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Non-Syndromic Solitary Neurofibroma of the Hard Palate: A Case Report and Literature Review

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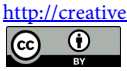

Abstract

Solitary neurofibromas of the palate are rare benign tumors, and their occurrence without syndromic association is even less common. We present a case of a 82-year-old patient with a painless, slow-growing lesion on the hard palate. Clinical examination and histopathological analysis confirmed the diagnosis of a non-syndromic solitary neurofibroma. Surgical excision was performed, and no recurrence was observed during the 24-month follow-up. This report emphasizes the importance of recognizing these uncommon lesions, distinguishing them from other palatal masses, and highlights the role of histopathology in definitive diagnosis.

Subject Areas

Dentistry

Keywords

Solitary Neurofibroma, Hard Palate, Oral Cavity, Peripheral Nerve Sheath Tumor, Non-Syndromic Neurofibroma

1. Introduction

Neurogenic tumors of the oral cavity are uncommon [1]. Among them, neurofibromas are benign peripheral nerve sheath tumors that involve multiple nerve fascicles and are composed of Schwann cells, perineurial-like cells and fibroblasts [1]. They may present as solitary lesions or occur in association with neurofibromatosis type 1, also known as von Recklinghausen disease [1] [2]. Rarely, multiple neurofibromas may develop without fulfilling diagnostic criteria for neurofibromatosis [3].

Oral solitary neurofibromas are rare, particularly when they are not associated with neurofibromatosis type 1 [4]. The hard palate is an unusual site of occurrence [5]. Because palatal swellings are more commonly related to salivary gland tumors, mucoceles, fibrous lesions or other benign mesenchymal tumors, neurofibroma is rarely suspected clinically [6]. Therefore, histopathological examination is mandatory to establish the diagnosis [7].

This article reports a rare case of non-syndromic solitary neurofibroma of the hard palate in an 82-year-old Moroccan woman and reviews previously published cases of solitary neurofibroma of the hard palate.

2. Case Report

An 82-year-old female patient presented with a complaint of swelling in the left maxillary palatal region. The patient's medical history revealed hypertension controlled with medication. General examination showed no cervical lymph node enlargement and no other oral or cutaneous swellings. There were no clinical features suggestive of neurofibromatosis type 1, such as multiple neurofibromas, café-au-lait macules or other systemic manifestations (**Figure 1**).

Figure 1. Extraoral view.

Periodontal examination revealed a localized mass involving the palatal mucosa. The lesion had a fibrous consistency and had been present for approximately one year (**Figure 2**).

Radiographic examination did not reveal any abnormal bone resorption around the lesion. Based on the clinical presentation and location, a provisional diagnosis of pleomorphic adenoma was considered (**Figure 3**).

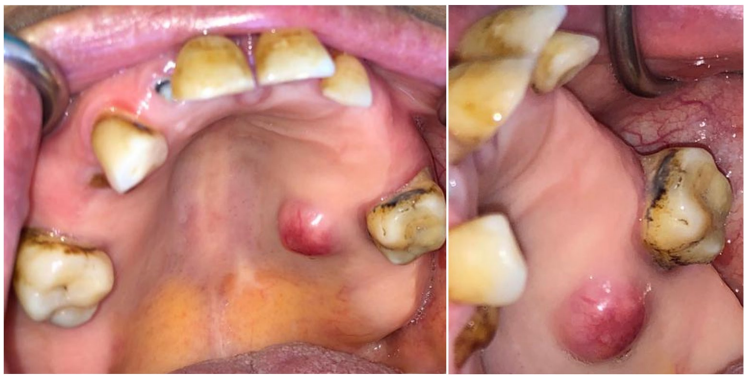

Figure 2. Intraoral view.

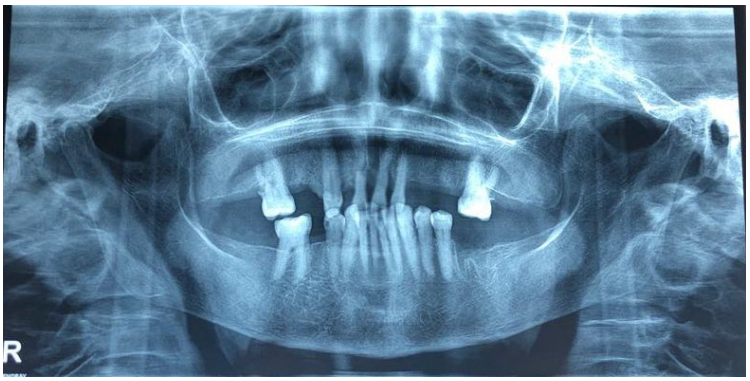

Figure 3. Radiograph panoramic.

The lesion was surgically excised. Intraoperatively, an ovoid, encapsulated mass was observed. The resected specimen measured **1 × 0.8** cm and was submitted for histopathological examination (Figure 4).

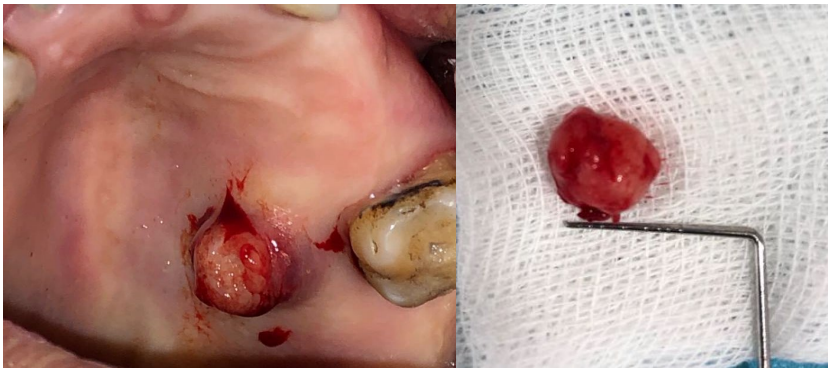

Figure 4. Intraoperative photographs.

Microscopic examination revealed a spindle-cell proliferation with poorly defined eosinophilic cytoplasm and fine, wavy, regular nuclei. The lesion was richly vascularized and showed no cellular atypia or mitotic activity. Immunohistochemical analysis demonstrated strong and diffuse positivity for S-100 protein, supporting a neural origin. These histopathological and immunohistochemical findings were consistent with a diagnosis of solitary neurofibroma (Figure 5).

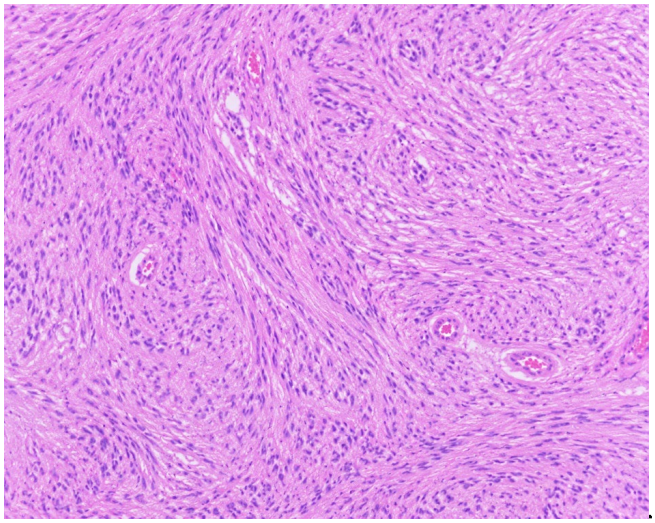

Figure 5. Histopathological slide of a solitary neurofibroma of the hard palate (H&E Stain).

The postoperative course was uneventful. The patient was followed for two years, and no recurrence was observed during the follow-up period (**Figure 6**).

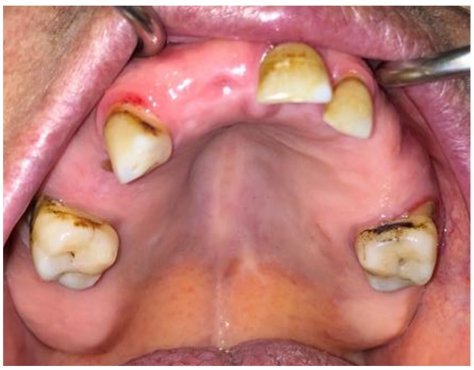

Figure 6. Intraoral photograph 2 years post-excision of the solitary neurofibroma of the hard palate.

Summary of Reported Cases of Solitary Neurofibroma of the Palate:

Table 1 summarizes documented cases of solitary neurofibroma of the palate, encompassing patients of various ages and sexes [4]-[14]. It details the clinical characteristics of each lesion, including size and palatal location, as well as the histopathological features observed, such as cell morphology and expression of markers like S-100 protein [4]-[14]. The treatment for each case primarily consisted of surgical excision, with follow-up confirming the absence of recurrence in most patients [4]-[14]. This comparative summary highlights the rarity and clinical variability of these tumors, emphasizing the importance of precise histopathological diagnosis to differentiate neurofibromas from other palatal masses [4]-[14]. The table also includes the most recent case reported by Alrazzouk *et al.* (2025) [14], a solitary neurofibroma in a pediatric patient, underscoring the age variability and the need for clinical vigilance across all age groups.

Table 1. A literature review of clinicopathological features of solitary neurofibroma of the hard palate.

Author/Year	Age/Sex	Clinical features	Histopathological features	Treatment	Follow-up	Reference
Pollack RP, 1990	27/F	Palatal mucosal mass (15 × 8 × 4 mm)	Keratinized squamous lesion, well-demarcated	Excision under local anesthesia	No recurrence after 10 months	[4]
Shimoyama T, 2002	25/F	Palatal mass (1.2 × 1.0 × 1.0 cm)	Spindle cells with Schwann cell features	Surgical excision	No recurrence after 2 years	[5]
Johann AC, 2008	39/F	Fibrous pink nodule on posterior hard palate	Fusiform cell proliferation; S-100 immunopositivity	Excision	No recurrence	[6]
Costa FW, 2014	54/F	Pedunculated nodular lesion (8 mm)	Spindle-cell proliferation with undulated nuclei and mast cells	Excision	No recurrence	[7]
Priya M, 2016	55/M	Sessile hard-palate mass (2 × 2 cm)	Spindle-shaped cells in collagenized stroma	Excision	No recurrence after 5 months	[8]
Sekhar P, 2019	55/F	Well-circumscribed smooth swelling (0.5 × 0.5 cm)	Interlacing spindle cells; S-100 positive	Excision	No recurrence after 2 weeks	[9]
Sharma P, 2020	**NR**	**Palatal lesion clinically simulating a salivary gland neoplasm**	**Neurofibroma confirmed histopathologically**	**Excision**	**NR**	[10]
Mahalle A, 2016	NR	Solitary oral plexiform neurofibroma	Plexiform neurofibroma; S-100 positive	Excision	NR	[11]
Mazzoleni S, 2009	56/F	Ulcerated posterior palatal mass	S-100 positive; EMA/keratin negative	Excision	Not reported	[12]
Taketomi T, 2021	24/F	Dome-shaped mass (1.2 × 0.8 cm)	Spindle cells with wavy nuclei; S-100 positive	Tumor resection under general anesthesia	No recurrence after 5 years	[13]
Alrazzouk MH, 2025	16/F	Asymptomatic firm swelling of anterior hard palate (1.5 × 1.0 cm)	Spindle cells with regular wavy nuclei; S-100 positive; CD34 negative	Surgical excision	No recurrence after 6 months	[14]
Present Case	82/F	Fibrous swelling of left maxillary hard palate (1 × 0.8 cm)	Spindle-cell proliferation; S-100 positive	Excision	No recurrence after 2 years	—

3. Discussion

Neurofibromas are benign peripheral nerve sheath tumors composed of Schwann cells, perineurial-like cells and fibroblasts [1] [4] [5]. They can occur as solitary lesions or as part of neurofibromatosis type 1 [2] [3]. Solitary neurofibromas of the oral cavity are uncommon, and involvement of the hard palate is particularly rare [4]-[8].

The pathogenesis of isolated solitary neurofibroma remains unclear because few cases have been reported [4]-[12]. In the oral cavity, neurofibromas may arise from small peripheral nerve branches in different anatomical sites, including the tongue, buccal mucosa, gingiva, floor of the mouth and palate [1] [4] [5]. The clinical presentation is often nonspecific and usually consists of a slow-growing, asymptomatic swelling [2] [6]. Because of this nonspecific appearance, palatal neurofi-

bromas may mimic salivary gland tumors, fibromas, mucoceles or other benign mesenchymal lesions [6] [10].

In the present case, the lesion was clinically suspected to be a pleomorphic adenoma because of its palatal location and fibrous consistency. This highlights the importance of histopathological examination in establishing the definitive diagnosis [4]-[8]. Typical microscopic features include spindle-shaped cells with wavy nuclei arranged in a collagenous or myxoid stroma. Immunohistochemical staining for S-100 protein may support neural differentiation, although positivity may be variable [4]-[8] [11].

Our literature review identified eleven previously reported cases included in the present review. Most patients were women, and the reported age range was 24 to 56 years [4]-[14]. The present case is notable because the patient was 82 years old, making her older than the patients described in the reviewed literature [9]. Reported lesions varied in size and clinical appearance, and some were non-encapsulated [4]-[8]. Therefore, surgeons should carefully evaluate surgical margins, particularly in lesions without a clear capsule [4]-[8].

Complete surgical excision is considered the treatment of choice [4]-[14]. In the cases reviewed, recurrence was not reported after excision. Similarly, our patient remained free of recurrence after two years of follow-up [9] [12]. Although solitary neurofibromas generally have a favorable prognosis, regular long-term follow-up is recommended, particularly to detect recurrence and to monitor for possible malignant transformation [1] [4]-[14].

4. Conclusions

Solitary non-syndromic neurofibromas of the hard palate are rare but benign peripheral nerve sheath tumors that may clinically resemble salivary gland tumors or other mesenchymal lesions [1] [2] [6]. Histopathological examination, particularly with immunohistochemistry for S-100, is essential for accurate diagnosis [4]-[8] [11]. Complete surgical excision is the treatment of choice, and the prognosis is excellent, with a low risk of recurrence [4]-[14]. However, long-term follow-up is recommended to monitor for potential recurrence or malignant transformation [1] [4]-[14].

Dentists and oral health professionals play a key role in the early detection, diagnosis, and management of such rare tumors, especially given the potential for misdiagnosis [12].

Conflicts of Interest

The authors declare no conflicts of interest.

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