



“Subgemmal Neurogenous Plaque – An Under-Recognized Entity”

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ABSTRACT

Subgemmal Neurogenous Plaque an under-recognized entity is a congregation of nerve plexus and ganglion cells representing a benign anatomic variation. Most common location of occurrence is posterolateral border of the tongue. It is the old term yet not much commonly used as it remains frequently undiagnosed. Though it is generally asymptomatic but in a few cases, may produce signs and symptoms. Oral physicians and Pathologists should be conscious about this structure to circumvent any ignorance or dubiety with neural lesions.

Keywords: Neural tissue, Subgemmal nerve plexus, posterolateral Tongue, ganglion cells, Taste buds

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INTRODUCTION

Subgemmal neurogenous plaque is a congregation of nerve plexus and ganglion cells found commonly in the posterolateral border of the tongue, which is actually a normal neural structure representing a benign anatomic variation¹. Although the term is not new and it is not as uncommon as is supposed to be, it is still frequently undiagnosed. So through this short communication the objective is to bring this common yet uncommonly reported anomaly to the readers especially oral physicians so as to have insight into these pathoses for the effective diagnosis and management [1].

Most commonly found as a regional anatomic variation associated with the taste buds- circumvallate, fungiform and foliaceous lingual papillae, and the lingual tonsil. SNP's usually manifest as small nodule or in the form of ulcer on the border of the tongue. Sometimes it may cause burning in the affected area. There are some imprecise features which are confused as inflammatory hyperplasias, benign lymphoepithelial lesion or epidermoid carcinoma [2].

The evolution of this SNP can be correlated to stimulatory effect from gustatory nerve fibers. It may also arise as reactive lesion in foliate papillae of tongue due to frequent trauma.

PATHOGENESIS

Tongue is commonly known to have specialized mucosa because of the presence of numerous taste buds in the different papillae present on its surface. The number of taste buds is more in circumvallate, fungiform and foliate papillae and is less frequent in filliform papillae. Thus the more number of taste buds are present in posterior tongue than lateral and dorsal surfaces. The nerve fibers from glossopharyngeal and chorda tympani nerves innervate the taste buds. This SNP is sometimes detected in biopsies of human tongue which were first described by McDaniel as collection of nerve plexus and ganglion cells in a similar pattern like Neurofibroma does. He gave the term hyperplastic subgemmal neurogenous plaque which was replaced by the term subgemmal neurogenous plaque later. The term was changed to show the non association of the lesion with any pathologic process [3].

To find SNP on tongue biopsy is most of the times incidental and exhibits no significant characteristic features. The nerve bundles present in SNP play the routine function of taste and somatosensation. Thus there is normal overlying epithelium with the presence of adequate taste buds.

CLINICAL FEATURES

Subgemmal neurogenous plaque (SNPs) usually present as an asymptomatic lesion, accounting for its misdiagnosis. SNPs may present from nodules to ulcers, reddish or white coloured. It may also present with symptoms like burning sensation and pain. Clinically it may also present as a firm, tender or painful nodule [4].

HISTOLOGICAL FINDINGS

Subgemmal Neurogenous Plaques are known to show biphasic structures. One (superficial zone) resembles with neurofibroma and the other (deep zone) represent neuroma like patterns. The superficial part of SNP exhibits ovoid to spindled cells arranged in cords. Underlying connective tissue is composed of collagenous stroma. This gives the pattern similar to neurofibroma. Whereas the deeper zone shows small irregular nerve bundles surrounded by the perineurium layer representing pattern similar to neuroma [4, 5].(Fig 1)

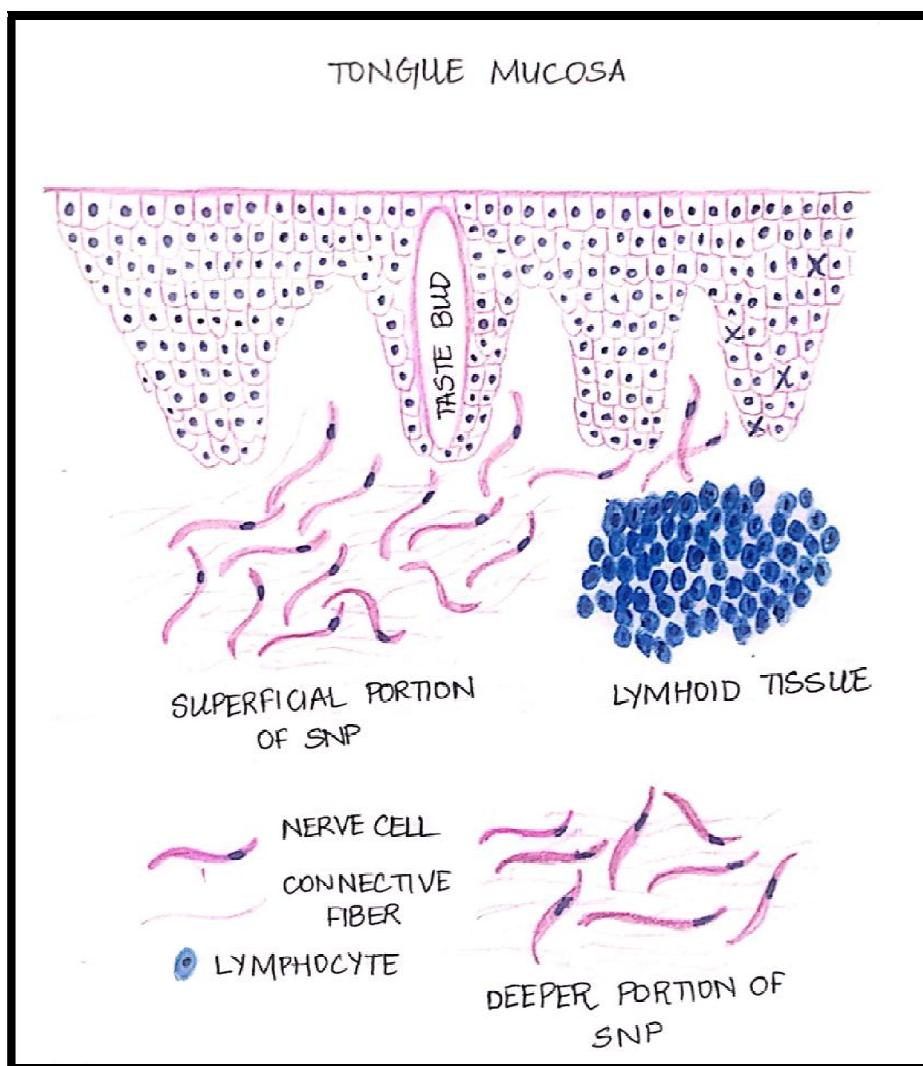


Fig 1: Schematic diagram of Tongue mucosa demonstrating superficial and deep zones of Subgemmal Neurogenous Plaque

Periodically a few ganglion cells can also be seen in these lesions. There can be random presence of different sized nerve fibers, axons, neurilemma cells implanted in scar tissue. SNP can be easily confused with Traumatic neuroma. But there are a few distinguishing features like the location of Traumatic neuroma, , and the presence of a scar and the absence of the biphasic pattern².

DIFFERENTIAL DIAGNOSIS

Differential diagnosis of Subgemmal Neurogenous Plaques include various benign and malignant tumors of tongue. It can also involve the neurofibromatosis, ganglioneuromas or neuroblastoma of the tongue. Squamous cell carcinoma can also be one such differential diagnosis. Various cysts of tongue can also be included under the differential diagnosis [5].

DIAGNOSIS AND MANAGEMENT

SNPs are actively diagnosed with the help of human tongue biopsies. Surgical excision of lesion has shown to provide relief.

CONCLUSION

It is important to make the oral physicians and pathologists aware regarding the SNPs as these are the distinctive structures associated with the normal taste buds and are incidental findings on tongue biopsies. Clinically they manifest as painful or painless nodules and should be taken into differential diagnosis of head and neck carcinoma. They are unique as they present with both neurofibroma and neuroma like patterns on histopathology. Oral physicians and Pathologists should be conscious about this structure to circumvent any ignorance or dubiety with neural lesions.

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