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Transitional Cell Papilloma of Nasal Cavity with Malignant Transformation

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Abstract Inverted papilloma of nasal cavity is a rare tumor which is most commonly seen in 5th to 7th decade. A case is described here occurring in a 55 year old male who presented with left nasal cavity obstruction and bleeding from the left nose. The patient underwent incisional biopsy from growth nasal cavity which was suggesting transitional cell papilloma with suggestion of malignant transformation following by which the patient underwent left side lateral rhinotomy. Microscopic findings established the diagnosis of transitional cell carcinoma. Patient was later treated by external beam radiation therapy of dose 60 Gy in 30 fractions to the local site. Twenty months after treatment completion patient is on regular follow up and disease free on clinical and radiological examination.

Keywords: *transitional cell papilloma, nasal cavity, transitional cell carcinoma, rhinotomy, radiation therapy*

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1. Introduction

The transitional cell papilloma which is also known as inverted papilloma is a lesion arising from the mucous membrane of the nasal cavity and paranasal sinuses. It is a rare tumor comprising of about 0.5-4% of all the primary nasal tumors. ([1,2]). Traditionally, a lateral rhinotomy with a medial maxillectomy were the standard surgical procedures; recently, endoscopic approaches have slowly become the standard treatment.

2. Case Report

A 55 year old male presented with left nasal cavity obstruction and bleeding from left nose since one and half year which was on and off in nature, obstruction was getting aggravated during upper respiratory tract infections and it was also associated with the non- foul smelling discharge from the left eye. No history of decreased vision or any other difficulty in the eyes. Then patient underwent biopsy from the growth of left nasal cavity which was suggestive of transitional cell papilloma with high mitotic active cells with favoring of malignant transformation (Figure 1a-b). Preoperative NCCT and CECT of paranasal sinus demonstrated a heterogeneously enhancing soft tissue seen involving left ethmoid sinus with extension into the left nasal cavity with midline perforation, there was no evidence of extension into orbit or cranium seen (Figure 5a-b). Then patient underwent lateral left side rhinotomy with operative findings of growth over the roof of the nasal cavity. Histopathological examination established the diagnosis of transitional cell (cylindrical carcinoma). On microscopic examination tumor was invading along blood vessels and with evidence of mitotic activity (Figure 2 a-b).Tumor was positive for Epithelial Membrane Antigen (EMA) (Figure 3). Immediate postoperative endoscopy was done to rule out remnant disease which showed no evidence of any remnant disease. Routine investigations for metastatic workup were such as Ultrasonography of the abdomen and pelvis, chest X-ray was normal. Routine blood investigations such as complete haemogram, renal function tests and liver function tests were within the normal limit. Then the patient was planned for radical external beam radiation therapy with conventional doses of 60 Gy in 30 fractions over 6 weeks with five fractions per week to face by incident dose to areas covering left ethmoid sinus and left nasal cavity with appropriate shielding of left eye. Six months after the completion of radiation therapy, CECT of Paranasal sinus was done which showed the evidence of non enhancing mass lesion in the left maxillary sinus but there was no any soft tissue mass seen in the nasal cavity (Figure 6 a-b). In view of absence of any complaints from the patient, he was kept on follow up. One year after the completion of radiation therapy patient presented with complaints of bleeding from the left nostril, then the patient was subjected to diagnostic endoscopy which revealed no evidence of residual or recurrent disease. Eighteen months after the completion of radiation therapy patient again presented with the complaints of bleeding from the left nose and the patient was referred to Otorhinolaryngologist for further opinion. Biopsy from the growth over the lateral wall of

the nose and the nasal septum showed the evidence of transitional cell papilloma with no mitotic activity (Figure 4 a-b). As there was no role of radiation therapy in this benign tumor, patient was referred to Otorhinolaryngologist for surgical excision.

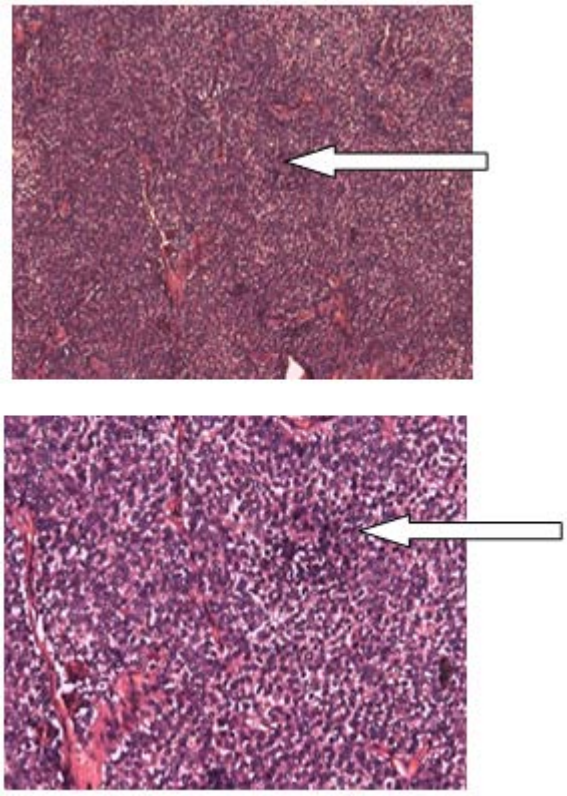

Figure 1. a-b (10X-40X) H&E: Photomicrograph showing transitional cell papilloma with mitotic activity *(arrow mark)*

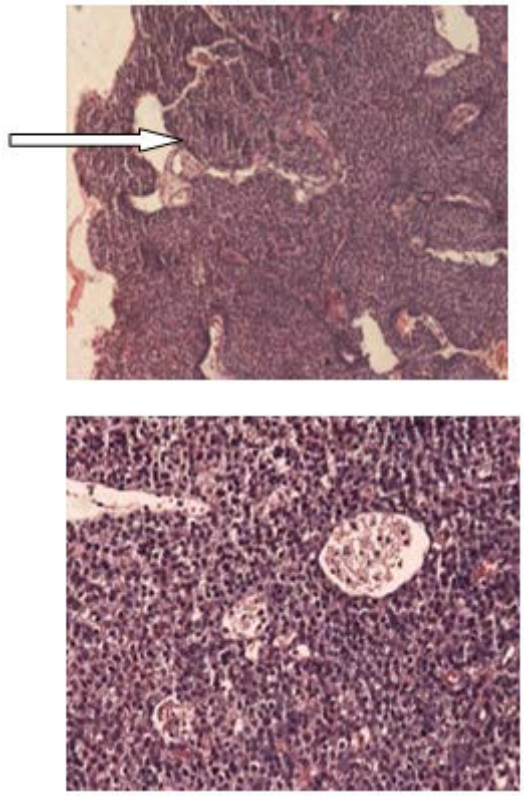

Figure 2. a-b (10X-40X) H&E: Photomicrograph showing transitional cell carcinoma with blood vessel invasion *(arrow mark)*

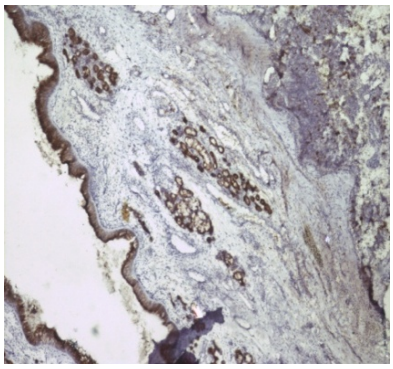

Figure 3. Photomicrograph showing tumor cells (TCC) showing EMA (EPITHELIAL MEMBRANE ANTIGEN) positivity (100X)

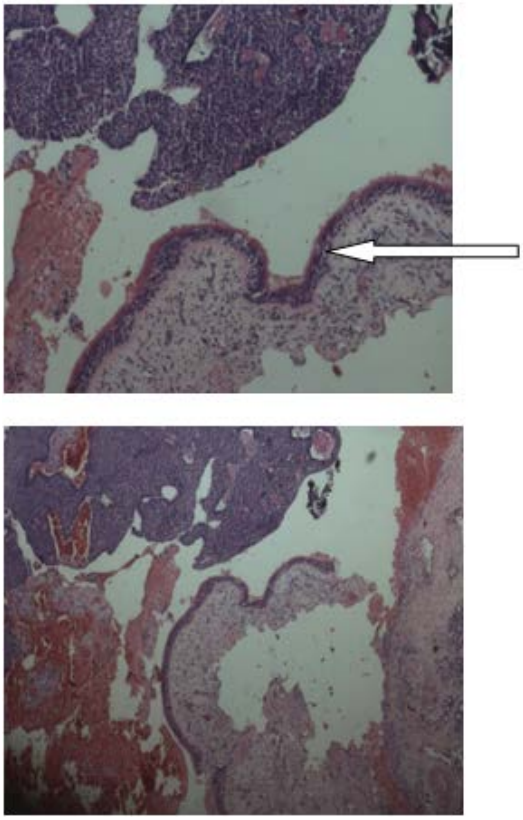

Figure 4. a-b (10X-40X) H&E: Photomicrograph showing transitional cell papilloma with no mitotic activity with nasal cavity epithelium and hemorrhage *(arrow marks)*

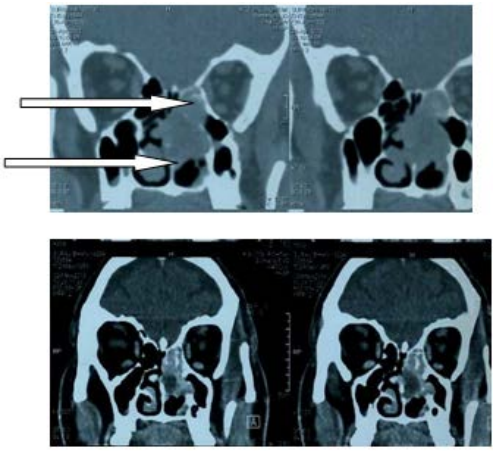

Figure 5a-b. NCCT and CECT PNS: Heterogenously enhancing lesion seen involving left ethmoid sinus with extension into the left nasal cavity with perforation of midline area, THERE WAS NO INVOLVEMENT OF ORBIT (*arrow marks)*

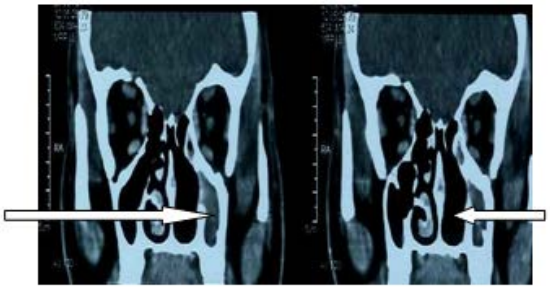

Figure 6 a-b. CECT PNS: No soft tissue mass seen in the nasal cavity, non enhancing mass lesion in the left maxillary sinus (*arrow mark)*

3. Discussion

Inverted papilloma is a benign epithelial tumor which comprises of about 0.5 -4% of all primary nasal tumors. ([1,2]) It arises from the outlining schneiderian respiratory membrane [3].

It arises from the paranasal sinuses also but in less frequency when compared to nasal wall. [4] Eventhough it is benign tumor it is locally aggressive with the tendency to invade nearby structures along with destruction of the bone. It is also known for its high incidence of recurrence. Incidence of recurrence ranges from 6-75%. The rate of transformation into carcinoma ranges from 1-50% [5].

Various other names of transitional papilloma include Inverted papilloma, villiform cancer, fungiform papilloma, cylindrical papilloma; schneiderian papilloma. [5] The term Inverted papilloma is derived because of characteristic endophytic growth caused by the characteristic proliferation of metaplastic surface epithelium by invasion into underlying stroma [1].

It is more commonly seen in males. It is also more commonly seen during 5^{th} to 7^{th} decade although the age group can vary from 1^{st} decade to 8^{th} decade of life. Eventhough the main etiology of the disease is still unknown various factors contributing etiological factors include sulphur, tobacco, human papilloma virus infection (HPV types 6, 11, 16 and 18). [5] Most of the patients of inverted papilloma presents with unilateral polyp which leads to unilateral nasal obstruction, bleeding or sinusitis. When there is malignant transformation most of the patients present with facial or dental pain, nasal obstruction and epistaxis [5].

Work up of patients of inverted papilloma includes physical examination, nasal endoscopy, chest radiograph or CT scan of chest to rule out pulmonary metastasis, liver enzymes to rule out liver metastasis, ANCA (an antineutrophil cytoplasmic antibody) to rule out Wegners granulomatosis which mimics neoplasm should be considered. Preoperative evaluation tests include complete blood count, electrolytes measurement, bleeding and coagulation parameters, biopsy of lesion, CT or MRI imaging techniques which are complementary to each other [5].

Treatment may include medical therapy, radiation therapy, surgical intervention or combination of all three treatment modalities. Medical therapy is still not an established treatment, mainly used to reduce inflammation or bleeding before surgical intervention. Various drugs under studies include interferon, cidofovir, [6] and mitomycin[7] When there is malignant transformation adjunct chemotherapy can be used [8].

Radiation therapy have role only when there is malignant transformation of papilloma, early or multiple recurrence, advanced stage lesion, biologically aggressive tumors, incompletely resected lesion, [9] Lesions with positive margins, unresectable lesions, [10] it is also used in poor surgical candidates due to associated comorbidities. [11] Dose of radiation therapy used in the management of inverted papilloma with malignant transformation is usually dictated by the recommendations for invasive squamous cell carcinoma. Hugh et al. studied the role of radiation therapy in the adjuvant set up in 13 patients with malignant transformation with a mean dose of 59 or 60 Gy in conventional schedule or hyperfractionation schedule. [12] Role of radiotherapy in the management of Inverted papilloma was also analyzed by Gomez et al. and concluded that radiation therapy should be used in patients with incompletely resectable tumors and recurrent tumors [13].

Surgery is the primary and preferred treatment, as it offers the optimum modality of treatment for inverted papilloma. Primary determinant of surgical approach is extent of primary disease whereas other secondary determinants are previous treatment, individual patient factors and surgical experts. [5]

4. Conclusion

Inverted papilloma is a rare malignancy with high incidence of recurrence and variable percentage of malignant transformation. Radiation therapy is indicated in patients with high risk characteristics and when there is malignant transformation in inverted or transitional cell papilloma.

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