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Malignant Round Cell, Tumour in the Nasal Cavity in unusual site – A Case Report

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ABSTRACT
Tumours of the nasal cavity are uncommon, and their occurrence at unusual anatomical sites may create diagnostic and therapeutic challenges. We report a case of an 18-year-old female student who presented with right-sided nasal obstruction and blood-stained nasal discharge for six months. Diagnostic nasal endoscopy revealed a reddish, smooth, bulky mass occupying the right nasal cavity and arising from the lateral wall. CT of the paranasal sinuses showed a homogeneous mass involving the right maxillary and ethmoid sinuses, without obvious gross intraorbital extension. The patient underwent endonasal surgical excision of the mass. Histopathological examination revealed a malignant round cell tumour. Immunohistochemistry showed positivity for CD99, desmin and MYOD1, with a Ki-67 index of 90%, and was consistent with embryonal rhabdomyosarcoma. The patient subsequently received radiotherapy and chemotherapy.

KEYWORDS: Nasal cavity, malignant round cell tumour, embryonal rhabdomyosarcoma, immunohistochemistry, sinonasal tumour.

I. INTRODUCTION

Tumors of the nasal cavity are uncommon. Occurrence at unusual anatomical sites poses diagnostic and therapeutic challenges. We present a case of a rare tumour arising from the nasal cavity.

II. CASE PRESENTATION

An 18-year-old female student presented with complaints of right-sided nasal obstruction and blood-stained nasal discharge for 6 months. She also had a history of headache, postnasal drip and watering from the right eye. There was no history of difficulty in breathing or smell disturbances.

III. EXAMINATION

The patient was conscious and oriented, with stable vital signs. There was no pallor, icterus, cyanosis, clubbing, lymphadenopathy or edema. Systemic examination was unremarkable.

External examination of the nose showed normal root, dorsum, supratip, tip and ala. The nasolabial groove was absent on the right side, while the nasomaxillary groove was normal.

Anterior rhinoscopy showed a reddish, smooth, regular, bulky, soft mass in the right nasal cavity that bled on touch. On probing, it was attached to the lateral wall of the nose. The nasal septum was deviated to the left, the mucosa was congested and blood-stained nasal discharge was noted.

Diagnostic nasal endoscopy showed a smooth, regular, reddish bulky mass occupying the right nasal cavity, arising from the lateral wall and extending superiorly up to the axilla of the middle turbinate and inferiorly up to the inferior turbinate. It was not attached to the septum. The nasal septum was deviated to the left and both choanae were free.

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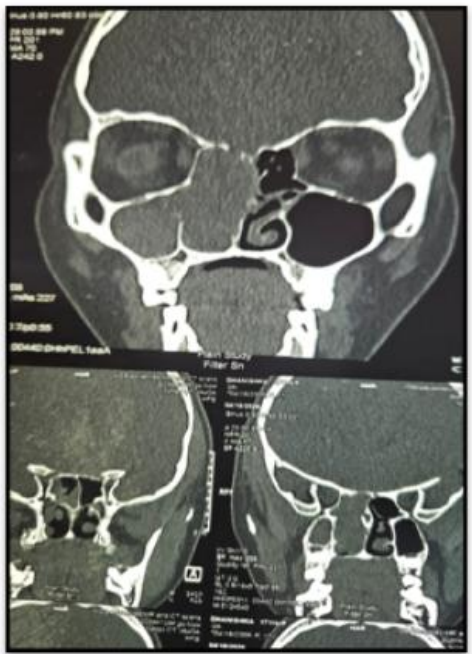
IV. INVESTIGATIONS



CT of the paranasal sinuses showed a homogeneous mass in the right maxillary and ethmoid sinuses. The right maxillary sinus was entirely filled with soft-tissue density extending up to the right ethmoid air cells. There was marked deviation of the nasal septum to the left. The orbital floors and walls appeared intact with no obvious gross intraorbital extension. Obstruction of the osteomeatal complex was seen on the affected side.

Laboratory investigations showed WBC 10,600 cells/µL, polymorphs 77%, lymphocytes 20%, eosinophils 3%, hemoglobin 9.30 g%, bleeding time 3 min 10 sec, clotting time 4 min 40 sec, platelet count 223,000/µL, blood sugar 118.4 mg/dL and C-reactive protein 6.8 mg. HIV and hepatitis B surface antigen were non-reactive. Blood group was B positive.

V. TREATMENT AND PROCEDURE

Endonasal surgical excision of the right nasal cavity mass was performed under general anaesthesia. Under GA with orotracheal intubation, a 0-degree endoscope was passed into the right nasal cavity. A reddish homogeneous mass was identified. Excisional biopsy was taken, followed by right medialmaxillectomy, anterior ethmoidectomy and posterior ethmoidectomy, with the sphenoidal sinus ostium opened. The mass was removed using a microdebrider.

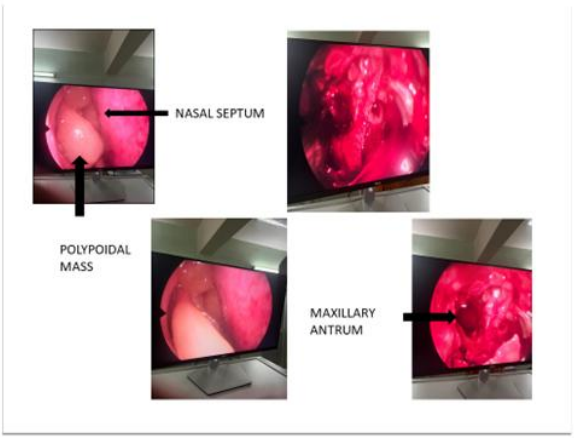


Figure – 1

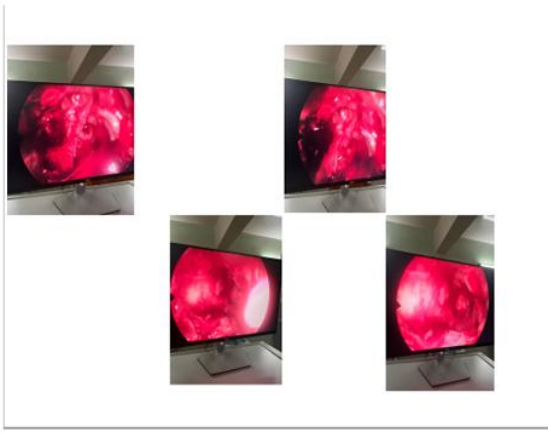


Figure - 2

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VI. HISTOPATHOLOGY AND IMMUNOHISTOCHEMISTRY

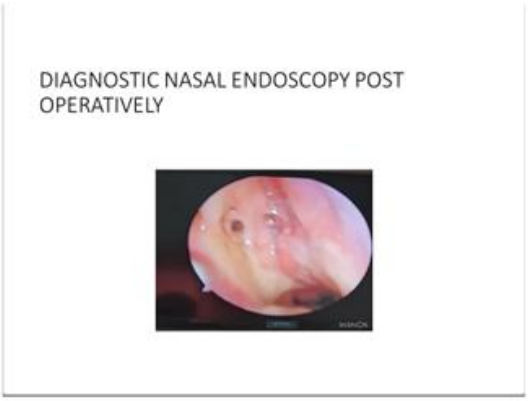
The excision biopsy specimen was initially provisionally diagnosed as right sinonasal polyposis. Microscopic examination showed nasal mucosal epithelium with pseudostratified columnar epithelium and stroma containing mucous glands infiltrated by pleomorphic rounded cells with atypical nuclear features arranged in nests and trabeculae. The impression was malignant round cell tumour.

Immunohistochemical Marker	Result
CD99	+ve
Desmin	+ve
MYOD1	+ve
NKX2.2	-ve
PAN CK	-ve
Synaptophysin	-ve
Ki-67	90%

The immunohistochemistry findings were reported as consistent with embryonal rhabdomyosarcoma.

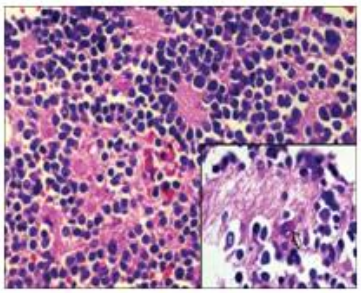
VII. POSTOPERATIVE MANAGEMENT AND FOLLOW-UP

Following the immunohistochemistry result, the patient was referred to an oncologist. She was advised to undergo radiotherapy followed by chemotherapy. The patient underwent 31 sessions of radiotherapy and 4 cycles of chemotherapy. She received 6 MV X-ray therapy to a total dose of 66 Gy to the primary and regional nodes. Chemotherapeutic agents used were vincristine, ifosfamide and actinomycin-D. The patient was followed for 2 months. The postoperative period was uneventful, the patient was symptomatically better, and follow-up was done after 2 weeks and after 1 month.



VIII. DISCUSSION

Malignant round cell tumours comprise a heterogeneous group of neoplasms characterized by poorly differentiated cells. These cells are small, round and have scanty cytoplasm with a high nuclear-to-cytoplasmic ratio. In the nasal cavity, such lesions may present with symptoms including nasal obstruction, nasal bleeding and facial pressure.



The differential diagnoses listed in this case included inverted papilloma, squamous cell carcinoma, schwannoma, hemangioma, solitary fibrous tumour, pleomorphic adenoma, hemangiopericytoma and malignant round cell tumour. The diagnostic approach described in the case includes biopsy and immunohistochemistry, with CT/MRI imaging and molecular or genetic testing as appropriate. Treatment options include surgery, radiotherapy and chemotherapy.

IX. CONCLUSION

Tumors presenting as a unilateral nasal mass should always arouse suspicion. Histopathological study and immunohistochemistry are important for confirming the diagnosis. In this case, complete excision of the mass was followed by radiotherapy and chemotherapy.

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