E-ISSN: 2708-1508
P-ISSN: 2708-1494
IJCRS 2025; 7(1): 191-193
www.casereportsofsurgery.com
Received: 15-01-2025
Accepted: 20-02-2025

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Rare case of inverted papilloma with early squamous cell dysplasia: A unique clinical encounter

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DOI: https://www.doi.org/10.22271/27081494.2025.v7.i1d.165

Abstract
The case presented involves a patient with an irregular pinkish mass protruding from the left nasal cavity into the nasopharynx. Radiological investigation using a CT scan revealed a soft tissue mass in the left nasal cavity, with bony septal destruction, erosion of the left lateral nasal wall and turbinates, and blockage of the osteomeatal complex, leading to secondary sinusitis in the maxillary, ethmoidal, and sphenoid sinuses. The patient underwent a successful surgical excision and left unilateral functional endoscopic sinus surgery (FESS). The excised tissue was sent for histopathological examination, which confirmed the diagnosis of inverted papilloma with moderate to severe dysplasia and early invasive squamous cell carcinoma. The histopathology slides revealed endophytic growth of epithelial nests with smooth contours, keratin whorls, and dense chronic inflammatory infiltrates in the stroma. Inverted papillomas are usually benign but can progress to malignancy in 7-16% of cases, particularly in the maxillary, frontal, and frontoethmoidal regions.

Keywords: Inverted papilloma, nasal cavity mass, CT scan, soft tissue mass, sinusitis

Introduction

Inverted papilloma of nasal cavity is a benign mass and more commonly seen in the elderly (40-50 years) with male preponderance (3:1). The tumor has certain characteristics: multicentric, high recurrence rate and preponderance to malignant changes (7-16%) and causes local destruction. The common sites involved include nose, nasal cavity, nasopharynx, oropharynx, paranasal sinuses, etcetera and those arising from maxillary, frontal and frontoethmoidal sinuses have higher chances for malignant degeneration [1, 2].

Case report

A 58 -year-old male presented to the ENT OPD with complaints of widening of external nose with mass protruding from left nasal cavity of 1 month duration. History of mouth breathing and snoring present. History of reduced smell perception and left sided nasal discharge. He also gave history of nasal bleed and nasal discharge which is blood tinged.

On examination

A non-tender, immobile, pink, irregular mass noted in the left nasal cavity on anterior rhinoscopy. The left ala and dorsum of nose are widened and posterior rhinoscopy shows irregular pinkish mass protruding from left nasal cavity into nasopharynx as shown in Fig 1 and Fig 2 respectively.

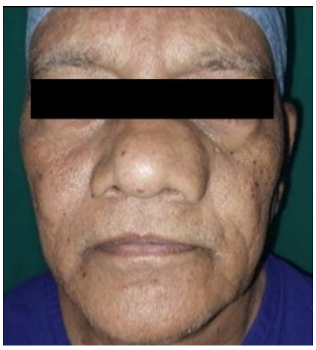

Fig 1: Widening of left ala

Fig 2: Mass seen occupying the nasal cavity as indicated by blue arrow

Investigation

CT scan of the paranasal sinuses revealed a soft tissue mass in the left nasal cavity, with bony septal destruction, erosion of the left lateral nasal wall and turbinates, and blockage of the left osteomeatal complex with secondary sinusitis in the left maxillary sinus, ethmoidal air cells, and sphenoid cells, along with non-pneumatized frontal sinuses as shown in Fig 3.

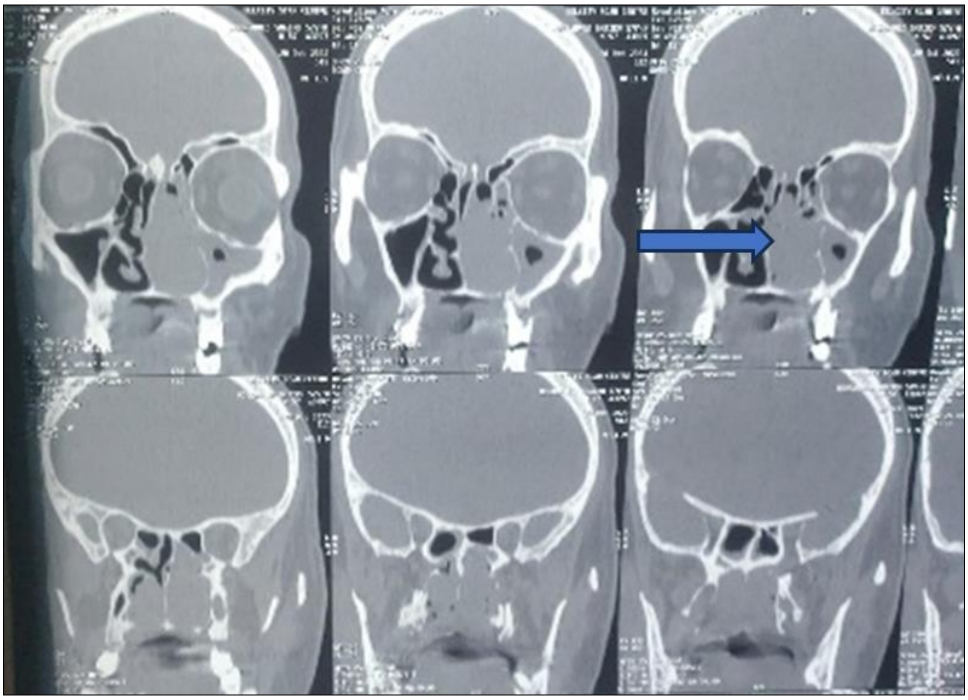

Fig 3: Computed tomography scan of paranasal sinus in coronal cut showing soft tissue opacification of left nasal cavity and sinuses as indicated by blue arrow

Treatment

Patient underwent surgical excision and left unilateral functional endoscopic sinus surgery. The tissue excised completely and was then sent for histopathological examination. There were no complications postoperatively and no recurrence of lesion in the past 1 year follow up.

Biopsy

On histopathological examination, multiple sections showed inverted papilloma with moderate to severe dysplasia and early invasive squamous cell carcinoma as shown in Fig 4 and Fig 5.

The slides show endophytic growth of epithelial nests with smooth outer contour with stroma showing dense chronic inflammatory lymphocytic infiltrates and formation of keratin pearls.

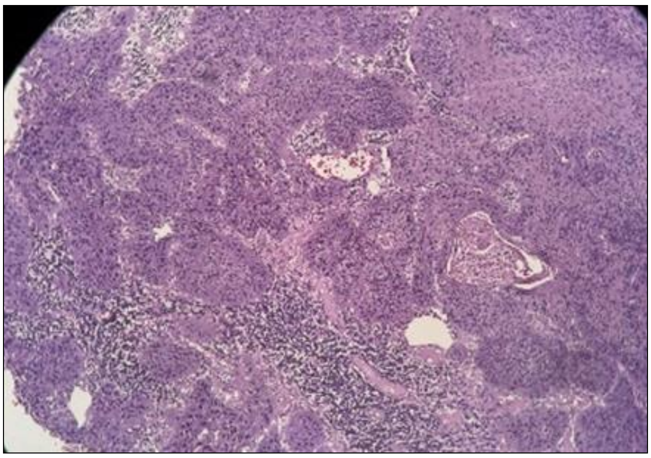

Fig 4: HPR slide showing epithelial nests and keratin whorls

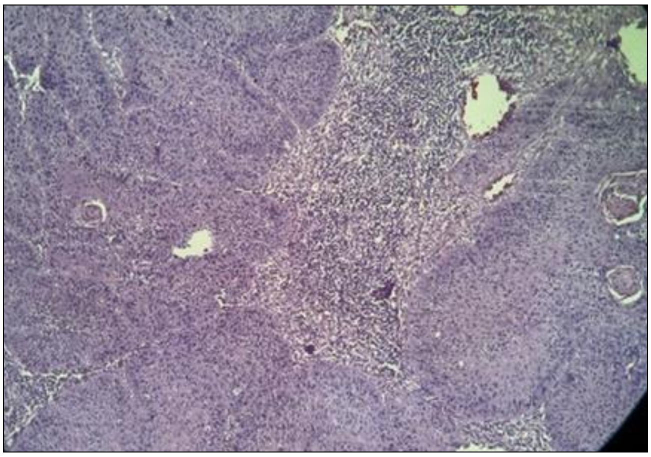

Fig 5: HPR slide showing stroma with dense lymphocytic infiltration

Discussion

Inverted papilloma usually benign, may progress into aggressive neoplasms such as squamous cell carcinoma in 7-16% of cases. Inverted papilloma arising from maxillary sinus, frontal sinus and frontoethmoidal recess are more commonly associated with malignant degeneration. Often associated with certain risk factors including infections such as HPV, sinonasal papilloma, smoking, EGFR mutation, DNA alteration, occupational exposure [2].

It is advised to distinguish inverted papilloma of sinonasal cavity from inverted papilloma with malignant transformation clinically although challenging as it is crucial to therapeutic planning and patient counselling. Clinically, malignant transformation of inverted papilloma would have a history of epistaxis, vision changes and pain and radiologically would often show osteitis of site of attachment or erosion of bone in CT is often an indicator of malignancy [3, 4].

Histologically, inverted papilloma showed epithelial hyperplastic features with an endophytic development and an intact basement membrane and dysplastic changes in case of malignant transformation. Cell proliferation and apoptosis if the hyperplastic epithelium is higher in inverted papilloma than other benign masses of sinonasal cavity such as nasal polyposis, while apoptotic inhibition is seen to be less in IP than in other tumours eventually leading to increased epithelial cell proliferation leading to the development of IP. Clinical and pathological factors like the mitotic index often fail to accurately predict or diagnose the malignant transformation [2, 3].

Often, multiple excision biopsies were performed on the same patient that would lead to an accurate diagnosis as most IPs would transform from its centre, which makes radiological prediction better. But CT has low sensitivity and specificity towards differentiating between a benign and malignant transformation while MR helps to identify loss of convoluted cribriform patterning.

IP can effectively be treated by endoscopic surgical resection. The extent of the tumour and its origin with all rims of normal mucosa removed helps for a successful treatment. Often transnasal operation provide poor visualisation and poor illumination resulting in recurrence. En bloc resections with medial maxillectomy through a lateral rhinotomy is an approved techniques of surgical resection that has found to reduce the recurrence rate and morbidity [5].

Conclusion

Clinical assessment with histopathological examination would help arrive at a diagnosis and early management. IP can effectively be treated by endoscopic surgical resection. The extent of the tumour and its origin with all rims of normal mucosa removed helps for a successful treatment including eliminating chances for recurrence.

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How to Cite This Article

Vathiadath SM, Shetti PS. Rare case of inverted papilloma with early squamous cell dysplasia: A unique clinical encounter. International Journal of Case Reports in Surgery. 2025;7(1):191-193.