

Morphological Cell Type Analysis of Schneiderian Papillomas. A Two Year Study At Tertiary Care Hospital.

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Abstract:

Background and objectives: Schneiderian papillomas are benign neoplasms accounting for 0.4 to 4.7% of all sinonasal tumors. They have three main characteristics such as capacity for local destruction, tendency to recur and association with squamous cell carcinoma. They are classified into inverting, fungiform, and oncocyctic. These should be distinguished from one another histopathologically. This study highlights the histopathological differences between the Schneiderian papilloma subtypes and papillomas with malignant transformation.

Methods: This study was a descriptive study done in Department of Pathology, Stanley Medical College, Chennai, India for a duration of 2 years from 2013 to 2014. During the study period 10 cases of formalin fixed (10%), surgically resected sinonasal papillomas were received from ENT Department Stanley Medical College. They were processed and slides were prepared for histopathological diagnosis. The stained cytological and histopathological slides were studied, analyzed and correlated.

Results: The histopathological features were studied and analyzed and the following observations were made: Out of 10 cases 4 cases fall between 3rd to 4th decade, 4 cases between 4th to 5th decade and 2 cases in the 7th decade. All were males and all 10 cases were in sinonasal region. Most common lining epithelium was squamous epithelium (4 out of 10). Least common was oncocyctic (1 out of 10). Malignant transformation was seen in 2 cases.

Conclusion: Sinonasal papillomas are benign epithelial neoplasms arising from Schneiderian mucosa. Although the incidence of inverted papilloma is much higher compared with the other papilloma subtypes, exophytic and oncocyctic papillomas must be recognized and differentiated.

Keywords: Schneiderian papillomas, squamous epithelium, dysplasia, transitional epithelium.

Date of Submission: 05 -09-2017

Date of acceptance: 22-09-2017

I. Introduction

Inverted papillomas are rare and recurrent papillary lesions of the nose. These papillomas are derived from the Schneiderian membrane. (1) The three types of Schneiderian papillomas are 1. Exophytic papilloma 2. Inverted papilloma and 3. Oncocyctic Schneiderian papilloma. (1) Of these three, exophytic papillomas present as exophytic masses. These papillomas are composed of thin fibrovascular core covered over by a transitional or squamous epithelium. Carcinoma is rare in exophytic papilloma.

II. Materials And Methods

Totally ten cases were reported during 2013 and 2014 in our department. All were received from E.N.T Department. They were processed routinely and H&E sections were taken up for this study.

III. Results

Out of ten cases, four cases occurred in the age group of 3rd to 4th decade, four cases in the 5th to 6th decade and two cases in the 7th decade. All cases were males. All ten cases were in the sinonasal region. Out of ten cases, four showed squamous epithelium (Fig 1), two showed transitional epithelium (Fig 2) and two cases showed transitional epithelium with squamous metaplasia. One case of oncocyctic Schneiderian type (Fig 3) with large oncocyte cells (Fig 4) in 2-3 layers with focal squamous to transitional metaplasia was seen. Exophytic slender papillae were also observed. Grade I dysplasia of the squamous epithelium was seen in two cases. Transformation to squamous cell carcinoma (Fig 5) was seen in two cases out of the ten cases.

Age Group	Number Of Cases
31- 40 Years	4
41-50 Years	-
51-60 Years	4
61 And Above	2

TYPE OF EPITHELIUM	NUMBER OF CASES
Squamous epithelium	Four (4)
Squamous and transitional epithelium	Three(3)
Schneiderian type	One(1)

Associated changes

Dysplasia	Two(2)-in squamous epithelium.
Malignant transformation to SCC	Two(2)

IV. Discussion

Inverted papillomas characteristically occur in the lateral nasal wall in the region of the middle turbinate and extends into the sinuses especially maxillary and ethmoid sinuses. It rarely extends into the sphenoid sinus(5). Carcinomas developing in them can be synchronous, ranging from tiny focus of squamous cell carcinoma to full fledged squamous cell carcinoma which is inversely proportional to the inverted papilloma component. Dysplasia alone can also be observed in a few cases. Development of metachronous carcinoma (2,3) in inverted papilloma has been reported to occur from 6 months to 13 years in a study which carries a bad prognosis when compared to synchronous carcinoma.(5,6,7). Malignant transformation has been reported in 10% (1,2) of cases and carries a bad prognosis. Intracranial invasion can also occur. Plain X ray, CT and MRI show unilateral polypoidal lesions in the sinonasal region extending to the sinuses. Displacement of septum and opacification of sinuses can also be seen in some cases. Pathologically, non keratinising squamous epithelium, transitional epithelium or mixed type with inverted endophytic growth surrounded by a well formed basement membrane without evidence of invasion is highly characteristic of inverted papillomas(1). Squamous cells maturing into superficial flattened layer and surface keratinisation can be seen. The cells showing distinct cell borders with clear cytoplasm (due to glycogen) can be seen. Histological features like intra-epithelial microcysts (2,3) containing macrophages, mucin and cell debris may be seen. They are closer to the surface and hence form a differential for rhinosporidiosis. The cylindrical cell type is characterised by the proliferation of columnar or oncocyte epithelium with both exophytic and endophytic branching papillae with long fibrovascular cores.(1,4). The cells show characteristically well defined cell borders with eosinophilic to granular cytoplasm. The nuclei are round, centrally placed and uniform. Intramucosal mucous cysts can also be seen.

Immunohistochemical expression is not significant in inverted papillomas. Role of HPV is debatable with varying results in several studies. Histopathologically, papillary squamous cell carcinoma, respiratory epithelial hamartomas, low grade papillary adenocarcinoma and rhinosporidiosis are the differentials that are to be considered.

IV. Conclusion

All the ten cases reported were males who were above thirty years with the predominant cell type being squamous type of epithelium which was found in four cases. Transitional and mucinous type of epithelium was inferred in Schneiderian type of inverted papilloma in our study. Two cases of dysplasia(20%) and two cases (20%) of malignant transformation in squamous type of epithelium has been observed in this study.

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Figures:

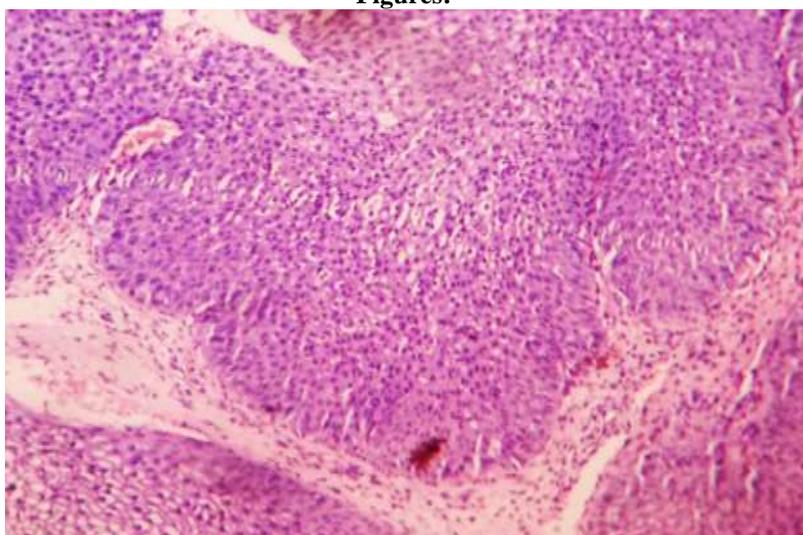


Figure 1: Inverted papilloma with squamous epithelium type

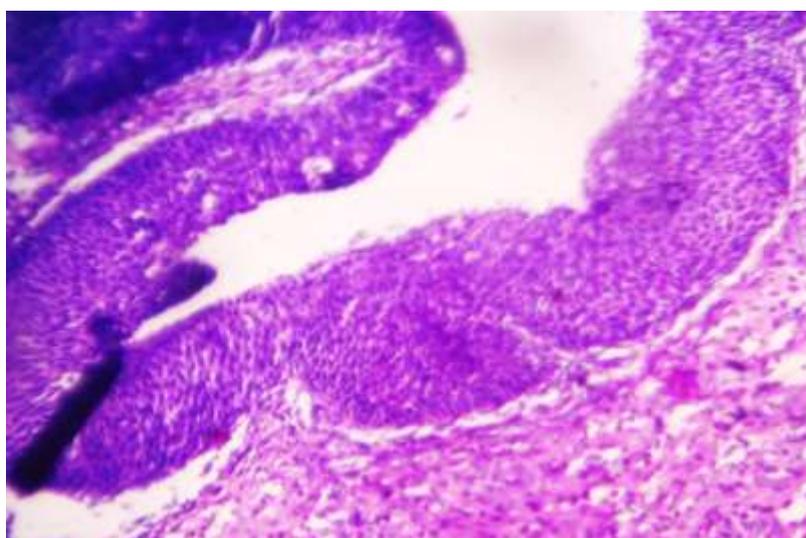


Figure 2: Inverted papilloma with transitional type

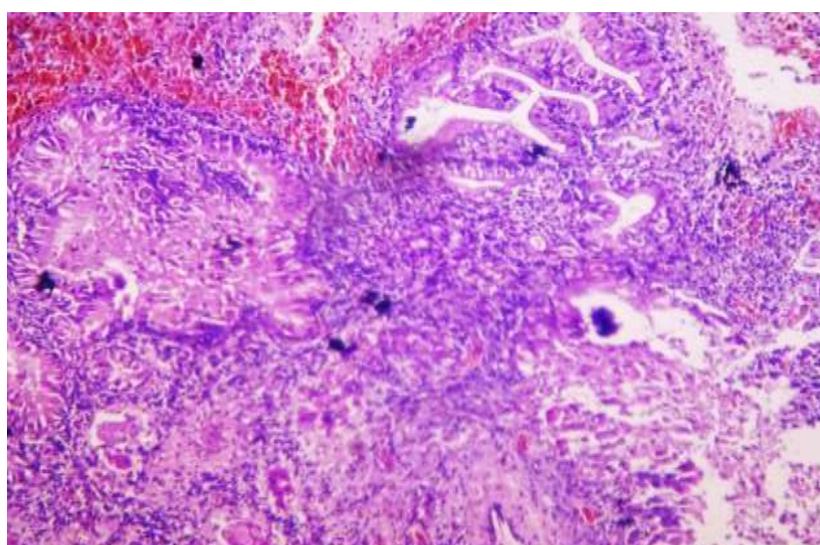


Figure 3: Schneiderian papilloma

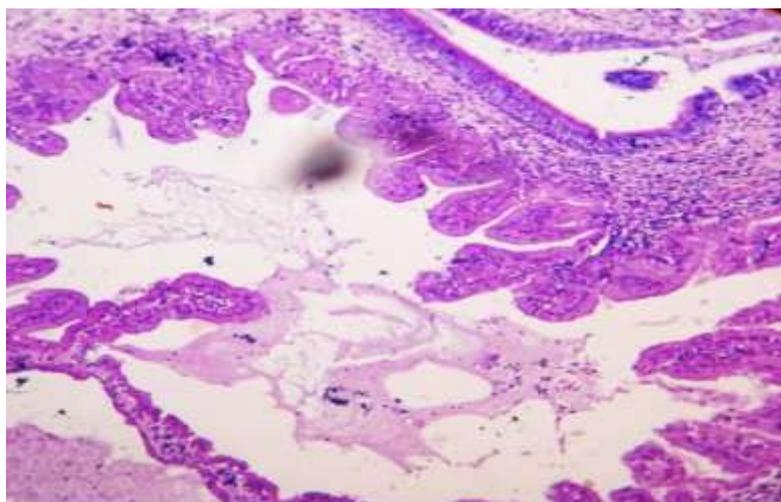


Figure 4: Schneiderian papilloma with oncocytic epithelium.

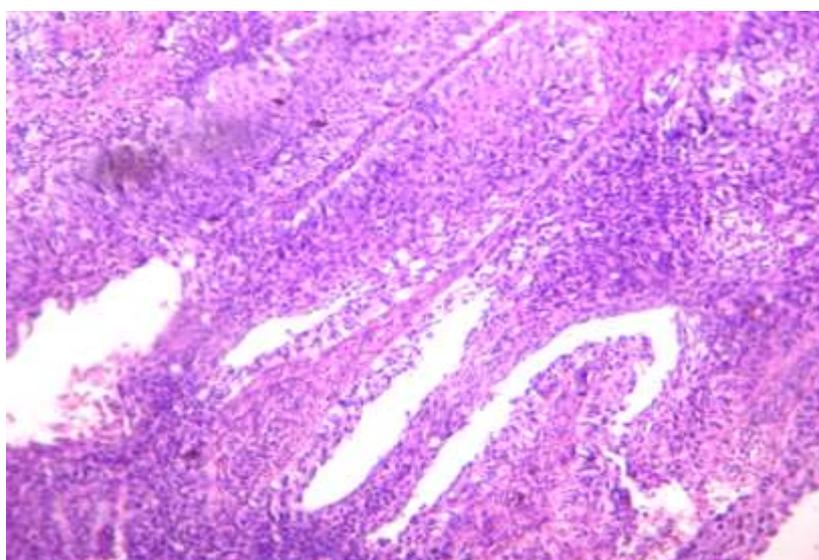


Figure 5: Inverted papilloma with malignant transformation.

*Marylillysusaiadaikalam. "Morphological Cell Type Analysis of schneiderian Papillomas. A Two Year Study At Tertiary Care Hospital." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) 16.9 (2017): 23-26