Case Report

pISSN, eISSN 0125-5614
M Dent J 2024; 44 (2) : 113-120

Fibroepithelial hyperplasia and fibrolipoma in a 4-year-old patient: a rare case report

Pannaros Torsakul, Praphasri Rirattanapong, Ruangkhao Phimonsri

Department of Pediatric Dentistry, Faculty of Dentistry, Mahidol University, Bangkok, Thailand

Fibroepithelial hyperplasia and fibrolipoma are uncommon benign oral lesions that are seldom reported in children. These lesions are typically asymptomatic and characterized by slow growth. This report discusses the rare occurrence of fibroepithelial hyperplasia and fibrolipoma in the oral cavity of a 4-year-old girl. The patient presented with a complaint of pain while consuming due to slow-growing masses in the gingiva extending from the mandibular left second primary molar to the retromolar, along with another painless slow-growing mass at the mandibular left primary canine. During the clinical examination, a smooth surface, non-tender and firm broad base localized pink fibrous nodules were observed at the buccal area from tooth 75 (mandibular left second primary molar) to the retromolar area, measuring approximately 20x10x4 millimeters in size and at the labial area of tooth 73 (mandibular left primary canine), measuring approximately 6x6x2 millimeters in size. The differential diagnoses for the clinical presentation in both areas included irritation fibroma, peripheral ossifying fibroma, pyogenic granuloma, peripheral giant cell granuloma, gingival fibromatosis as a manifestation of systemic disease, and other benign mesenchymal tumors. A surgical excision was performed, and histopathological analysis confirmed the definitive diagnosis of fibroepithelial hyperplasia and fibrolipoma. A recurrence of the lesions was observed during a follow-up period of 1 year and 4 months. This report emphasizes the importance of identifying these rare benign lesions in pediatric patients for accurate diagnosis and effective management. It also provides valuable insights into the management strategies and recurrence potential for such lesions in young patients, emphasizing the need for ongoing monitoring and intervention to ensure optimal patient outcomes.

Keywords: fibroepithelial hyperplasia, fibrolipoma, pediatric patient, primary teeth

How to cite: Torsakul P, Rirattanapong P, Phimonsri R. Fibroepithelial hyperplasia and fibrolipoma in a 4-year-old patient: a rare case report. M Dent J 2024;44(2): 113-120.

Introduction

The presence of a mass or enlargement in the oral cavity can be a significant source of worry for patients and their guardians, particularly when it involves pediatrics. This situation is very worrisome due to the possibility of a benign or malignant tumor, prompting patients to seek dental care. Fibroepithelial hyperplasia and fibrolipoma are notable among these benign lesions due to their distinct histological features and clinical manifestations [1, 2].

Fibroepithelial hyperplasia, also known as irritational fibroma, oral fibroma, or fibromatosis, describes a specific reaction of localized tissue. Other terms for this condition include localized fibrous hyperplasia, inflammatory fibrous hyperplasia, fibrous nodule, or fibroepithelial polyp [3]. It is the most prevalent type of fibrous overgrowth in the oral cavity and is categorized as a benign lesion [2, 4]. They can originate from either the gingival connective tissue or the periodontal ligament [2]. This lesion manifests as a firm, smooth, and often broad base, frequently observed on the gingiva, tongue, or buccal mucosa [2, 5].

Corresponding author: Pannaros Torsakul
Department of Pediatric Dentistry, Faculty of Dentistry, Mahidol University, Thailand
6 Yothi Road, Ratchathewi, Bangkok 10400, Thailand
Tel: +669 0984 0939 Email: pannaros.tor@gmail.com
Received: 21 June 2024 **Revised:** 22 July 2024 **Accepted:** 26 July 2024

Fibrolipoma is a rare, benign neoplasm composed of mature adipose tissue interspersed with fibrous connective tissue. It is the most commonly occurring histological subtype of lipoma [1, 6]. Typically presenting as a painless, slow-growing mass, fibrolipoma can occur in various locations within the oral cavity, such as the buccal mucosa, lips, and tongue [7].

Understanding the characteristics and management of these benign oral masses is crucial for dental practitioners and healthcare providers. To prevent complications such as pain or discomfort that may affect the patient's ability to eat, speak, and maintain oral hygiene, it is crucial to conduct an accurate diagnosis and provide the appropriate treatment for optimal patient outcomes [2].

The purpose of this case report is to offer insight into the clinical, histopathological characteristics, and management of fibroepithelial hyperplasia and fibrolipoma, which are uncommon in pediatric patients.

Case Report

A 4-year-old patient presented to the Pediatric Department at the Faculty of Dentistry, Mahidol University, complaining of gingival pain when eating and biting down. The patient has no known allergies or underlying medical issues, and the family has no systemic diseases, as reported by the parents. The extraoral examination is within normal range. The parents noticed a gradual development of lumps in the lower left region of the gums over about 1.5 years. The intraoral examination showed a localized pink smooth surface fibrous nodule with a broad base that was non-tender and firmly consistent, affecting the buccal area from tooth 75 (mandibular left second primary molar) to the retromolar area, measuring approximately 20x10x4 millimeters in size. The height of the nodule is approximately at the level of the occlusal surface (Figure 1). The patient experienced discomfort while biting down and consuming in this specific region. In addition, there was another pink fibrous nodule with a broad base, which was non-tender and firm in consistency, located in the labial area of tooth 73 (mandibular left primary canine), measuring approximately 6x6x2 millimeters in size. The height of the nodule was no more than one-third of the height of the tooth's crown (Figure 1). No pain was reported by the patient in this area.

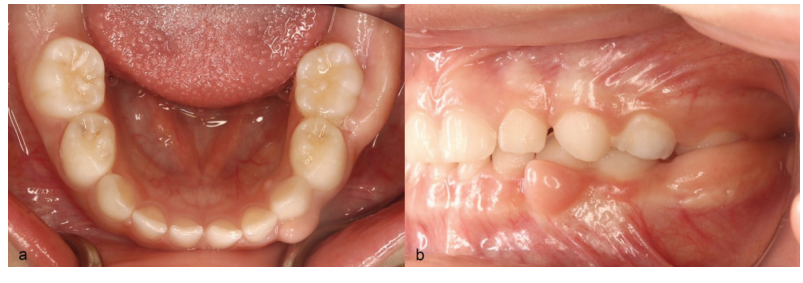

Figure 1 Intraoral examination revealed a localized pink fibrous nodule at the lower left primary canine and the lower left primary second molar extending to the retromolar area. a: occlusal view; b left lateral view

According to the patient's dental history, a nodular mass has been present at tooth 73 since she was 8 months old. Initially, it appeared as a tiny pinkish spot gradually growing and developing into a nodular mass. The initial diagnosis was suspected to be congenital epulis of a newborn, as the mother reported seeing a white to pinkish spot in that area since birth. At that time, the recommended approach was to monitor the mass in the 73 area since the patient did not exhibit any symptoms and did not impact the patient's overall well-being. If necessary, a surgical excision would be performed. Therefore, the patient's recall was regular, and the growth in the 73 area did not cause any discomfort or increase in size. However, due to the COVID-19 outbreak, she has missed dental checkups for more than a year. Subsequently, the pain from the mass around 75 area prompted her to revisit the dentist

The radiographic examination using the periapical and bitewing techniques revealed no signs of bone loss or associated bone lesions (Figure 2). The differential diagnoses for the clinical presentation in both areas included irritation fibroma, peripheral ossifying fibroma, pyogenic granuloma, peripheral giant cell granuloma, gingival fibromatosis as a manifestation of systemic disease, and other benign mesenchymal tumors.

The treatment plans were presented to the parents, and each option's potential risks, benefits, and costs were discussed. Surgical excision was recommended, which could be performed under either local anesthesia or general anesthesia. The parents opted to undergo treatment under general anesthesia and have all the necessary procedures performed in the oral cavity at the same time. In addition, the possibility of the lesion recurring was also informed to the parents.

Surgical excision was performed, and the patient is scheduled for regular follow-up to ensure complete recovery and monitor for recurrence. The histopathological examination showed that the mass from tooth 73 and tooth 75 areas was composed of dense collagenous fibrous connective tissue covered by hyperplastic parakeratinized stratified squamous epithelium. Several blood vessels and nerves have been identified. Furthermore, adipose tissue was observed in the specimen from tooth 73 area (Figures 3-4). The histopathological findings confirmed the definitive diagnosis of fibroepithelial hyperplasia at tooth 75 (Figure 3) area and fibrolipoma at tooth 73 area (Figure 4).

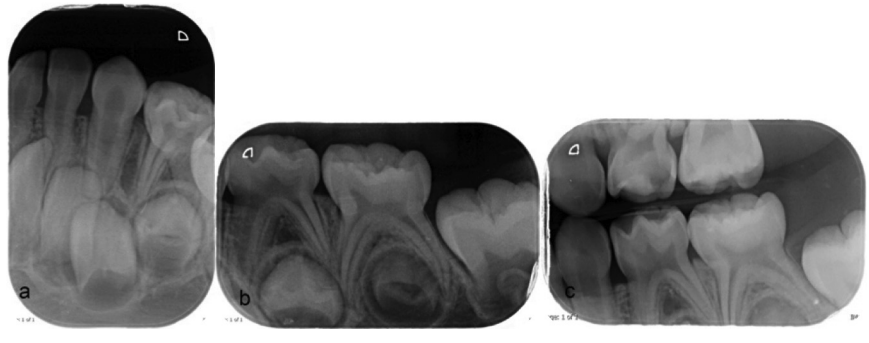

Figure 2 The periapical and bitewing radiographs showed no signs of bone loss or any bone lesions. a: periapical radiograph of tooth73; b: periapical radiograph of teeth74,75; c: bitewing radiograph of left posterior deciduous teeth

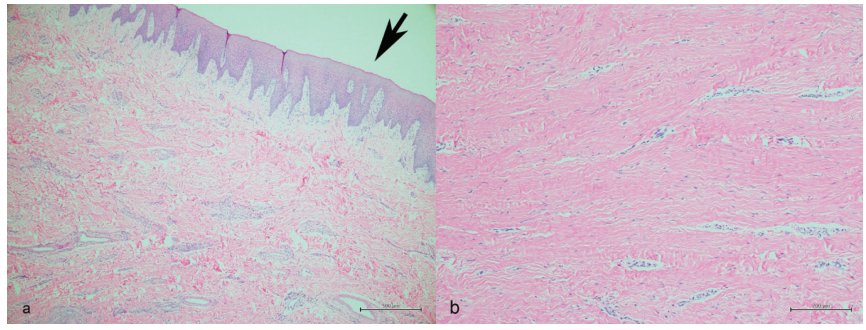

Figure 3 The pathology examination of fibroepithelial hyperplasia revealed the presence of hyperplastic parakeratinized stratified squamous epithelium (black arrow) covering fibrous connective tissue. (H&E a:500µm 40x; b:200µm 100x)

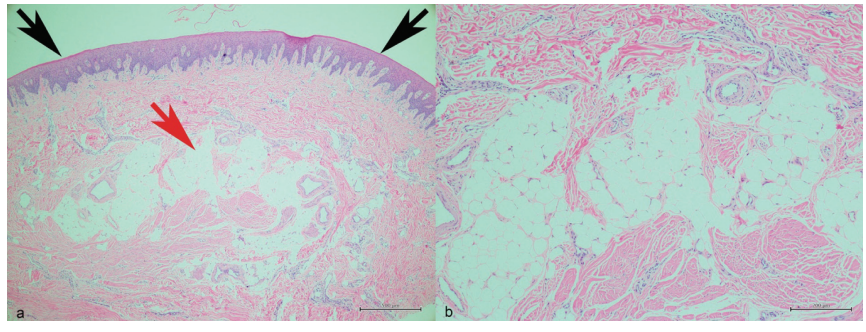

Figure 4 The pathology examination of fibrolipoma revealed the presence of hyperplastic parakeratinized stratified squamous epithelium (black arrow) covering fibrous connective tissue. Adipose cells were interspersed between the fibrous tissue. (red arrow) (H&E a: 500µm 40x; b:200µm 100x)

At the 6-month follow-up, there was no recurrence of the lesions and the gingiva in both areas had completely healed (Figure 5). After a 9-month and 1-year 4-month follow-up following the removal, the mass has recurred in the 36 area. It has gradually increased in size compared to post-treatment, but it does not affect the occlusion, and the patient has not reported any pain (Figure 5).

Discussion

Fibroepithelial hyperplasia is the most prevalent fibrous overgrowth in the oral cavity. It is classified as a benign tumor. It presents with an elevated pedunculated or sessile structure with a nodular shape. It has different colors, from light pink to red. The appearance might vary from a smooth, non-ulcerated surface to a mass of ulcers, and the size of the lesion might range from a few millimeters to several centimeters [2, 4, 5, 8, 9]. It is commonly observed in the gingiva, buccal mucosa, tongue, and lip. It can manifest in individuals of any age and gender. However, it is most commonly seen in adults [4, 10]. Although the precise cause is not yet known, numerous variables could potentially contribute to the mass. It may arise as a result of low-grade stimulation, such as trauma, dental plaque, or calculus, a defective restoration, or an ill-fitting oral appliance [10].

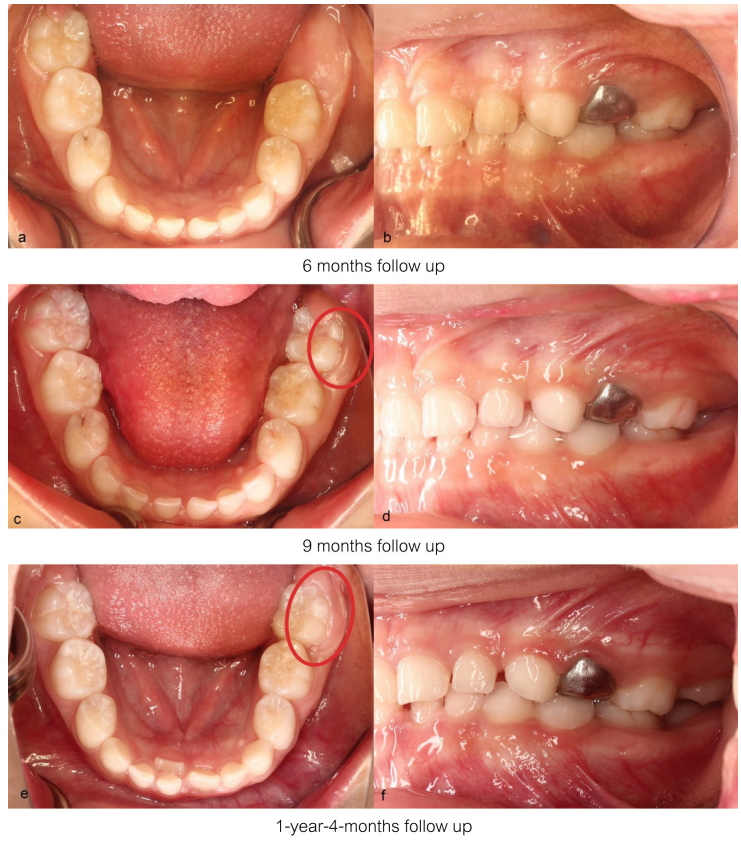

Figure 5 Intraoral examination conducted at 6 months following the surgical excision showed normal wound healing and absence of lesion recurrence (a: occlusal view; b: left lateral view). At 9 months and 1-year-4-months following the surgical excision, there was a recurrence of a lesion at 36 areas to the retromolar area location (c,e: occlusal view; d,f: left lateral view)

In our case, fibroepithelial hyperplasia presented with localized pink smooth surface fibrous nodule with a broad base that was non-tender and firmly consistent at buccal gingiva from tooth 75 to retro molar area with the size around 20x10x4 millimeters. The dimensions and location of this lesion align with the literature, except for the patient's age. This lesion is rare in children [2]. The parents of this patient stated that there had been no previous injuries. An intraoral examination showed no signs of plaque, calculus, defective restorations, or irritation from any intraoral device in the affected region. Therefore, the cause of fibroepithelial hyperplasia in this patient remains unidentified.

Fibroepithelial hyperplasia is typically asymptomatic unless it becomes traumatized [9]. In this particular case, the mass grew significantly, extending to the occlusal surface, and was bitten by the opposing tooth while eating. As the size of the mass increased, it not only created functional problems for the patient but also made it difficult to maintain good oral hygiene. Surgical removal of the mass was necessary to alleviate the patient's pain.

Fibrolipoma is a neoplasm that develops from adipose tissue and is considered a variant of lipoma. It consists of both fibrous and adipose tissues. They develop mostly in the subcutaneous tissues but could also develop in

deeper tissues [1, 6]. It constitutes 1% to 5% of all oral neoplasms [6]. Fibrolipoma typically presents without any symptoms. Patients frequently exhibit a painless, progressive enlargement that becomes noticeable, prompting them or their parents to look for medical or dental advice. They also exhibit a rounded morphology and possess a uniformly even surface [6, 7]. Generally, their dimensions are smaller than 2.0 cm [11].

Oral lipoma is a rare benign oral lesion, occurring with a probability of roughly 0.0002%. According to the literature review, half of it is located on the buccal mucosa, while the remaining half can be found on the tongue, the floor of the mouth, the lips, the palate, and the gingiva [8]. The cause of lipoma and fibrolipoma is uncertain. Genetics, lipid degeneration, trauma, hormonal factors, infection, and persistent irritation are among the proposed reasons [1, 6, 11]. While it can manifest at any age, it is predominantly identified in people between the ages of 40 and 60 with no sex predilection [8, 12]. The prognosis for fibrolipoma is typically favorable [8]. Fibrolipoma is histologically characterized by the presence of mature fat cells arranged in lobules, which are separated by fibrous septa [1].

In this case, a lesion developed on the buccal gingiva of tooth 73. From the age of 8 months onwards, the parents noticed a distinct mass of approximately 2 millimeters in size, which did not present any accompanying symptoms. The size and location of the fibrolipoma, in this case, align with the existing literature, although it is typically observed in adults [8]. However, our case involves a child, which is a rare occurrence. The parents confirmed that there was no record of any previous injuries in this same area. The etiology of this fibrolipoma in the patient remains difficult to determine.

To achieve a precise diagnosis, clinical examination and supplementary investigations, such as biopsies, which are followed by histological analysis, must be combined [2]. Surgical excision is the most common approach for treating fibroma and fibroepithelial fibroma, while laser or electrosurgery is also a viable therapy option [13]. Following surgical excision, gingival recession may occur, leading to esthetic concerns regarding the gingival area. Hence, the surgical procedure requires meticulous and attentive operation [8]. The histopathological findings of this case are consistent with the literature [2, 7]. We observed dense fibrous tissue and hyperplastic parakeratinized stratified squamous epithelium indicating fibroepithelial hyperplasia for tooh 75 area. For tooth 73 area, we identified fibrolipoma, as characterized by the presence of mature adipose tissue within the fibrous stroma. These findings supported and confirmed the respective diagnoses.

Regarding the recurrence rate, fibrolipoma and fibroepithelial hyperplasia exhibit a low recurrence rate [2, 6, 7, 9]. However, for fibroepithelial hyperplasia, if the lesion is the result of trauma, it is important to eliminate the trauma to prevent recurrence [5]. We had previously informed the parents that there was a possibility of recurrence, even if the mass had been completely removed.

In this patient, surgical excision was performed under general anesthesia, and the lesion was entirely removed. Subsequently, the patient was scheduled for a follow-up session in one week to ensure optimal healing of her gingiva. Additionally, there were regular recalls. The patient experienced normal healing following the treatment and did not encounter any problems related to the appearance or receding of the gingiva.

After 9 months and 1-year-4-months of regular follow-ups, the dentist observed that the gingiva tissue in the region of tooth 36 (mandibular left permanent first molar) was exhibiting abnormal growth. This growth was more substantial than

what had been observed immediately after the initial surgical removal. The gingiva in this area displayed a pink color and firm consistency, and the growth was specifically limited to the attached gingiva. Importantly, the patient did not experience any pain or discomfort at that time.

Given the previous discussions about the possibility of recurrence, the parents were not overly concerned. We also conducted a thorough discussion with an oral medicine and we reached a conclusion that there was no immediate need for surgical removal of the mass in the 36 area, as it was not causing any discomfort to the patient. Regular follow-up appointments are essential for monitoring the growth of the mass that might suggest malignant transformation and ensuring timely intervention if necessary. Additionally, maintaining proper oral hygiene is crucial to prevent inflammation or other complications.

Accurately diagnosing the oral lesion can be challenging when its clinical manifestations are similar. Performing a biopsy is essential for analyzing the histopathology with the pathologist and achieving a precise diagnosis. Moreover, it is necessary to continuously monitor the outcome of the treatment to ensure its effectiveness and prevent any potential development of malignancy, regardless the patient's denial of any systemic disease.

Conclusion

Diagnosing and treating oral lesions in children can be challenging, as illustrated by this case. A correct diagnosis based on clinical and histological examinations is essential. Furthermore, routine monitoring is imperative and informing parents of the potential for a recurrence is a highly important issue.

Acknowledgment

We expressed our gratitude to Dr. Theerachai Kosanwat, an oral pathologist, for his essential contribution to the histopathological examination of this case.

Funding resources

None

References

1. Devi AN, Sowbhagya MB, Balaji P, Kumar TS. An uncommon case of fibrolipoma. ***Indian J Dent Res.*** 2017 Nov-Dec;28(6):699-701. doi:10.4103/ijdr.IJDR_718_16.
2. Niranjan B, Shashikiran ND, Dubey A, Singla S, Shukla C, Mali S. A rare gingival lesion in children: fibroepithelial hyperplasia. ***Int J Clin Pediatr Dent.*** 2022 Jul-Aug;15(4):468-471. doi:10.5005/jp-journals-10005-2412.
3. Jain M, Singh AV, Leekha S, Prashar S. Fibroepithelial hyperplasia: a case report. ***Int Healthcare Res J.*** 2017 Sep;1(6):16-19. doi:10.26440/IHRJ/01_06/110.
4. Sachdeva S, Saluja H, Mani A, Patil R, Mani S, Mohammadi SN. Fibroepithelial hyperplasia. ***Pravara Med Rev.*** 2019 Jan;11(2):50-52.
5. Mishra A, Pandey RK. Fibro-epithelial polyps in children: a report of two cases with a literature review. ***Intractable Rare Dis Res.*** 2016 May;5(2):129-132. doi:10.5582/irdr.2016.01015.
6. Ramos TdCF, Alves LDB, Moura JR, Freitas VS. Fibrolipoma in the mouth. ***Rev Odont Mex.*** 2018 June;22(2):95-99.
7. Tandon A, Srivastava A, Jaiswal R, Gaur A. Oral fibrolipoma: a rare clinicopathological entity. ***J Oral Maxillofac Pathol.*** 2023 Jul-Sep;27(3):537-539. doi:10.4103/jomfp.jomfp_105_23.
8. Rezazadeh F, Jaafari-Ashkavandi Z, Afshari A, Tarjan A. Rare fibrolipoma of attached gingiva: a case report and review of the literature. ***Clin Case Rep.*** 2022 Nov;10(11):e6643. doi:10.1002/ccr3.6643.

9. Prasanna J, Sehrawat S. Fibroepithelial hyperplasia: rare, selflimiting condition-two case reports. J ***Adv Oral Res.*** 2011 Oct;3(3):63-70. doi:10.1177/2229411220110311.
10. Sanadi RM, Puppalwar N, Gurav N, Jain P, Khandekar P. Fibroepithelial hyperplasia of gingiva: a report of two cases. ***Med Res Chronicles.*** 2021 May-June;8(3): 252-256. doi:10.26838/MEDRECH.2021.8.3.526.
11. Zouaghi H, Chokri A, Bouguezzi A, Abdeljelil NB, Sioud S, Hentati H, *et al*. Oral fibrolipoma. A***utops Case Rep.*** 2023 May;13:e2023431. doi:10.4322/acr.2023.431.
12. Khubchandani M, Thosar NR, Bahadure RN, Baliga MS, Gaikwad RN. Fibrolipoma of buccal mucosa. ***Contemp Clin Dent.*** 2012 Apr;3(Suppl 1):S112-114. doi:10.4103/0976-237x.95119.
13. Diwan B, Shirbhate U, Bajaj P, Reche A, Pahade A. Conventional scalpel and diode laser approach for the management of traumatic fibroma. ***Cureus.*** 2023 Oct;15(10):e47810. doi:10.7759/cureus.47810.