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CASE SERIES
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UNILATERAL NASAL MASS: CASE SERIES WITH REVIEW OF DIFFERENTIAL DIAGNOSIS

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ABSTRACT

Introduction: Unilateral nasal masses present diverse manifestations, posing risks of benign or malignant transformation if improperly diagnosed. A probe test is a basic clinical test to have an idea about the origin and nature of the polyp. Imaging studies such as computed tomography may give a detailed knowledge regarding origin and extent of polyposis.

MATERIAL & METHODS

We discuss a case series of 5 patients with diverse presentations and diagnosis for unilateral nasal polyposis. A brief review on differential diagnosis of unilateral nasal masses is also discussed in a tabular form with easy to remember mnemonic.

CONCLUSION:

There are diverse presentations and diagnosis of identically looking unilateral nasal masses. An excisional biopsy should always be sent for histopathological examination to know for the nature of disease and decide regarding further treatments.

KEYWORDS

Unilateral, Mnemonic, Pyogenic granuloma, Vestibule

INTRODUCTION

Nasal polyps are generally lesions arising from epithelial linings of sinonasal mucosa due to inflammation or mitotic changes[1]. The clinical pathology for these conditions are chronic inflammation, allergies to various airborne mediators, infections and benign or malignant sinonasal tumours. These polyps if grown larger, can obstruct the passage and interfere with normal breathing. It is very frequent in ENT OPD that patients present with conditions like unilateral sinonasal symptoms, nasal polyps or sinus opacity. The symptoms include watery anterior rhinorrhoea , hyposmia, anosmia, bleeding and pain. The condition is common in children as well as adults. Diagnosis of the condition is based on the symptoms and clinical examination followed by use of tests like diagnostic nasal endoscopy(DNE), imaging studies and allergy tests. Histopathological examinations are important in unilateral nasal masses to rule out different types of malignancies. The unattended benign lesions in the sinonasal vicinity may often lead to frequent recurrence and radical surgeries. Irrespective of its significant morbidity and common occurrence, research on unilateral sinonasal conditions is sparse, which emphasizes the need of research in this area. An important aspect of such research is awareness on

differential diagnosis of these lesions. We present a case series of 5 patients with unilateral nasal polyposis and discuss their management.

CASE 1:

A 32-year male presented to ENT clinic with complaints of left side nasal obstruction and a mass visible in left nasal cavity. It was associated with left nasal mucoid discharge and watering of left eye. On probe test, the polyp doesn'tbleed on manipulation, and seems to arise from middle meatus. A non-contrast computed tomography (NCCT) of nose and paranasal sinuses showed a large soft tissue density completely opacifying left maxillary sinus, middle meatus, anterior and posterior nasal cavity[Fig 1]. Intraoperatively, polyps filling nasal cavity were removed using Blakeseley forceps and canalization was done. Now using a 70-degree endoscope, maxillary sinus was visualized which was filled fungal muck. All the fungal muck and remaining polyps in maxillary sinus were removed. On discharge, patient was advised nasal douching and topical steroid spray for 6 weeks. On cytology, smears showed necrotic fragments and fungal hyphae with mainly neutrophilic and eosinophilic infiltrate. Patient diagnosed as a case of Allergic fungal rhinosinusitis with polyposis. On post operative follow up after 2weeks, patient had relief in symptoms with minimal crusting.

CASE 2:

A 12-year male presented with complaints of right nasal obstruction and a visible mass in right nasal cavity for 8 months [Fig. 2a] There is history of trauma to nose 1 year back. On probe test, the mass is attached to lateral nasal wall, and bleeds on manipulation. NCCT of nose and paranasal sinuses showed a soft tissue density present anteriorly in vestibule possibly a large inferior turbinate hypertrophy [Fig. 2b]. Intraoperatively, a single polypoidal growth was seen arising from inferior turbinate that was excised, and inferior turbinate reduction was done. On histopathology, inflammatory tissue was diagnosed. On post operative follow up after 2weeks, patient had relief in symptoms with healed inferior turbinate mucosa and no synechiae.

CASE 3:

A 24-year male presented with complaints of left nasal obstruction and a visible mass in left nasal cavity for 2 years [Fig. 3a]. There is no history of trauma to nose. On probe test, the mass is attached to septum, and bleeds on manipulation. NCCT of nose and paranasal sinuses showed a gross left deviated nasal septum with maxillary crest spur anteriorly [Fig.3b]. Intraoperatively, septal spur was excised, and maxillary crest was removed. Both mucoperichondrial flaps were approximated with quilting sutures. On post operative follow up after 2weeks, patient had relief in symptoms with healed septal mucosa.

CASE 4:

A 15-year female presented with complaints of left side visible nasal mass with on and off bleeding for 3 months [Fig.4a]. There is no history of trauma to nose. On probe test, the mass is attached to septum, and bleeds on manipulation. NCCT of nose and paranasal sinuses showed a soft tissue density present anteriorly in vestibule possibly arising from nasal septum [Fig.4b]. Intraoperatively, mass was excised along with adherent mucosa of septum. Mucosal edges then approximated and

sutured. Histopathology was suggestive of pyogenic granuloma. On post operative follow up after 2weeks, patient had relief in symptoms with minimal crusting over septum.

CASE 5:

A 43-Year male presented with complaints of visible mass in right nasal vestibule. There is no history of associated bleeding or trauma [Fig. 5a]. On palpation it was arising from nasal septum. CECT of nose and paranasal sinuses was suggestive of a non-enhancing soft tissue density present anteriorly in vestibule possibly arising from nasal septum [Fig. 5b]. Intraoperatively, a firm solid mass was removed arising from anterior septum and floor of nasal cavity. Histopathology was suggestive of schwannoma. On post operative follow up after 2weeks, patient had relief in symptoms with healed mucosa of nasal septum.

DISCUSSION:

Presentation of patients with complaints of nasal polyposis in ENT clinic is frequent. These cases are treated without much complication. There is dearth of studies on the diverse presentations of unilateral nasal mass and if not diagnosed properly it may go unnoticed with probability of becoming a benign or malignant nasal mass. This study presents cases of unilateral mass that have almost similar presentations but different diagnosis. Literature suggests radiological and histopathological investigations are necessary to rule out possible malignancies of the nasal mass and polyps[2]. Currently, there is no relevant literature available for comparing the clinical with radiological and histopathological findings in patients with nasal mass or nasal polyposis. Clinically probe test is very The prevalence of AFRS might be subjected to geographic variation, located in high-temperature regions. As reported by Munjal et al, AFRS is common in state of Punjab, India with highest prevalence in farmers and students[3]. The clinical features of AFRS patients are nasal discharge which is thick and greenish-brown mucoid appearance along with green to black rubbery nasal plugs. Major and minor criteria diagnostic criteria of AFRS were established by Bent and Kuhn[4]. The AC polyp is unilateral, solitary and pear shape mass that is present in form of a constricted sac with half of its portion in antrum and other half in the nose in a variable extent to the nasopharynx. Pyogenic granuloma also known as lobular capillary hemangioma originate from septal mucosa. They are small masses prone to bleeding. Their etiology is traumatic and hormonal. They grow rapidly during pregnancy[5].Probe test can differentiate polyps arising from septum, lateral nasal wall or middle meatus. To narrow down the differential diagnosis of unilateral nasal polyposis for budding graduates and post graduates, we have come up with a simple mnemonic to remember them [Table 1 and 2].

CONCLUSION:

There are diverse presentations and diagnosis of identically looking unilateral nasal masses. It is imperative to do complete clinical examination using nasal speculum and probe test supplemented with imaging studies for a preliminary diagnosis. An excisional biopsy should always be sent for histopathological examination to know for the nature of disease and decide regarding further treatments.

FIGURES

FIGURE 1: Axial view in NCCT of paranasal sinuses shows polypoidal mass filling left nasal cavity with increased attenuation of hyperdense material in maxillary sinus signifying presence of mucin.

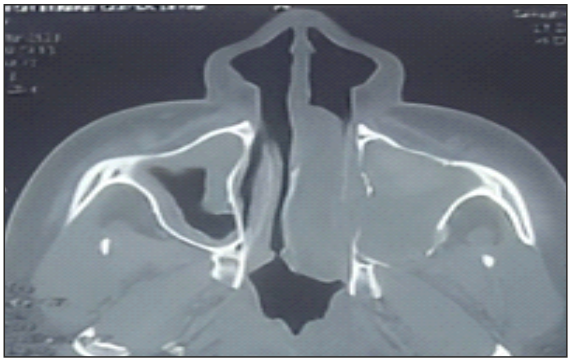

FIGURE 2:

(a) Anterior rhinoscopy of right nasal cavity showing polypoidal mass filling the vestibule.

(b) NCCT of nose showing mass arising from right inferior turbinate and localised to anterior nasal cavity.

FIGURE 3:

(a) Anterior rhinoscopy of left nasal cavity showing gross deviation of septum completely obstructing the nasal vestibule

(b) NCCT of nose showed a gross left deviated nasal septum with maxillary crest spur anteriorly.

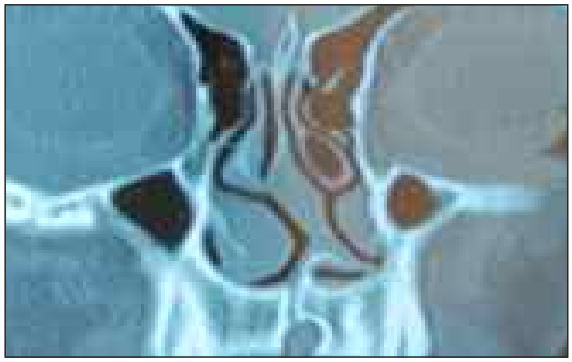

FIGURE 4:

(a) Anterior rhinoscopy of left nasal cavity showing gross red polypoidal mass that bleeds on probing.

(b) NCCT of nose showing mass localised to anterior nasal cavity.

FIGURE 5:
(a) Anterior view of nose showing large oval mass arising from right nasal cavity completely obstructing vestibule.

(b) NCCT of nose showing mass arising from nasal septum and localised to anterior nasal cavity.

TABLES:

TABLE 1: A mnemonic to easily remember and review differentials for benign unilateral nasal mass

A	Allergic fungal Rhinosinusitis
	Angiomatous polyp
	Antrochoanal polyp
B	Bullosa concha
C	Capillary hemangioma
	Chordoma
D	D:Dermoid cyst
E	E:Encephalocele
	Ethmoid mucocele
F	F:Fibrous dysplasia
	Foreign body
G	Granuloma cholesterol
	Granulomatous lesions(Wegener granulomatosis/Sarcoidosis/Churg – strauss Syndrome)
H	H:Hemangioendothelioma
I	I:Inverted papilloma
J	J:Juvenile Nasopharyngeal Angiofibroma
K/L	K/L: NK–T cell Lymphoma
M	M:Melanoma,
	Meningocele
	Meningoencephalocele
N	N:Nasal neuroglial heterotopia
	Nasolacrimal duct mucocele
O	O:Osteoma,
P	P:Pyogenic granuloma
R	R:Rhinosporidiosis

TABLE 2: A mnemonic to easily remember and review differentials for malignant unilateral nasal mass.

R	Rhabdomyosarcoma
U	Undifferentiated carcinoma, neuroendocrine tumors
S	Squamous cell carcinoma (SCC),
S	Salivary neoplasm(Minor Glands)
E	Esthesioneuroblastoma,
L	Lymphomas of nasal cavity

DECLARATION

Conflict of Interest: There was no conflict of interest.

Ethical Approval: The study was approved by institutional ethics committee.

Consent: Written and informed consent were taken while doing the study. No human or animal was harmed in the study.

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