A 28-year-old woman, with noncontributory social and medical histories, was referred to the Oral Medicine Service of a public hospital in Belo Horizonte, Brazil; she complained of an asymptomatic nodule at the posterior dorsal surface of the tongue. She reported that the lesion had been present for the preceding 6 months. Intraoral examination revealed a well-defined nodule, measuring approximately 0.6 × 0.7 cm, anterior to the circumvallate papillae on the left posterior tongue (Figure 1, A and B).

DIFFERENTIAL DIAGNOSIS

Considering the clinical presentation and localization of the lesion, we included neurofibroma, neurilemmoma, granular cell tumor, reactive lesions, such as giant cell fibroma or focal fibrous hyperplasia, lingual thyroid, and other lingual papillae alterations, in the differential diagnosis.

The tongue is a common site for benign connective tissue lesions. Neurilemmoma, or schwannoma, is an encapsulated submucosal mass, typically localized as an asymptomatic lump in the tongue.1-3 Although they can arise at any age, the peak incidence is between 25 and 55 years of age. Only 25% of all extracranial schwannomas are located in the head and neck, with only 1% originating in intraoral regions.3 Notably, these intraoral lesions show a predilection for the tongue, with the tip being the least affected part. The mobile portion, such as the dorsum, of the tongue is the most commonly affected site; schwannoma that affects the base of the tongue is rare.4

Another neural tumor usually found in the tongue is neurofibroma. This lesion also manifests as an asymptomatic mass. It can appear as multiple lesions or as a solitary lesion, and may arise at any age. Neurofibromas are most commonly observed in the skin, and they rarely affect the oral cavity; however, their presence within the oral cavity is frequently associated with neurofibromatosis type 1. The tongue, buccal mucosa, gingiva, and lips have been reported to be affected by neurofibromas, with the tongue being the most common intraoral site.5,6

The oral granular cell tumor is a benign tumor probably of nerve sheath origin, and can also be found in the tongue. Clinically, it is observed as an asymptomatic mass with intact overlying epithelium; the color of the tumor surface varies from the color of a normal mucosa to yellowish. The tongue and the buccal mucosa are commonly affected intraoral sites, with the posterior portion of the tongue being the least affected region. This tumor generally occurs in middle-aged or older adults.7,8

Other lesions that should be considered in the differential diagnosis are giant cell fibroma and focal fibrous hyperplasia. Giant cell fibroma is a non-neoplastic oral lesion that usually presents as an asymptomatic mass. It commonly occurs in patients younger than 30 years, has a slight female predilection, and is found most frequently on the gingiva and, to a lesser extent, on the tongue and the buccal mucosa.9 The focal fibrous hyperplasia, or irritation fibroma, typically presents as a pink nodule with a smooth surface and has a color similar to that of the surrounding mucosa. The labial mucosa, tongue, and gingiva are common sites. They range in size from tiny lesions to large masses; however, most of them are 1.5 cm or smaller in diameter. The peak incidence is between the fourth and sixth decades of life.10

Lingual thyroid may be seen as a tumoral lesion between the foramen cecum and epiglottis. As the patient in the present case presented a lesion very anterior to this site, we have not investigated functioning thyroid tissue in the neck.

The clinical appearance of the lesion may also lead to the diagnosis of enlarged or ectopic circumvallate pa-
pillae, as well as prominent lingual papillae. Another pathologic condition that can be included in the differential diagnosis is the subgemmal neurogenous plaque. This alteration typically has a subgemmal location and can be associated with an erythematous area, ulcer, white patch, or hyperplastic papule, usually located in the lateral border of the tongue.

**DIAGNOSIS AND MANAGEMENT**

On the basis of the diagnostic possibilities and considering the probable benign nature of the lesion, an excisional biopsy was performed. The histopathological evaluation revealed a mucosal fragment composed of normal epithelium, abounding with taste buds, and neural proliferations underneath the taste buds. The superficial layer of the connective tissue consisted of a fibrillar neurofibromalike pattern, with spindle cells organized in cords parallel to the epithelium, whereas the deep zone was composed of ganglion cells in a neuromalike pattern (Figure 2, A and B). After histopathological analysis, immunohistochemical reaction for S-100 protein was performed. This reaction highlighted the bi-

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**Fig. 1.** A and B, Clinical presentation. A well-defined nodule anterior to the circumvallate papillae on the left posterior tongue is observed.

**Fig. 2.** A, Histologic examination revealed a mucosal fragment composed of normal epithelium abounding with taste buds and neural proliferations underneath the taste buds (hematoxylin and eosin stain, original magnification ×100). B, Histologic examination revealed spindle cells organized in cords parallel to the epithelium (hematoxylin and eosin stain, original magnification ×400). C, Immunopositivity for S-100 protein in spindle cells of the superficial component (streptavidin-biotin, original magnification ×100). D, Immunopositivity for S-100 in spindle cells involved in the neural proliferation associated with the taste buds (streptavidin-biotin, original magnification ×400).
phasic pattern of the plaque. Both the spindle cells of the superficial component and the neural proliferation associated with the taste buds were S-100 positive (Figure 2, C and D). The findings of both the histologic evaluation and immunohistochemistry were consistent with the diagnosis of subgemmal neurogenous plaque.

**DISCUSSION**

The subgemmal neurogenous plaque was first described by McDaniel\(^\text{11}\) in 1999 as a subepithelial nerve plexus associated with the taste buds and was classified as a small neural proliferation. Some studies show the presence of taste buds, lingual foliate papillae, and lymphoid follicles on the posterolateral border of the tongue\(^\text{12}\); however, little is known about the biological characteristics and clinical relevance of subgemmal neurogenous plaques.

Microscopically, the subgemmal neurogenous plaque is characterized by subepithelial aggregates of ganglion cells and nerve plexus, usually associated with taste buds of the tongue.\(^\text{11,12}\) Immunohistochemistry was performed for S-100 protein to confirm the biphasic pattern of the plaque, because most of the neural proliferations were subjacent to taste buds.

Patients who present with subgemmal neurogenous plaques usually do not show clinical signs or symptoms, although this subgemmal neurogenous plaque is occasionally associated with an erythematous area, ulcer, a white patch, a hyperplastic papule, and a burning sensation in the tongue.\(^\text{11-13}\) Although subgemmal neurogenous plaques usually do not have significant clinical consequences, their removal is necessary for the differential diagnosis with other lesions that affect this region, such as benign or malignant neoplasm.\(^\text{13-15}\)

**REFERENCES**