

Histopathological Insights into Unilateral Nasal Masses: Necessity or Routine?

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Abstract:

Background: Unilateral nasal masses have a broad spectrum of aetiologies. Clinically, they are often presumed to be either an antrochoanal polyp or a malignancy based on the patient's age. However, such assumptions may be misleading and can result in missed or unexpected pathological diagnoses. Histopathological examination plays a pivotal role in establishing the definitive diagnosis and identifying occult pathologies. This case series highlights the importance of routine histopathological evaluation in all cases of unilateral nasal masses.

Methodology: A retrospective review was conducted of patients who underwent surgical excision of unilateral nasal masses at our institution between January 2026 and June 2026. All excised specimens were subjected to histopathological examination, and the reports were analysed. Patients were followed up for a period of six months postoperatively.

Results: A total of 14 patients were included, with a mean age of 37.64 years; the majority were male. Eight patients presented with right-sided nasal masses, while six had left-sided lesions. Histopathological examination revealed inflammatory polyps in eight cases, inverted papilloma, angiofibroma, rhinoscleroma, granuloma, carcinoma in one case each, and a dual pathology of antrochoanal polyp with inverted papilloma in one case.

Conclusion: The identification of uncommon and coexisting pathologies in this series underscores the indispensable role of routine histopathological examination in all unilateral nasal masses. Reliance on clinical diagnosis alone may overlook significant underlying pathology, potentially affecting patient management and prognosis.

Keywords: Unilateral Nasal Mass, Inflammatory Polyps, Histopathology, Dual Pathology, Inverted Papilloma.

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Introduction

Nasal block and nasal discharge are one of the most common symptoms with which patients come to otorhinolaryngology OPD. In these, significant number of cases are due to nasal masses. Nasal masses can have varied diagnosis ranging from inflammatory nasal polyps to malignancies [1,2].

Nasal polyps which can be present due to chronic rhinosinusitis has a prevalence of about 4% [3]. Malignancies have a prevalence of less than 1% of all nasal masses, but it is still a significant number, as when missed can be life threatening [4].

Benign tumours of the nose and para nasal sinuses can be inverted papilloma, haemangioma, angiofibroma, etc which can be locally aggressive. Whereas, most common malignant tumour in nose and para nasal sinus cavity is squamous cell carcinoma but other types like adenocarcinoma,

melanoma, and sarcoma can also be found⁵. In elderly unilateral nasal mass is often assumed to be inverted papilloma or malignancy and in children and young adults as inflammatory nasal polyps [2,6]. As inflammatory conditions of nose, benign tumours and malignant tumours of nasal cavity, all present similarly with rhinorrhoea, nasal obstruction, epistaxis and in severe cases with facial swelling and diplopia, it poses a challenge to the clinician in diagnosing the disease. Radiological studies help in narrowing down the diagnosis but histopathological testing plays an important role in coming to the final diagnosis. This is a case series which aims to show the importance of routine histopathological examination of unilateral nasal masses, as occult disease can be missed by clinical examination and radiological study.

Materials and Methods

A retrospective observational study was conducted in our tertiary care centre which constituted of 14 cases of unilateral nasal mass. Study period was 6 months from January 2026 till June 2026. All cases of unilateral nasal mass operated within this period in our centre were included in the study. Demographic and clinical data were collected and analysed.

Histopathological examination was conducted and reported by the department of pathology of the same centre. Demographic and clinical data were collected and analysed. Results were expressed as frequencies and percentages. Results were represented in tables and charts for clarity.

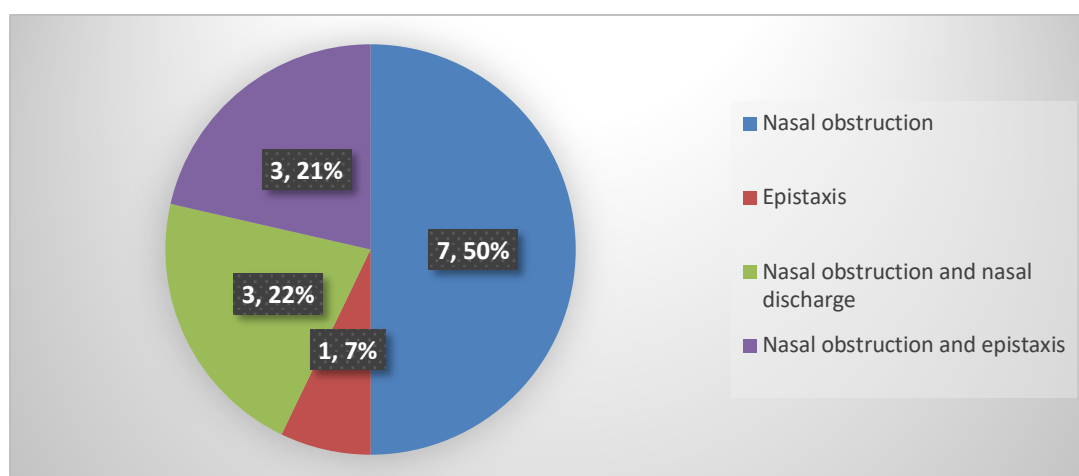
Results

A total of 14 cases of unilateral nasal mass were operated over the 6 months period. The

demographic data like age, sex was noted. Clinical data including laterality, symptoms, signs, were noted. Radiological studies if done were recorded. Histopathological reports were retrospectively collected from the pathology department.

Demographic Details: Majority of the subjects were males (57.14%), with male to female ratio was 8:6. Age distribution ranged from 12-54 years with mean age being 37.64.

Clinical Data: Most common symptom that patients presented with was nasal obstruction (92.85%). 7 patients had isolated nasal obstruction complaints (50%), 1 patient had epistaxis as he only presenting complaint (7.14%), Combined symptoms of nasal obstruction and rhinorrhea and nasal obstruction and epistaxis were seen in 3 patients each (21.42%) [Graph 1]. Right sided complaints were more common (57.14%) as compared to left sided complaints.



Graph 1: Clinical data of the study subjects (n=14)

Histopathological diagnosis: 8 cases (57.14%) had histopathological results showing inflammatory polyps of the sinonasal cavity. 1 case (7%) was diagnosed as inverted papilloma [Pic 1]. Features of pyogenic granuloma, septal angiofibroma [Pic

2,3], rhinoscleroma and sinonasal undifferentiated carcinoma were found in 1 case each (7%) [Pic 4]. A rare case of dual pathology of antrochoanal polyp and inverted papilloma was seen in one case (7%) [Pic 5][Pic 6] [Table 1].

Table 1: Clinical data and HPE diagnosis (n=14)

Sl. No	Sex	Age	Side	Clinical feature	Diagnosis
1	F	50y	Left	Nasal obstruction	Inverted papilloma
2	M	54y	Left	Nasal obstruction, discharge	Inflammatory polyp
3	F	36y	Right	Nasal obstruction	Inflammatory polyp
4	M	35y	Left	Nasal obstruction, discharge	Inflammatory polyp
5	M	50y	Right	Nasal obstruction	Inflammatory polyp
6	M	26y	Right	Nasal obstruction, Nasal bleed	Pyogenic granuloma
7	M	12y	Right	Nasal obstruction	Inflammatory polyp
8	M	24y	Right	Nasal obstruction, discharge	Inflammatory polyp
9	M	45y	Left	Nasal obstruction	Inflammatory polyp
10	F	31y	Right	Nasal obstruction	Antrochoanal polyp with inverted papilloma
11	M	35y	Right	Nasal obstruction, nasal bleed	Rhinoscleroma
12	F	54y	Left	Nasal bleed	Sinonasal undifferentiated carcinoma
13	F	35y	Right	Nasal obstruction, nasal bleed	Septal Angiofibroma
14	F	40y	Left	Nasal obstruction	Inflammatory polyp

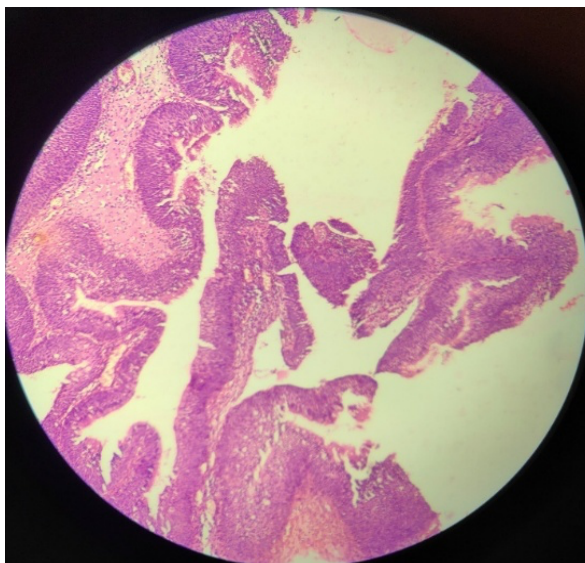


Figure 1: Inverted papilloma histopathological examination



Figure 2: Gross specimen of septal angiofibroma

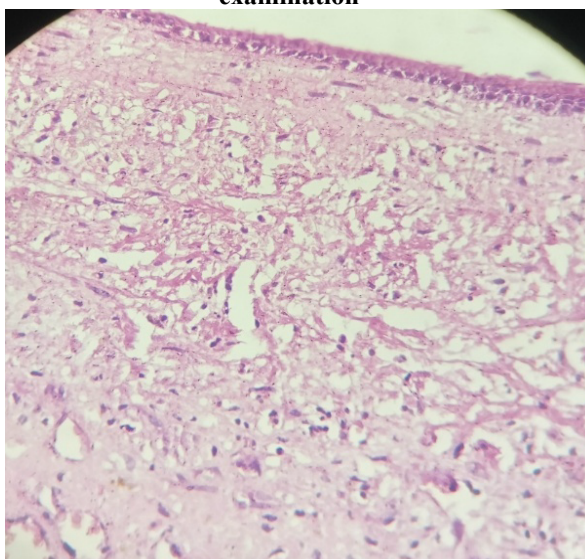


Figure 3: Histopathological picture of septal angiofibroma

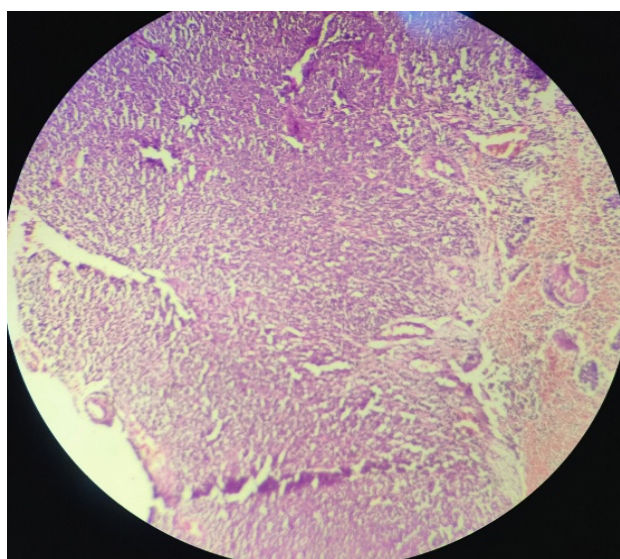


Figure 4: Histopathological picture of Sinonasal undifferentiated carcinoma



Figure 5: Gross specimen picture of dual pathology mass

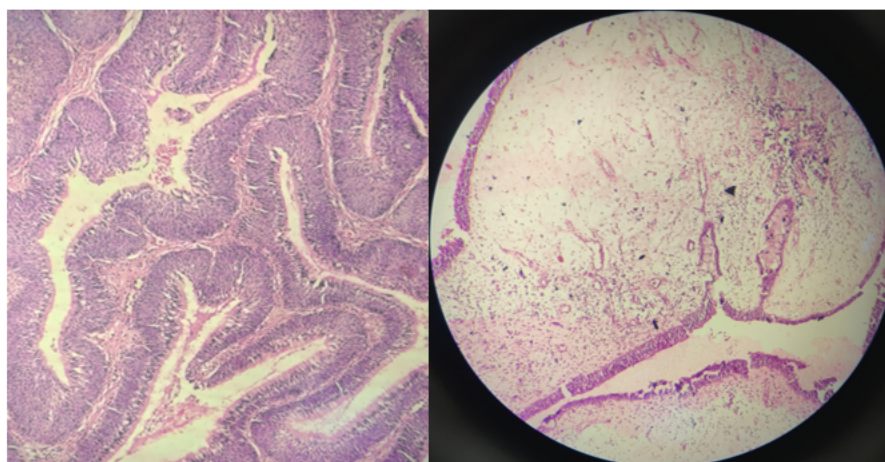


Figure 6: Histopathological picture of dual pathology showing features of inverted papilloma and antrochoanal polyp

Discussion

Unilateral nasal mass can pose a clinical challenge to the ENT specialist as most of the cases present with similar complaints. Commonly the diagnosis of inflammatory nasal polyp is done based on clinical and radiological findings. Hence, occult pathologies can be missed [1,7]. This study showcases the importance of routine HPE examination of all unilateral nasal masses even in the absence of any suspicions.

Our study showed age distribution from 12-54 years with mean age being 37.64. Study by Shanbag et al. showed age range from 9 days to 82 years with highest cases in the age group of 11-20 years [1]. Study by Joshi et al showed mean age of patients presenting with unilateral nasal mass as 33.8 years which was similar to our study [8]. Our study showed male predominance which was similar to other studies done by Shanbag et al. Riyaz S et al, Naik R et al and Joshi et al [1,5,7,8]. Most common presenting complaints in our study was nasal obstruction (50%), which was similar to the results of Shanbag et al and Sahu et al [1,4].

Inflammatory nasal polyp: Shuaibu et al found that the most common histological type of unilateral sinonasal mass was inflammatory polyps, accounting for 42.1% of cases. Inflammatory polyps are the most common type of non-neoplastic nasal masses according to various other studies. This finding is consistent with our study in which 57.14% of cases were inflammatory polyps [1,2,4]. This signifies that majority of the unilateral nasal masses are non-neoplastic in origin.

Pyogenic granuloma and Rhinoscleroma: In this study there was one case of pyogenic granuloma (7%) and one case of rhinoscleroma (7%). Study by Shanbag et al showed much lesser incidence of pyogenic granuloma with only 4 cases and 2 cases of rhinoscleroma out of 208 study subjects [1]. Among the non-neoplastic lesions, allergic polyps,

rhinosporidiosis had more prevalence according to studies done by Naik et al, Joshi et al and Riyaz et al [5,7,8].

Septal Angiofibroma: Extra-nasopharyngeal angiofibromas are vascular fibrous tumors presenting in sites other than nasopharynx. Even though uncommon, if present, they are mostly found in maxillary sinuses. Other sites from where they can origin are ethmoid sinuses, nasal cavity and nasal septum. Angiofibromas tend to be vascular and their presenting complaints will be epistaxis in majority of the cases [9,10]. Septal angiofibromas although uncommon was found in one of the cases in our study. Saikia et al found septal angioma in 11.1% of cases and Joshi et al found angiofibromas to be the most common benign neoplastic lesions with 29%, although the site of origin of the mass was not mentioned in the study [6,8].

Inverted Papilloma: In 7.2% cases out of 208, Inverted papilloma was the diagnosis made histopathologically in a study by Shanbag et al [1]. Riyaz et al had an incidence of 3.6% for inverted papilloma [5]. These two studies showed consistent results to our study where the incidence was 7%. However, study by Shuaibu et al showed much higher incidence (26.3%) with it being the second most common unilateral nasal mass after inflammatory polyps [2]. This discrepancy in the incidence could be because of the differences in the study size and study population.

Dual pathology – Antrochoanal polyp with inverted papilloma in the same specimen: Our study showed a rare occurrence of dual pathology in one of the cases. A female patient of 31 years presented with right nasal obstruction. On clinical examination, a diagnosis of antrochoanal polyp was made which was further confirmed by CT-PNS. CT scan did not show any signs of inverted papilloma. During endoscopic removal, a change in the consistency was noted in the center part of the

polyp. On histopathological examination, dual pathology was noted with parts of polyp showing inverted papilloma features. Neoplastic tumors like epithelial papilloma, glioma can present like a polyp in the nasal cavity [7,11]. This can be misleading to the clinicians, and serious conditions can be misdiagnosed as simple polyps.

Sinonasal undifferentiated carcinoma: One case of sinonasal undifferentiated carcinoma was found in our study. Varied incidence ranging from less than 1% to 7% has been reported in studies done previously [1,4,8]. Study size difference may have contributed to this.

Conclusion

The identification of uncommon and coexisting pathologies in this series underscores the indispensable role of routine histopathological examination in all unilateral nasal masses. Reliance on clinical diagnosis alone may overlook significant underlying pathology, potentially affecting patient management and prognosis.

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