

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service Available Online at: www.ijdsir.com

Volume – 6, Issue – 6, December - 2023, Page No. : 48 - 52

Schneiderian papilloma to squamous cell carcinoma – A case report

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Citation of this Article: Dr. Birundha, Dr. Ramsreenivasen, Dr. Palaniappan, "Schneiderian papilloma to squamous cell carcinoma – A case report", IJDSIR- December - 2023, Volume – 6, Issue - 6, P. No. 48 – 52.

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Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Background: Sinonasal papilloma or Schneiderian papilloma is a rare benign tumour of paranasal sinuses and nasal cavities. It accounts for 0.5 to 4 % of all nasal tumours and 2-3% of all nasal polyps.

Case presentation: This case report deals with the case of a 50-year-old male with the complaints of mass in the left nostril and bleeding from the mass for past 2 months. Biopsy from the mass revealed it as a case of Schneiderian papilloma. Patient was not on follow-up. After one month he came with the complaints of profuse bleeding from the mass, biopsy revealed it as squamous cell carcinoma ex papilloma and proceeded for total maxillectomy.

Conclusion: Schneiderian papilloma may progress to carcinoma in 10% of cases. Malignancy is seldom diagnosed in early stages. Meticulous follow-up is essential to check for recurrence.

Keywords: Schneiderian papilloma, Squamous cell carcinoma, Paranasal sinuses, nasal tumours.

Introduction

Sinonasal papilloma or schneidarian papilloma is a rare benign tumour of paranasal sinuses and nasal cavities [1]. It accounts for 0.5 to 4 % of all nasal tumours and 2-3% of all nasal polyps [2].

Here we are presenting a case of squamous papilloma undergoing malignant transformation within a period of one month indicating its severity.

Case History

A 60 years old male, alcoholic and tobacco user came to the ENT OPD with the complaints of mass in the left nostril, bleeding from the mass, difficulty in breathing on and off, headache for past 2 months. Mass in the left nostril is insidious in onset, progressive in nature leading to complete nasal obstruction resulting in breathing difficulties. Bleeding from the mass is insidious in onset, progressive, without any aggravating or relieving Dr. Birundha, et al. International Journal of Dental Science and Innovative Research (IJDSIR)

factors. Patient has no comorbid illness like diabetes mellitus, hypertension, CAD, Bronchial asthma, epilepsy.

Clinical Findings

On examination, left nostril shows widening of nasal bridge, mucoid discharge from the nasal mass was present, cotton wool test appears negative. Right nostril shows inferior vestibule hypertrophy.

Radiological Findings

CT scan was done which shows a mildly enhancing soft tissue mass in the left nasal cavity with deviated nasal septum to left ethmoid, left maxillary and left sphenoid sinuses extending into left posterior choanae with erosion of pterygoid plate.



Figure 1: The mass appears eroding the medial wall of the left orbit and floor of the left orbit with infraorbital extension of soft tissue, eroding the left side hard palate and alveolar surface of left side maxilla, eroding the anterior wall of left maxilla with soft tissue extension into premaxillary space.

Single level II cervical node was enlarged. Diagnosed as left sinonasal mass likely malignancy and suggested biopsy.

Histopathological findings



Figure 2: Biopsy from the mass was processed and it shows hyperplastic squamous lining thrown into papillary folds



Figure 3: Papillae lined by Squamous epithelium with fibrovascular core containing stroma with dense mixed inflammatory cell collection and thin proliferative dilated blood vessels, suggestive of Scheneidarian papilloma.

The patient was not follow-up and he returned after a week with profuse bleeding from the mass for past 2 days accompanied by difficulty in breathing.

Rebiopsy was done and sent for histopathological examination. FIG4, 5 - Biopsy material showed papillary fragments with fibrovascular core lined by stratified squamotransitional epithelium showing moderate to severe nuclear atypia with increased mitotic activity. Dr. Birundha, et al. International Journal of Dental Science and Innovative Research (IJDSIR)

Atypical epithelial nests seem to invade into the stroma with focal areas of keratinisation, suggestive of Invasive squamous cell carcinoma, ex sinonasal papilloma.

Treatment

Patient was then subjected to Total maxillectomy. After weber Ferguson incision layers were separated. Anterior wall of maxilla exposed from midline upto zygoma laterally, superiorly up to orbit, inferioirly exposing the upper alveolus. Osteotomies done and anterior wall of maxilla opened, intraoral palatal flap elevated and hard palate or the inferior wall of maxilla drilled from anterior to posterior up to the soft palate.

The entire left maxilla was separated from soft palate, posterior from the pterygopalatine fossa structures, tumour along with free tumour margins were dissected with the completion of left maxillectomy. Hemostasis achieved, Guttapercha placed and maxillary cavity sealed, weber Ferguson incision site sutured post closure if the inner layers. Postop period was uneventful.

Pathological examination



Figure 4: Histopathological examination of left maxillectomy specimen shows an infiltrating neoplasm arranged in papillary fronds and islands containing epithelial cells with hyperchromatic nuclei, abundant eosinophilic cytoplasm and prominent nucleoli with focal areas of dysplastic epithelium



Figure 5: Nests of tumour cells invades the fibrous stroma with desmoplastic reaction.

Sections from the bony fragments shows infiltration of tumour nests and adjacent soft tissue were free of tumour. Diagnosed as a case of non-keratinising papillary Squamous cell carcinoma with pathological staging pT3NxMx.

Discussion

The nasal cavity and paranasal sinuses are covered with ciliated respiratory mucosa of ectodermal origin, known as Schneiderian epithelium, which can give rise to different types of sinonasal carcinomas. It is very important to diagnose and treat the tumour at the earliest [1]. Surgical resection is the treatment of choice [3]. Paranasal sinus squamous cell carcinomas accounts for about 3% Amon all head and neck malignancies [4]. Sinonasal tumours arising from Schneiderian papilloma's, most frequently associated with squamous cell carcinoma (SCC), are rare and often present with non-specific symptoms [5]. Up to 10% of SCCs are associated with inverted papilloma (IPSCC) [6]. Most of these tumors present with nonspecific symptoms. With complex anatomy and various normal variants of the sinonasal tract there exists difficulty in identifying the origin and extension of large sinonasal tumours, The invasion of tumour into vital structures such as the brain,

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optic nerves, and internal carotid artery affects patients' prognosis. Thus, diagnostic imaging plays a key role in predicting the histological subtype and in evaluating a tumour extension into adjacent structures [7]. Sinonasal inverted papilloma or Schneiderian papilloma is a rare benign tumour of paranasal sinuses and nasal cavities. It can cause bone remodelling and has a significant malignant potential. Malignant histologic features included atypical mitoses, necrosis, bone invasion, lymph vascular invasion, decreased transmigrating neutrophils, paradoxical maturation, dyskeratosis and/or perineural invasion [8]. Hence, it is very important to diagnose and treat the tumour at the earliest [1]. The inverted and columnar cell papillomata were typically located in the middle meatus and the exophytic papillomata were predominantly located multicentrically on the nasal septum [9]. Surgical resection is the treatment of choice [3]. Squamous cell carcinomas (SCCs) of the Nas ethmoidal complex are rare and aggressive malignancies [10].

Surgical management, although is the standard of care, is really amenable due to structures involved, usually intracranially [11].

Inverted papilloma surgery is currently performed primarily with an endoscopic approach, a technique that has a recurrence rate of 12% [12]. outine lateral rhinotomy with en bloc resection of the lateral nasal wall, including the entire schneiderian membrane, was recommended [13]. The most important factors in preventing the recurrence of inverted papilloma are the determination of the location of the attachment and the completeness of resection in the primary endoscopic surgery [13]. Risk factors associated with squamous cell carcinoma are smoking and tobacco usage, HPV and occupational exposure to nickel and welding fumes. Work exposure to organic dusts is also identified in patients with malignant paranasal sinus tumors [14]. Human papillomavirus infection has been investigated as a potential etiological factor linked to malignant alterations of papilloma [10]. The standard of care is surgery, when amenable, followed by radiotherapy. Initially symptoms were non-specific mimicking chronic sinusitis. If the disease progresses advanced nasal obstruction and visual symptoms will develop [1].

Malignant transformation of schneidarian papilloma's is a known phenomenon, whose transformation rate to squamous cell carcinoma is as high as 10%. Approximately 15% of sinonasal squamous cell carcinomas are synchronously or metachronously associated with papilloma [3].

This case report deals with a 60years old male, known alcoholic and tobacco user presented with a left nasal mass with bleeding and discharge from the mass who was diagnosed as a case of schneidarian papilloma progressed to squamous cell carcinoma after a month and was proceeded to maxillectomy with marginal clearance. Post operatively patient was on follow-up.

Conclusion

Sinonasal papilloma although a benign tumour may transform into malignancy. Scheneidarian papilloma may progress to carcinoma in 10% of cases. Malignancy is seldom diagnosed in early stages. Clinical diagnosis, radiological investigations and histopathological biopsy diagnosis are mandatory for staging of the tumour which helps in outlining the treatment protocol. Diagnosis remains challenging, whereas the complex anatomy of the sinonasal cavity poses therapeutic challenges. Developments in endoscopic surgery, RT, and molecular targeted therapies lay the foundations for optimal management in the near future.

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