CASE REPORT

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Unique benign soft tissue tumor suspected pyogenic granuloma in a young female hard palate: a case report

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ABSTRACT

Objectives: This case aims to report the finding of a unique lesion in the maxilla in a young female patient.

Case Report: The patient, a 21-year-old female, presented with a painless swelling on the left palate for the past 3 months, causing discomfort during eating. On intra-oral examination, there was visible swelling in the left hard palate area, extending from teeth 23 to 26 and extending to the middle of the palate. The patient was referred for a CBCT examination. The aim of writing this article is to assess the findings of a unique case of benign tumor of the palate. The results of the CBCT examination showed radiolucent lesions in the palatal mucosal area without bone resorption. The density of the lesion was higher than that of the surrounding mucosa. The lesion does not damage the tissue of the surrounding area. This is unique because swelling of this size is usually accompanied by extensive bone resorption. Based on its nature, this lesion was diagnosed as a benign soft tissue tumor with differential diagnoses of pyogenic granuloma, pleomorphic adenoma, leiomyoma, and desmoplastic fibroma.

Conclusion: The lesion found was a soft tissue tumor lesion at the time; it was found to have a non-aggressive and non-expansive nature, making it difficult to determine a specific radiodiagnosis. The differential diagnosis of this case has been established as follows: Pleomorphic adenoma, pyogenic granuloma and leiomyoma, and pyogenic granuloma, were the options for establishing a provisional radiodiagnosis.

Keywords: *CBCT, pleomorphic adenoma, pyogenic granuloma, leiomyoma, desmoplastic fibroma*
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INTRODUCTION

The palatal area is quite susceptible to irritation, infection, and other pathological conditions. Lesions on the palate are often not realized by the sufferer and are only realized when they are felt to be disturbing, such as causing pain or disturbing chewing. Often, the lesions are associated with salivary gland lesions.[3,4]

Tumor lesions on the hard palate, are lesions that contribute to the oral cavity, with a high prevalence. The hard palate of the oral cavity is located on the anterior 2/3 of the palate and is bordered by the nasal floor superiorly. The hard palate is formed by the palatine process of the maxilla and the horizontal plates of the palatine bones, covered by a mucous membrane, and hundreds of minor salivary glands. Minor salivary glands in the oral cavity, among others, are located on the labial, buccal, molar, lingual, and palatine mucosa. Therefore, in addition to soft gland tumors, tumor lesions in the palate are often tumor lesions originating from the salivary glands. [5] In addition to saliva gland tumors, other types of tumors that often occur in the hard palate include pyogenic granuloma, leiomyoma and desmoplastic fibroma.

Lobular capillary hemangioma, or pyogenic granuloma (PG), is a benign vascular neoplasm.[6] PG originates from inflammatory hyperplasia of the skin or mucosa. PG histologically shows no signs of inflammation and consists of native granulomatous tissue. Chronic local irritants, hormones, and drugs are some of the stimuli that can cause PG growth. PG is very common in the oral cavity, and unfavorable OH is considered to be the main cause. These lesions are more common in women, hypothesized to be transient due to the effects of sex hormones. The highest incidence occurs in the second and fifth decades. PG often appears on the tongue, hard palate, lips, buccal mucosa, and floor of the mouth. The lesions are usually manifested as pink, swollen soft tissue ranging from a few millimeters to several centimeters in size. The mass can be stalked or attached to the mucosal base without causing pain.[7]

Desmoplastic fibroma (DF) is an aggressive benign tumor. DF is locally derived from fibroblastic tissue or aggressive soft tissue fibromatosis. Clinically, DF has a high rate of recurrence, and in some cases, DF in the jaws is often called tuberous

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sclerosis. DF is most common in patients under 30 years of age, with the highest predilection for the mandible, femur, hip, radius, and tibia. DF in the jaws is more common, 86% in the mandible and 14% in the maxilla, with a predilection for women of 56%. [8]

Leiomyomas are benign smooth muscle tumors that can appear anywhere, although they are more common in the uterus, digestive tract, and skin. This condition is often seen in adults and is not gender specific. Cases in the oral cavity may be around 0.065%, with a greater probability in the lips, tongue, hard palate, soft palate, and cheeks. Leiomyoma lesions are usually purplish, slow growing, and painless. PA results are the only way to determine the type of this disease.[9]

Pleomorphic adenoma (PA) is a mixed benign tumor consisting of epithelium and myoepithelial. Cells are bounded by a capsule of surrounding fibrous tissue and have various morphological patterns. PA is a salivary gland tumor that can occur in both major and minor salivary glands [10,11]. In the case of PA, both major and minor salivary glands are responsible for 40 to 70 percent of all PA tumors found in the oral cavity. The salivary glands most commonly affected are the parotid glands, with the palate being the most common site predilection [12].

This case report was prepared with the aim of reporting the findings of a patient with a lesion with suspected tumor, located on the hard palate that occurs in a young female. This case is quite simple but a little unique because radiographically and clinically it is very difficult to determine the diagnosis of this case. There are several differential diagnoses that can be established, and for this it is necessary to study several differential diagnoses that are sufficient for this case.

CASE REPORT

A 21-year-old woman complained to the RSGM Universitas Padjadjaran that her left palate had swollen for three months. The patient only noticed a slight swelling at first, but it gradually increased over three months. Although the patient did not report any pain, it was quite upsetting when they were eating. The patient is unable to recall if there has ever been trauma in that region. On extraoral examination, everything looks very normal. On intra-oral examination, there was visible swelling in the left hard palate area extending from teeth 23 to 26 and extending to the middle of the palate, with clear boundaries, easily not lobulated, and bleeding when touched with pressure. The dentist who

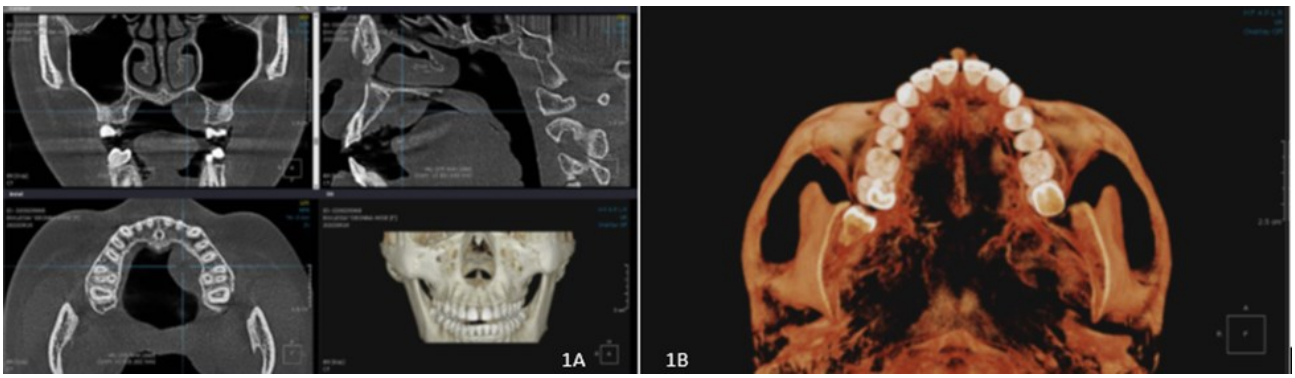

Figure 1. An overview of the MPR CBCT view, (A) showing a lesion on the soft tissue in the left palate and (B) there are no abnormalities in the palate bone[13]

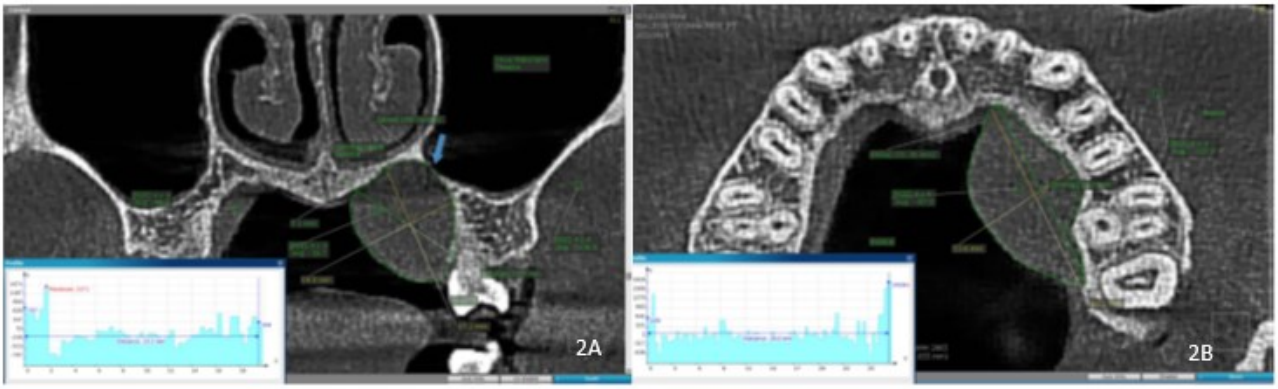

Figure 2. (A) Coronal CBCT section shows a visible lesion covering almost half of the palate, (B) Axial section in the hard tissue did not show any significant changes[13]

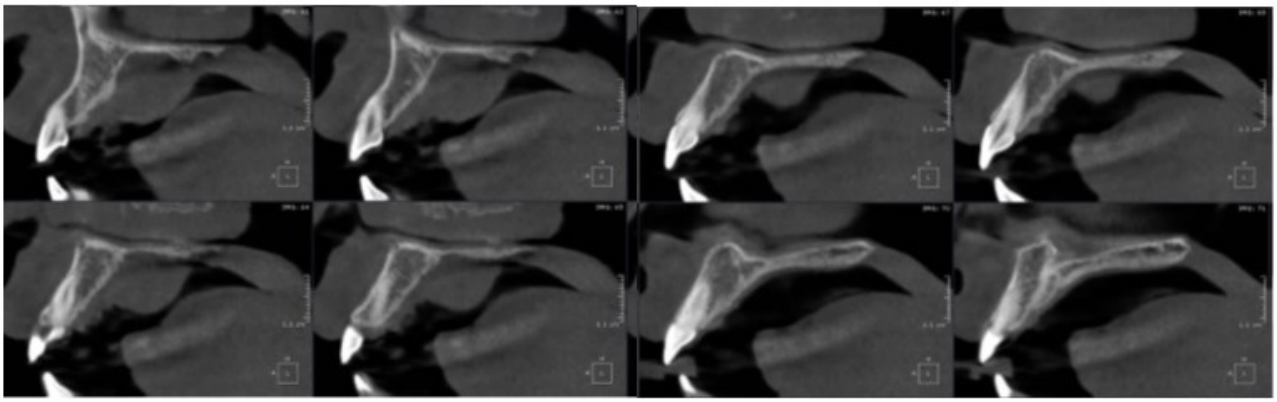

Figure 3. CBCT sagittal slicing of the lesion, it appears that the appearance of the lesion and the border of the lesion are in the posterior line with the surface area of the palate, so that it can be ascertained that the lesion has not extended to the outer areas of the palate[13]

previously treated the patient has referred him for CBCT.

The result CBCT radiographs, visible lesions appear radiolucent to intermediate, rounded, margins well defined we can see that the largest size of the lesion in the soft tissue tumor is visible from the sagittal direction, ± 271.22 mm2. Lesion density measurements using a 4x4 mm ROI averaged 39,7 grayscale values, that the density of the lesion is lower than the density of the mucosa on the contralateral side (right side). Seen from the coronal view the lesion appears pressing on the floor of the left maxillary sinus. Seen from the sagittal view the lesion compresses the palate so that approximately 1.2 mm remains near the nasal area. No hard tissue damage or displacement was seen.

DISCUSSION

The palate is an area separated by the oral cavity from the nasal cavity and anatomically the palate is divided into the hard palate and the soft palate. The palate is lined with epithelium derived from the squamous mucosa which contains the minor salivary glands. The soft palate is formed by squamous mucosa and muscle fibers, with less minor salivary glands than the hard palate. The most common type of tumor in the palate is squamous cell carcinoma, followed by salivary gland tumors, where these two tumors account for half of all cases of tumors in the palate. [14,15] Another half of cases are other types of tumors from the mesenchymal tumor class, such as fibroma, lipoma, schwannoma, neurofibroma, hemangioma and lymphangioma and others.[16] In this case, the lesion has a radiolucent radio intermediate appearance with well-defined margins and occurs in women under 30 years of age. Based on the benign and malignant characteristics in Table 1, it can be concluded that the lesion that occurred in this case was a benign tumor lesion. This is in accordance with what was written in the case by Ahmed Ural et al., who described 28 types of lesions that often occur in the palate, as well as Hiriki Kato et al., who described tumor lesions that often occur in the palate.[1,2]

In this case the lesion occurred in a young woman and showed no damage to the maxillary hard tissue, only slight damage to the sinus floor. This indicates that the case lesion is a soft tissue lesion. In a study by Ahmed et al (2011), a survey study was conducted on 28 cases of palatal tumor lesions, obtained data on lesions that occurred on the palate in order from the most to the least:

Table 1. Characteristics of Benign and Malignant Lesions

CHARACTERISTICS	BENIGNA	MALIGNA
Growth pattern	Expansive	Destructive
Margin	Well-defined	Ill-defined
Location	Unilateral	Mostly bilateral
Age	More than 30 years	Under than 30 years
Growing	Fast-growing	Slow-growing

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Table 2. Characteristics of the lesion approaching the case

PLEOMORPHIC ADENOMA[20]	PYOGENIC GRANULOMA [6,21]	LEIOMYOMA[9]	DESMOPLASTIC FIBROMA[8]
• These lesions appear accompanied by pain, grow slowly, swollen firm, lesions on the palate accompanied by a smooth surface, shaped like a dome. It is bound and attached to the mucosa so that it is easy to move, rarely reaching a size of more than 2 cm. It usually affects all ages, but the incidence is most often > 60 years. • Radiographically: It usually appears as a well-defined rounded, "bosselated" or "polylobate" mass (many small, lobulated undulations).	• This lesion is due to an inflammatory reaction associated with • Fibrovascular proliferation of connective tissue due to trauma and infection. • The lesions are usually sessile, surface and smooth or lobulated, slow-moderate growing, occur at any age, with the most frequent incidence being women aged 2-5 decades. The hormones progesterone and estrogen affect the growth of the lesions, pregnant women and contraceptive users have the highest incidence. • Radiographically (CT): the lesion appears hyperdense compared to other soft tissues (hyper to hypo), well-define borders, sometimes causes erosion/resorption of some bones, but usually there is no bone involvement.	• Leiomyomas are benign smooth muscle tumors that can appear anywhere, most commonly in the uterus, and cases in the oral cavity are very rare. Occurs in adults, none • sex predilection. The most commonly affected oral sites are the lips, tongue, hard and soft palate, and cheeks. • The tumor generally manifests as a painless, slow growing, purplish lesion. The differential diagnosis is leiomyosarcoma. • Radiographically: a hypodense lesion is seen, with clear boundaries, no bone destruction effect.	• Desmoplastic fibroma (DF) is a benign tumor composed of fibrous tissue accompanied by collagen fibers. • 84% of Jaw DF patients are aged between 16-30 years. • Possible etiology of trauma, endocrine disorders, genetic disorders and idiopathic. • Type DF is a fibroma with predominant soft tissue involvement, benign, painless, without symptoms, if it is large it can expand the bone so that resorption and pathological fractures can occur. • Radiography: radiolucent lesions with non-sclerotic margins, ill-define, mostly multilocular, fast expanding, sometimes with a sunburst appearance.

pleomorphic adenoma 9 cases, pyogenic granuloma 5 cases, hemangioma group 4 cases, palatine cyst 4 cases, leiomyoma 3 cases, and the rest were desmoplastic fibroma, osteoma and papilloma each 1 case. We excluded cystic cases because they did not show cystic characteristics on the border clearly with a pure radiolucent structure.[18] Papilloma and osteoma types cannot be taken as one of the diagnoses, because osteoma is a radiopaque lesion radiographically, while papilloma is located in the interdental area of the papilla and stalk.

Lobular capillary hemangioma (LCH) lesion is a proliferative reaction that commonly occurs in soft tissues. This condition is a neoplastic vascular proliferation that can occur in the skin or mucosa (1). Clinically, these lesions usually appear as single nodules or sessile papules with smooth or lobulated surfaces ulcerated with bleeding, bluish to red in color. (2) This type of lesion often occurs in young adults where the female's male predilection is 2:1. LCH sometimes occurs in the palate, although the gingiva is the most common location.[19]

The characteristics of hemangioma are not suitable for the case, because the lesion in this case is rigid without granules, while hemangiomas tend to have a granular texture. LCH bleeds easily accompanied by ulcers, whereas in cases there were absolutely no complaints from the patient.

Based on the theories described above, there are 4 possible lesions that can be considered as

differential diagnoses for this case: pleomorphic adenoma, pyogenic granuloma, leiomyoma, and desmoplastic fibroma.[1,16,19] The following explanation can be seen in Table 2.

Based on the information from Table 2, it can be analyzed that the cases that occur are radiolucent lesions with moderate growth, well-define, slightly expanding bones, painless and slightly bleeding when touched, sufficient to be able to determine the most appropriate differential radiodiagnosis for the case. When compared with PA (Pleomorphic Adenoma), both lesions grow slowly, are benign, have well-define borders, but in cases the lesions have a size of more than 2 mm which is around 2.6 mm and the patient is <30 years old, whereas in PA most more than 60 years old.[3,5,16,20] In PG (Pyogenic Granuloma) lesions, the lesions are equally benign, grow slowly to medium, radiolucent to radio intermediate in structure, cause little bone resorption, mostly in young women (2-5 decades). Looking at these data, it can be seen that the lesions found are almost identical. Furthermore, with leiomyoma, the lesion in the case has a greater incidence in women, is slow growing, well-define and does not destruct bone, but the case is very rare in the jaw. Comparison of the lesion with DF looks like further, because DF has a characteristic lesion with ill-define, moderate to fast growing limits, from these characteristics it can be concluded, the case is not a DF tumor lesion. So that after analysis and consideration, the lesions that have the closest accuracy remain only three types of lesions, namely pleomorphic adenoma, pyogenic granuloma and leiomyoma. After determining the differential radiodiagnosis in the patient, the answer is sent to the referring doctor to take action and take biopsies for PA examination.[6,7,21]

CONCLUSION

In fact, the lesion discovered on this 21-year-old woman's distal hard palate is unusual and challenging to radiodiagnoses. The differential radiodiagnosis for this lesion is pleomorphic adenoma, pyogenic granuloma, and leiomyoma. According to the lesion's characteristics are equally benign, grow slowly to medium, radiolucent to radio intermediate in structure, cause little bone resorption, mostly in young women (2-5 decades) Pyogenic granuloma was the options for establishing a provisional radiodiagnosis. Radiography is a supporting examination for cases, including those in the oral cavity. Determining the right radiodiagnosis should be done, but in difficult circumstances, what can be done is only to determine the differential radiodiagnosis so that there is no mistake in describing the picture encountered. Follow-up histopathological examination will determine the correct diagnosis because it describes the entire contents of the lesion.

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FOOTNOTES

All authors have no potential conflict of interest to declare for this article. Informed consent was obtained from the patient for being included in this case report.

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