



Case Report

Intraoral Nevi of Gingiva - A Case Report

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How to cite: Dinesh Yasothkumar., *Intraoral Nevi of Gingiva - A Case Report. Int J Head Neck Pathol* 2023; 6(2):12-17.

DOI: <https://doi.org/10.56501/intjheadneckpathol.v6i2.981>

Received:01/09/2023

Accepted:09/09/2023

Web Published:03/10/2023

Abstract

Intraoral nevus is a benign skin and mucosal tumour characterised by the presence of melanin-producing, neuroectodermal derived cells that can range in colour from light to dark brown, reddish brown, blue, or red. It comes in a variety of shapes, from oval to spherical. Oral melanotic nevi, which causes localised pigmentation, are a rare oral lesion. In a major survey, they were found in only 0.1 % of the population. Nevi can be acquired over time or be present from birth. Congenital nevi are hamartomas, but acquired nevi are benign neoplasms. They are most typically found on the palate, but they can also be found on the buccal mucosa, gingiva, and lips. A case report of an intramucosal nevus of gingiva in a 25-year-old woman and its surgical excision is presented in this article.

Keywords: Nevus, Hamartoma, Oral melanotic nevi.

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INTRODUCTION

Intraoral mucosal melanocytic nevi are benign melanocytic tumours that have a histological appearance similar to those found on the skin. Though solitary nevi are prevalent, intramucosal melanocytic nevi with numerous polypoid appearances in the oral cavity are uncommon. The first documented case of an oral Nevus was described by Ackermann and Field in 1943.[1,2] The term Intra Lamina propria Nevus was coined by Comerford et al. for the first time. Intramucosal nevus was coined by King et al., 1967, as a less anatomically descriptive name that clinicians might grasp. [3,4]

The origin of Nevi cells from the neural crest is widely accepted but it is unclear whether the cells are real melanocytes or closely related. The existence of distinct cell types is debated. Melanocytes are dendritic cells that transfer melanin to adjacent keratinocytes and are found suprabasally in the epithelium. Nevus cells, on the other hand, have spherical cytoplasm and lack the dendritic processes found in melanocytes. Melanin is not transmitted to neighbouring keratinocytes.[5]

Females account for two-thirds of reported intraoral Melanocytic Nevi, and the average age at diagnosis is 35 years. Nevi are typically small (0.5 cm on average), well-circumscribed, round-to-oval lesions with a flat (macular) or raised (papular) surface. More infrequently, significant lesions such as nodules or polypoid masses have been recorded. Subepithelial nevus is the most common kind, followed by common blue nevus; complex nevus, and junctional nevus. These are typically asymptomatic lesions identified by coincidence during a routine dental examination. Excision is essential to rule out other pigmented solitary lesions or possibly early melanoma because an appropriate clinical diagnosis is not generally achieved at that point. [6,7] The mucosal epithelium contains a large number of nevus cells that constitute the intramucosal nevus. Non-pigmented nevi make up around 15% of intramucosal nevi. Melanocytic nevi can be acquired or congenital. [8,9]

Unlike normal melanocytes, which are routinely dispersed as single cells amid basal keratinocytes to create the "epidermal-melanin unit," nevomelanocytes tend to cluster in compact theques.[10] Given the numerous histologic similarities, the pathophysiology of intraoral Nevi appears to be comparable to that of cutaneous lesions. Melanocytic proliferation is divided into three phases in terms of morphogenesis: proliferation of benign neoplastic melanocytes along the submucosal–mucosal junction (junctional nevus); migration of these cells to the underlying mesenchymal tissue (compound nevi); and loss of the junctional component of the naevus, so that all remaining nevomelanocytes are located within the subepithelial compartment (subepithelial nevi).[11] Subepithelial proliferation of typically pigmented, elongated, often bipolar melanocytes, often accompanied by stromal fibrotic reaction and the presence of melanophages, characterises the blue nevus. Large, so-called plaque-type blue nevi have been reported on occasion. Another uncommon variety is the Spitz nevus, which is distinguished by the great size of the lesional cells. A mixture of a blue nevus with another nevus type, commonly a complex nevus, is seen in combined nevi.[12]

CASE DESCRIPTION

A 25-year-old female patient was referred to the Saveetha Dental College and Hospital, Department of Oral Medicine due to a painless pigmented swelling in the gums for the past 3 months. She presented with no family history of cancer and denied smoking and alcohol consumption. No relevant medical history or surgical history.

On physical examination, no extraoral abnormalities were detected. The intraoral examination showed the presence of an uneven, firm, non-tender, pigmented growth of size approximately 2 cm in diameter in the right mucogingival region in relation to 12, 13 (Fig 1). There were no observable or reported harmful habits or signs of injury or trauma. Provisionally the lesion was diagnosed as fibroma, papilloma and melanoma. Other dental findings were partially impacted 38,48, class 1 buccal pit in relation to 37 and chronic generalised gingivitis. On IOPA radiographic examination no abnormalities were detected in relation to 11, 12, 13 (Fig 2).

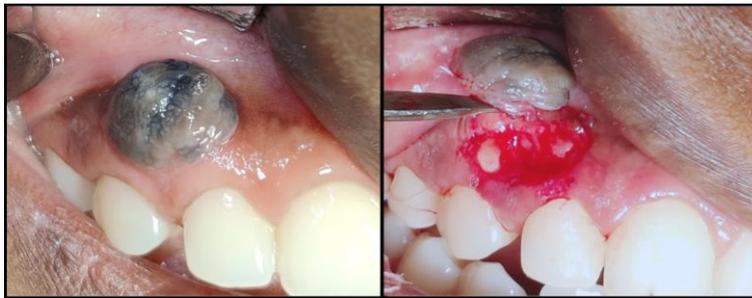


FIGURE 1: Clinical image of the lesion



FIGURE 2: IOPA radiographic image in relation to 11,12,13.

Therefore, an immediate excisional biopsy was performed. The incision for biopsy was elliptic, and the lesion was completely removed. The removed material was fixed in 10% formalin and sent for histopathological examination. On gross examination, a single soft tissue specimen received in formalin, firm in consistency, greyish black in colour, measuring 1.5x1x0.8 cm and entire specimen were kept for processing (Fig 3).

Histopathology findings

On histopathological examination, section shows dense fibrous connective tissue stroma with evidence of numerous nests & clusters of round to oval cells with eosinophilic cytoplasm with variable sized round to oval hyperchromatic basophilic nuclei, along with brownish black melanin pigmentation seen in the cytoplasm suggestive of nevus cells restricted to the superficial connective tissue stroma.(Fig 4) There is also evidence of overlying parakeratinized stratified squamous epithelium of variable thickness with the superficial layer consisting of few clear cells. Moderate vascularity and areas of haemorrhage are evident. Adipose tissue is evident in deeper planes. Histopathology was suggestive of Benign Neoplasm of Melanocytic origin –

Melanocytic Nevi of Oral Mucosa. On Immunohistochemical analysis Ki67 marker showed less than 5% positivity suggestive of a non-aggressive lesion. Patient was followed up for 5 months and clinically no abnormalities detected.



FIGURE 3: Gross image of the specimen

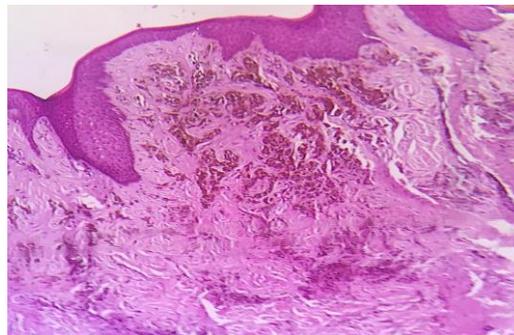


FIGURE 4: Photomicrograph of the lesion

This case report is quite comparable to other publications on the epidemiology and clinical manifestations of intramucosal nevus. In this case, the diagnosis and treatment were carried out according to the current literature's standard operating procedures.

DISCUSSION:

Intraoral nevi are a benign cutaneous or oral mucosa lesion. In 65-80% of cases, they are round or oval in shape, well circumscribed, and slightly elevated. Oral nevi are usually smooth, with only a few papillated or rough surfaces. In this case, Nevi was not well circumscribed, spherical, or smooth, but had uneven boundaries and a multi polypoid shape.

Oral nevi of the intramucosal type are by far the most common, accounting for 63 to 70% of all oral nevi. It's common in the hard palate (40 %). The buccal mucosa is the second most common site for oral nevi (20%), with gingiva accounting for 10% of all oral nevi. Around 17% of all intramucosal nevi are found in the gingiva. The present case of intramucosal nevi was found on the gingival surface, which is unusual. Approximately 75% of the nevi are less than 0.7 cm in length. Only around 5% of the cases had nevi that were larger than 1.3 cm. (5,6). The female-to-male ratio was 1.5:1 reported by Gongora et al on ten cases of oral Melanotic Nevi; the average patient age was 30 (Range = 5 to 73 years).

According to Ferreira et al, the hard palate (33 %) was the most common site of lesions, followed by the lip vermilion and buccal mucosa (18 % each). Lesions were detected less frequently (16%) in the gingiva, and were uncommon in the soft palate (5%), retromolar pad (5%), and labial mucosa (5%).

The following histologic categories had the highest relative frequency: subepithelial (40%), common blue (30%), compound (20%), and junctional (20%) according to Gongora et al. Ferreira et al on clinicopathological analysis 100 cases of Oral melanocytic Nevi suggested that histologically, the most common subtype of Oral Nevi was the intramucosal nevus, representing 61% of all cases, followed by the common blue nevus (23%). Less commonly seen subtypes included compound (7%), junctional (3%), and cellular blue, dysplastic, and combined nevi (2% each) [13].

On Immunohistochemical analysis S-100 protein expression was high, HMB-45 reactivity was varied, and c-Kit expression was high in junctional melanocytes. In every case, Ki-67 was approximating around 3.(14) Various new antibodies, primarily cycle regulatory proteins such as p21 and cyclin D1, protein Skp2, and cell proliferation markers mini-chromosome maintenance and geminin, have been tested in the last few years in order to clarify the pathogenesis of oral malignant melanoma and to investigate differences between oral melanotic nevi and oral malignant melanomas[14,15].

No data on the potential malignant transformation rate of oral melanotic nevi are available. About one third of oral melanomas are preceded by oral pigmentation for months or even years, but the histologic phenotype of such presumed precursor lesions remains unidentified.

Clinical significance

Oral cavity abnormalities must be monitored by healthcare practitioners on a regular basis. Dental health experts with knowledge on how to recognise and treat pigmented oral lesions can use preventive treatments to minimise the development of malignancy.

CONCLUSION

The histopathological evaluation of these oral lesions should be done with caution since it may reveal pathological changes that the patients are unaware of. While nevi are uncommon, they can occur in the oral cavity and should be differentiated from other pigmented lesions such as oral melanomas, which, while rare, have a high mortality rate.

Financial support and sponsorship:

Nil

Conflicts of interest

There are no conflicts of interest

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