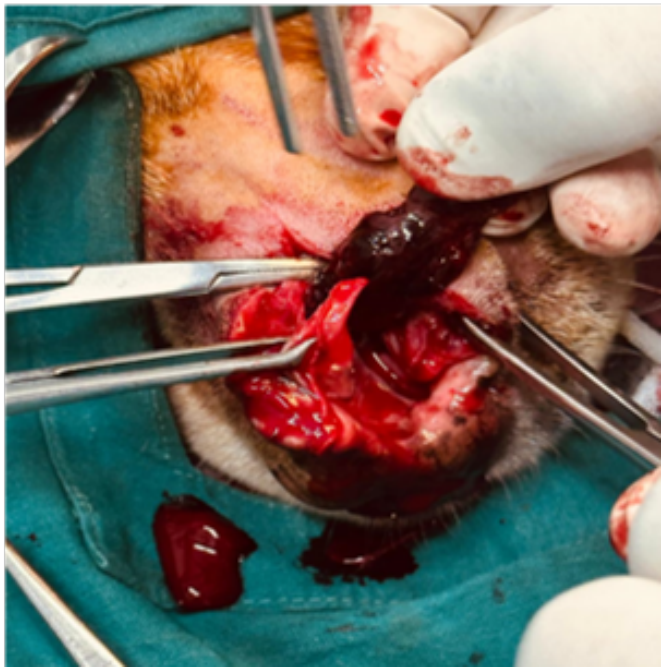


Fig. 3: Surgical exposure of intra-nasal mass

Surgically reduced mass on histological section revealed proliferation of stellate to spindle-shaped fibroblasts loosely arranged in an abundant myxoid matrix with low mitoses suggestive of myxosarcoma (Fig. 6). After surgical reduction and histopathological confirmation of myxo-sarcoma, chemotherapy protocol consisting of Doxorubicin and Prednisone was instituted. Doxorubicin was administered intravenously @ 30 mg/m^2 body surface area as slow IV infusion once every 21 days for a total of 5 cycles. Prednisone was administered orally @ 1 mg/kg b.wt. once daily for 7 days followed by gradual tapering over the succeeding 3-4 weeks. Repeat CT to assess recurrence was advised but owner declined it for financial reasons.

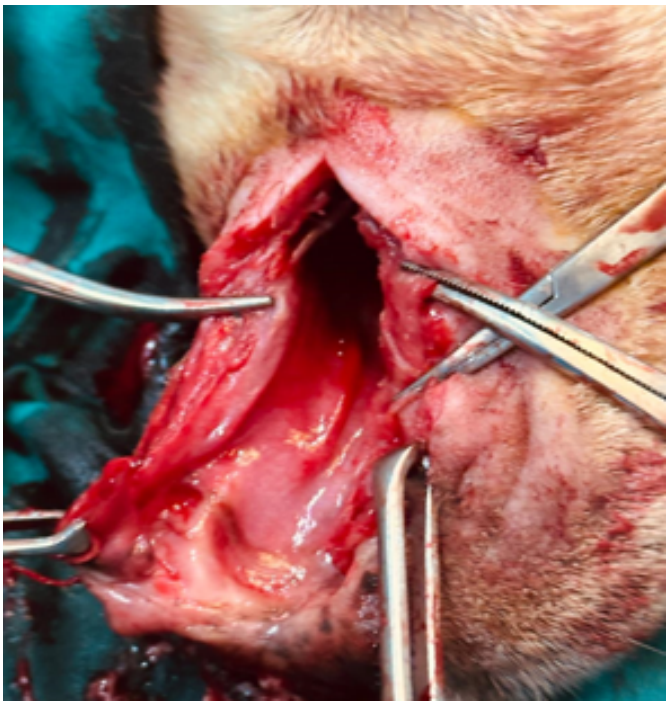


Fig. 4: Removal of nasal mass during surgery



Fig. 5: Excised red nasal mass

Myxosarcoma is a malignant mesenchymal neoplasm of fibroblastic origin characterized by abundant myxoid extracellular matrix rich in mucopolysaccharides (Meuten, 2017). These tumours are considered biologically aggressive because of their infiltrative growth pattern, high local recurrence rate and occasional metastatic potential (Gage *et al.,* 2019). Nasal tumours are primarily reported in middle-aged to older dogs, particularly in mesocephalic

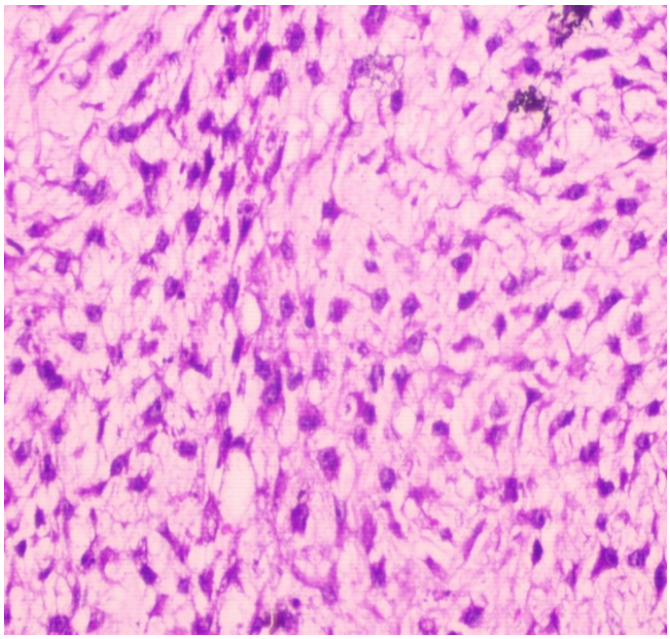


Fig. 6: Histopathology section showing proliferation of stellate to spindle- shaped fibroblasts loosely arranged in an abundant myxoid matrix

and dolichocephalic breeds (Withrow *et al.,* 2020). In the present case, the Labrador dog exhibited unilateral epistaxis, forceful sneezing and nasal obstruction, which are among the most commonly reported clinical signs associated with canine nasal neoplasia (Ettinger *et al.,* 2017). Persistent unilateral nasal discharge and epistaxis are considered highly suggestive of intranasal neoplastic disease in geriatric dogs (Thrall and LaRue, 1995). The neutrophilic leukocytosis with toxic changes observed in this case indicated an inflammatory response associated with tumour necrosis and secondary bacterial infection. Elevated SGPT and ALP levels along with hypoalbuminemia may be attributed to chronic inflammatory stress and systemic effects of malignancy. Similar haematobiochemical alterations have been reported in dogs with chronic neoplastic conditions (Fossum, 2019).

Cytological and histopathological examinations suggested a mesenchymal neoplasm. Similar histological features have been described in soft tissue myxosarcomas of dogs (Meuten, 2017). Computed tomography is regarded as the imaging modality of choice for canine nasal tumours because it provides superior assessment of soft tissue invasion, turbinate destruction and bony lysis (Adams *et al.,* 2009). In the present case, CT examination demonstrated extensive soft tissue proliferation with destruction of nasal turbinates and frontal sinus involvement, findings that are characteristic of aggressive nasal sarcomas (Dernell *et al.,* 1998). Surgical debulking through dorsal rhinotomy was performed to relieve airway obstruction

and reduce tumour burden. Complete surgical excision of nasal tumours is often difficult due to extensive local invasion and anatomical constraints within the nasal cavity (Fossum, 2019). Nevertheless, surgical intervention can significantly improve respiratory function and quality of life in affected dogs. Doxorubicin is commonly used as postoperative chemotherapy for management of soft tissue sarcomas because of its cytotoxic activity against rapidly proliferating mesenchymal cells (Withrow *et al.,* 2020). Combination therapy involving surgery and chemotherapy may improve clinical outcome and delay recurrence in dogs with incompletely re-sectable sarcomas (Dernell *et al.,* 1998).

In general, the present report highlights the importance of comprehensive diagnostic evaluation including rhinoscopy, computed tomography and histopathology in dogs presenting with chronic unilateral epistaxis and nasal obstruction. Early diagnosis and multimodal therapeutic management may improve prognosis and quality of life in dogs affected with naso-sinusal myxosarcoma.

References

Adams, W. M., Kleiter, M. M., Thrall, D. E., Klauer, J. M., Forrest, L. J., La Due, T. A., & Havighurst, T. C. (2009). Prognostic significance of clinical staging of nasal tumours in dogs. *Veterinary Radiology and Ultrasound, 50*, 330–335.

Dernell, W. S., Straw, R. C., & Cooper, M. F. (1998). Multimodality treatment of canine nasal tumors. *Veterinary Clinics of North America: Small Animal Practice, 28*, 147–165.

Ettinger, S. J., Feldman, E. C., & Cote, E. (2017). *Textbook of veterinary internal medicine* (8th ed.). Elsevier.

Fossum, T. W. (2019). *Small animal surgery* (5th ed.). Elsevier.

Gage, M. M., Nagarajan, N., Ruck, J. M., Canner, J. K., Khan, S., Giuliano, K., Gani, F., Wolfgang, C., Johnston, F. M., & Ahuja, N. (2019). Sarcomas in the United States: Recent trends and a call for improved staging. *Oncotarget, 10*, 2462–2474.

Meuten, D. J. (2017). *Tumours in domestic animals* (5th ed.). Wiley-Blackwell.

Thrall, D. E., & LaRue, S. M. (1995). Treatment of nasal tumours in dogs by radiation therapy. *Veterinary Clinics of North America: Small Animal Practice, 25*, 1383–1409.

Withrow, S. J., Vail, D. M., & Page, R. L. (2020). *Withrow and MacEwen's small animal clinical oncology* (6th ed.). Elsevier.