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Approach to benign tumors of the palate: Analysis of 28 cases

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Abstract

We conducted a retrospective analysis of 28 patients—15 men and 13 women, aged 17 to 71 years (mean: 41.6)—who had undergone surgery for the treatment of a benign tumor of the hard or soft palate. The most common chief complaint was a palatal mass, which was reported by 14 patients (50.0%). Tumors were more common in the hard palate than in the soft palate by a margin of 23 to 5 (82.1 to 17.9%; p = *0.001). The most common histopathologic diagnosis was pleomorphic adenoma, which occurred in 9 cases (32.1%). Most patients were treated with local excision with clear margins, which was sufficient in almost all cases, as there were only 2 recurrences, both of which occurred in men with a hard-palate pleomorphic adenoma. For these 2 patients, a wider excision and repair with palatal islet flaps was performed, and no further recurrence or malignant transformation was observed during follow-up. Two patients with a soft-palate hemangioma were treated with an intralesional steroid injection and radiofrequency ablation, which reduced the size of their lesion considerably.*

Introduction

The palate is prone to irritation by multiple factors. In daily practice, palatal lesions are diagnosed not only by otolaryngologists, but by plastic surgeons and oral surgeons, as well.[1]

Palatal tumors exhibit some distinctive features:

- They may grow quickly, so repair after surgical intervention may be challenging in cases of advanced lesions.
- The appearance of benign and malignant lesions is sometimes quite similar, and as a result, appropriate diagnostic and therapeutic steps are not always taken.
- Recurrences are not uncommon.

Most of the published information on palatal tumors in the literature consists of either case reports or series in which palatal tumors were included along with minor salivary gland tumors and other oral cavity tumors.[1-3] To the best of our knowledge, recent studies focusing directly on palatal tumors are scarce in the literature.[3]

We believe that a better understanding of the features of benign palatal tumors may contribute to better diagnosis and treatment planning. To that end, we conducted an analysis of data gathered retrospectively from cases of benign palatal tumor that were treated at our tertiary care center during a 10-year period. We review the demographic, clinical, and histopathologic features of these cases and discuss the available diagnostic and therapeutic modalities. We also review the literature.

Patients and methods

Our study population was made up of 28 patients—15 men and 13 women, aged 17 to 71 years (mean: 41.6 ± 14.3)—who had been diagnosed with a palatal tumor in the Department of Otorhinolaryngology or the Department of Plastic and Reconstructive Surgery at the Karadeniz Technical University School of Medicine Farabi Hospital from April 1998 through March 2008. In addition to demographic data, we compiled information on the specific location of each lesion (i.e., the hard palate or the soft palate), presenting signs and symptoms, treatment, histopathologic diagnosis, and recurrence. These data were analyzed with the Statistical Package for the Social Sciences software (v. 11.5; SPSS; Chicago). Cross-tab and chi-square calculations were used to compare the incidence of hard- and soft-palate tumors and to determine if there was any difference in

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location between the sexes. A nonparametric test (Mann-Whitney *U* test) was performed to assess any differences between groups in terms of age, chief complaint, and histopathologic diagnosis.

When surgical treatment was indicated, it entailed a complete excision of the mass with clear margins of 0.5 cm for primary cases. In cases of primary pleomorphic adenoma of the hard palate, we drilled the underlying bone superficially to deal with the possibility of periosteal involvement, and we left the space for secondary healing. In cases of recurrence, the clear margins were extended to 1 cm, and drilling down the underlying bone was performed. Surgical defects were closed with palatal island flaps as described by Genden et al.[4]

Hemangiomas of the soft palate were treated with intralesional steroid injections and radiofrequency ablation. Triamcinolone at 20 mg was administered 3 times at intervals of 6 weeks.[5] Radiofrequency ablation was performed with local anesthesia (2 to 3 ml of 1% lidocaine without epinephrine). The ablation was performed with a Gyrus ENT device (Gyrus Medical; Cardiff, Wales). The amount of energy delivered was 500 J at 75°C and 15 W at each of three different locations.

Results

A summary of findings is shown in the table.

Tumor location. A total of 23 patients (82.1%) had a hard-palate tumor, and 5 (17.9%) had a soft-palate tumor—a statistically significant difference ($p = 0.001$).

The age of the patients with a hard-palate tumor ranged from 23 to 71 years (mean: 43.9 ± 13.2), and the range for the patients with a soft-palate mass ranged from 17 to 55 years (mean: 31.0 ± 16.1). The difference in location according to age was not statistically significant ($p = 0.067$).

Men and women accounted for 11 and 12 hard-palate tumors, respectively, and 4 and 1 soft-palate tumors. Again, there was no significant difference between the sexes in terms of tumor location ($p = 0.333$).

Chief complaint. The clinical presentation of hard- and soft-palate tumors was quite different. The chief complaints of the patients with a hard-palate tumor were a mass sensation (n = 14 [50.0%]), difficulty chewing (n = 5 [17.9%]), and oral-cavity bleeding (n = 4 [14.3%]), while the patients with a soft-palate tumor reported a sensation of a lump in the throat (n = 3 [10.7%]), snoring (n = 1 [3.6%]), and dysphagia (n = 1). The difference in

Table. Selected characteristics of 28 cases of benign palatal tumor

Variable	n (%)	Variable	n (%)
Sex		Treatment	
Male	15 (53.6)	Surgery	26 (92.9)
Female	13 (46.4)	Steroid and ablation†	(7.1)
Tumor location		Histopathologic diagnosis	
Hard palate	23 (82.1)	Pleomorphic adenoma*	9 (32.1)
Soft palate	5 (17.9)	Pyogenic granuloma*	5 (17.9)
		Hemangioma‡	4 (14.3)
Chief complaint		Papilloma§	4 (14.3)
Palatal mass*	14 (50.0)	Median palatine cyst*	2 (7.1)
Difficulty chewing*	5 (17.9)	Leiomyoma*	1 (3.6)
Bleeding*	4 (14.3)	Desmoplastic fibroma*	1 (3.6)
Throat lump†	3 (10.7)	Osteoma*	1 (3.6)
Snoring†	1 (3.6)	Myoepithelioma*	1 (3.6)
Dysphagia†	1 (3.6)		
		Recurrence	
		Yes*	2 (7.1)
		No	26 (92.9)

** All patients had a hard-palate tumor.*
† All patients had a soft-palate tumor.
‡ Two patients had a hard-palate tumor and 2 had a soft-palate tumor.
§ One patient had a hard-palate tumor and 3 had a soft-palate tumor.

signs and symptoms between the patients with a hard- and soft-palate tumor was statistically significant ($p < 0.001$).

Treatment. Complete excision, as described earlier, was the treatment of choice for 26 patients (92.9%). The remaining 2 patients (7.1%), both of whom had a soft-palate hemangioma, were treated with intralesional steroid injections and radiofrequency ablation as previously described. Steroid and ablation resulted in a reduction of tumor volume of about 50% after a mean follow-up of 9.5 months.

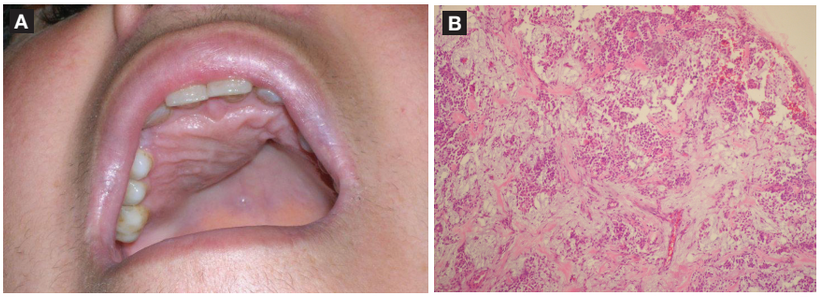


Figure 1. ***A:*** *At presentation, this patient exhibits a pleomorphic adenoma of the hard palate.* ***B:*** *Histopathology shows atypical pleomorphic epithelial cells forming clusters and tubular structures (H&E, original magnification ×10).*

Histopathologic diagnosis. The most common histopathologic diagnoses were pleomorphic adenoma (n = 9 [32.1%]) (figure 1), pyogenic granuloma (n = 5 [17.9%]), hemangioma (n = 4 [14.3%]) (figure 2), and papilloma (n = 4). Other diagnoses included 2 cases (7.1%) of median palatine cyst and 1 case each (3.6%) of leiomyoma, desmoplastic fibroma (figure 3), osteoma, and myoepithelioma. The 5 soft-palate tumors included 3 papillomas and 2 hemangiomas. The difference in histopathologic diagnoses between patients with hard- and soft-palate tumors was not statistically significant ($p = 0.098$).

Three cases of pyogenic granuloma and 1 case of hemangioma resulted in oral-cavity bleeding.

Recurrence. Only 2 patients (7.1%)—both men who had a pleomorphic adenoma of the hard palate—experienced a recurrence. Both underwent revision surgery as described earlier, and neither had experienced another recurrence or malignant transformation at the most recent follow-up.

Discussion

The clinical presentation of patients with a palatal tumor is generally consistent with symptoms related to the lesion's mass effect. The most common complaint in patients with a hard-palate neoplasm is a mass sensation in the oral cavity. Chewing difficulty and intermittent bleeding may be reported, as well. A hemangioma or pyogenic granuloma should be considered in any patient with a history of bleeding from the oral cavity.

The clinical presentation of soft-palate neoplasms can be quite different from that of hard-palate lesions. In our study, the patients with a soft-palate tumor reported a sensation of a lump in the throat, snoring, or dysphagia. The differential diagnosis of a palatal tumor should include abscess, adenomatous hyperplasia, necrotizing sialometaplasia, and paranasal sinus tumors.

Any periosteal, bone, or paranasal sinus involvement will modify the treatment approach. In patients with a hard-palate mass, fine-needle aspiration biopsy should be performed, and computed tomography must be obtained prior to obtaining an excisional biopsy. In the vast majority of benign lesions of the soft palate, complete excision is sufficient. For patients with a soft-palate hemangioma, preoperative magnetic resonance imaging with angiography can be useful in assessing the vascular supply and the extent of soft-tissue involvement. Embolization can be attempted during angiography.

In our study, complete resection with a cuff of normal tissue around the tumor was usually sufficient. However, for the 2 patients with a soft-palate hemangioma, we preferred intralesional steroid injections and radiofrequency ablation to obviate the risk of hemorrhage and to avoid a possibly difficult repair after resection.[5,6] Radiofrequency ablation's mechanism of action on hemangiomas possibly occurs as a result of thrombo-

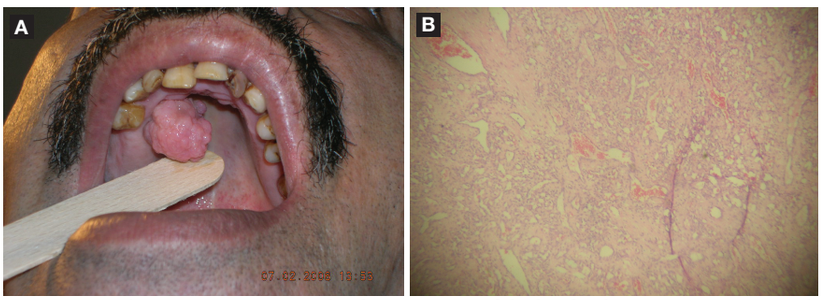


Figure 2. ***A:*** *This patient presents with a hemangioma of the hard palate.* ***B:*** *Immature vessels are lined with epithelioid endothelial cells (H&E, original magnification ×100).*

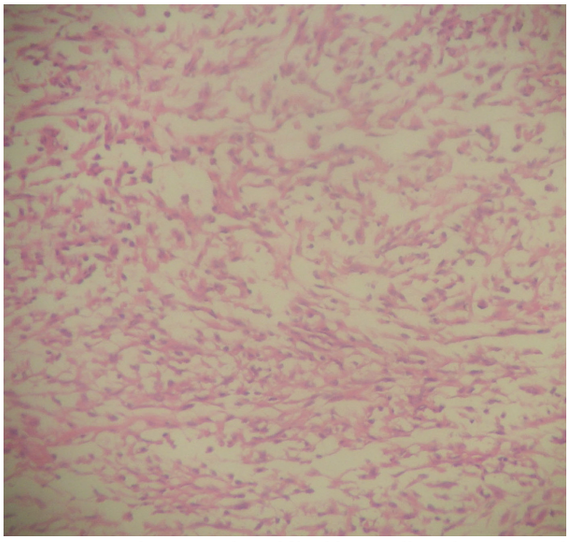


Figure 3. A moderate number of fibroblastic cells within a myxoid collagenous matrix is seen in this case of desmoplastic fibroma of the hard palate (H&E, original magnification ×40).

genesis induced by damage to the endothelial lining. Radiofrequency is already commonly used for ablating hemangiomas of the liver.[7] We believe that intralesional steroid injections and radiofrequency ablation are a safe and practical alternative to surgery in the management of soft-palate hemangiomas.

If the surgeon suspects that periosteum or bone is involved in a case of pleomorphic adenoma of the hard palate, removal with a drill is suggested to lower the risk of recurrence.[8] In our 9 cases of primary pleomorphic adenoma, we drilled the underlying bone superficially in view of the possibility of periosteal involvement, and we left the space for secondary healing. The surgical defect can be closed with a pedicled rotational flap from the opposite side of the hard palate.

Palatal pleomorphic adenomas have a potential for recurrence because they are poorly encapsulated. When they do recur, revision surgery may pose a challenge in terms of functional and cosmetic outcomes. Wide local excision should extend at least 1 cm beyond the margin of the recurrent tumor and, again, drilling down the bone should be performed. In the 2 patients in our study who underwent revision surgery for a recurrent pleomorphic adenoma, the surgical defect was repaired with full-thickness contralateral palatal flaps.

In the literature, the rate of malignant transformation in cases of pleomorphic adenoma has been reported to be as high as 25%, so close follow-up is necessary for these patients.[8]

In conclusion, because palatal neoplasms are not very rare, the palate should be carefully examined during routine inspection of the oral cavity. Pleomorphic adenoma is by far the most common benign tumor of the palate, and affected patients must be closely followed up because of the possibility of recurrence and malignant transformation. For the management of an overwhelming majority of benign palatal tumors, complete excision with clear margins is sufficient. For advanced lesions and recurrent neoplasms, a larger excision and a repair with local flaps may be necessary. For the management of soft-palate hemangiomas, we prefer intralesional steroid injections and radiofrequency ablation. Careful observation based on an understanding of the clinical features of benign tumors of the palate is imperative for a correct diagnosis, appropriate treatment, and prevention of local recurrences.

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