DOI: https://doi.org/10.54617/adoklinikbilimler.1527871

Case Report

Diagnosis and Dental Treatment Management in a Case of Late Latent Syphilis: A Case Report

Geç Latent Sifilis Olgusunda Teşhis ve Dental Tedavi Yönetimi: Bir Olgu Sunumu

Ecem Elif Çege[1], Mehmet Bani[2]

ABSTRACT

Introduction: Syphilis is a systemic disease, typically transmitted sexually and diagnosed via serological tests. Clinical findings within dental health include notched incisors, often referred to as Hutchinson incisors, and what are described as mulberry-shaped molars or Mulberry molars. Syphilis progresses through four phases: primary, secondary, latent, and tertiary, and it can be treated.

Case Report: An 11-year-old male patient presented to the clinic with a toothache. Clinical and radiographic examinations revealed incompletely erupted permanent molars, notched appearance incisors, and canines lacking a normal tubercle structure and enamel tissue. Serological testing led to the diagnosis of late latent syphilis in the patient and his family. Consequently, treatment with benzathine penicillin G commenced. Dental treatment encompassed oral hygiene training, extraction of molars with severe material loss, and restoration with anterior strip crowns. This case report outlines the process of diagnosing late latent syphilis and the dental treatment of a boy whose oral findings suggested a pre-diagnosis of syphilis.

Conclusion: Dentists must accurately diagnose the oral manifestations of systemic diseases like syphilis. Early diagnosis and treatment can halt the disease's progression and prevent its spread.

Keywords: Hutchinson incisor; Mulberry molar; Syphilis

ÖZET

Giriş: Sifilis genellikle cinsel yolla bulaş gösteren sistemik bir hastalıktır. Teşhis, genellikle serolojik testlerle yapılır. Konjenital sifilisin ağız içi klinik bulgularından birisi çentikli görünüme sahip kesici dişler (Hutchinson keser) iken bir diğeri dut şeklinde azı dişleridir (Mulberry molar). Sifilis; primer, sekonder, latent ve tersiyer sifilis olmak üzere başlıca dört döneme ayrılan ve tedavi edilebilir bir hastalıktır.

Vaka Raporu: On bir yaşında erkek hasta diş ağrısı şikayetiyle kliniğe başvurmuştur. Klinik ve radyografik muayenede, normal tüberkül yapısı ve mine dokusu olmayan, tam sürememiş daimi molar dişler ile çentikli kesici ve kanin dişler tespit edilmiştir. Yapılan serolojik testler sonucunda hastaya ve ailesine geç latent sifilis teşhisi konulmuş ve Benzathine Penisilin G tedavisi başlanmıştır. Dental tedaviler arasında ağız hijyeni eğitimi, aşırı madde kaybı olan molar dişlerin çekimi ve anterior strip kronlarla yapılan restorasyonlar yer almıştır. Bu olgu sunumunda, oral bulguları sifilis ön tanısını düşündüren erkek çocuğun geç latent sifilis teşhisi konulma süreci ve dental tedavileri anlatılmaktadır.

Sonuç: Diş hekimlerinin sifilis gibi sistemik hastalıkların ağız içi bulgularını teşhis edebilmesi son derece önemlidir. Bu sayede, erken tanı ve tedavi sonucunda hastalığın ilerlemesi ve yayılması önlenmiş olmaktadır.

Anahtar Kelimeler: Mulberry molar; Hutchinson keser; Sifilis

Makale gönderiliş tarihi: 05.08.2024; Yayına kabul tarihi: 03.03.2025
İletişim: Dr. Ecem Elif Çege
Gazi University Faculty of Dentistry Emek Mah, Bişkek Cd. 1. Sokak D:No:4, 06490 Çankaya/Ankara, Türkiye
E-mail: ecemelif.ec@gmail.com
[1] Research Assistant, Department of Pediatric Dentistry, Faculty of Dentistry, Gazi University, Ankara, Türkiye
[2] Prof., Department of Pediatric Dentistry, Faculty of Dentistry, Gazi University, Ankara, Türkiye

INTRODUCTION

Syphilis is an infectious disease caused by the anaerobic, filamentous spirochete Treponema pallidum. If syphilis is not diagnosed early and treated appropriately, it progresses through various clinical stages.[1] The disease is divided into four main phases: primary, secondary, latent, and tertiary syphilis. Diagnosis of syphilis typically involves serological tests.[2]

Congenital syphilis is an infectious disease caused by Treponema pallidum, which is transmitted from an untreated infected mother to her baby during pregnancy. Most children who are not treated within the first 6 to 12 months of life progress to latent and tertiary syphilis. Symptoms of late-stage syphilis can cause damage to bones, teeth, eyes, ears, and the brain.[3]

Manifestations of congenital syphilis include the Hutchinson triad, which is characterized by interstitial keratitis, eighth nerve deafness, and Hutchinson teeth.[4] One of the clinical findings in the teeth is the notched appearance of incisors, known as Hutchinson incisors, while another finding is referred to as mulberry molars. Numerous rounded enamel ridges on the molars characterize mulberry molars. Usually, no treatment is required, but topical fluoride application and routine monitoring are recommended. In severe cases, a crown or extraction may be necessary.[5]

Penicillin G is utilized in the treatment of syphilis. For early latent syphilis, Benzathine penicillin G (2.4 million units, administered intramuscularly as a single dose) is used. For late latent syphilis, it is recommended to use Benzathine penicillin G (2.4 million units per week, administered intramuscularly for 3 weeks).[6]

This case report describes the process of diagnosing late latent syphilis and the dental treatments for a boy whose oral findings suggest a preliminary diagnosis of syphilis.

CASE REPORT

An eleven-year-old male patient was referred to the Gazi University Faculty of Dentistry Department of Pediatric Dentistry due to pain in his upper molar tooth. No systemic diseases were reported. The clinical extraoral examination showed no pathology. Clinical and radiographic examination revealed incompletely emerged permanent molars lacking a typical tubercle structure and enamel tissue. Moreover, the patient's lower permanent incisors and canines indicated a notched appearance. Unfitting composite restorations were observed in the upper front teeth, accompanied by poor oral hygiene (Figure 1a-2). These findings raised suspicions of an initial diagnosis of syphilis.

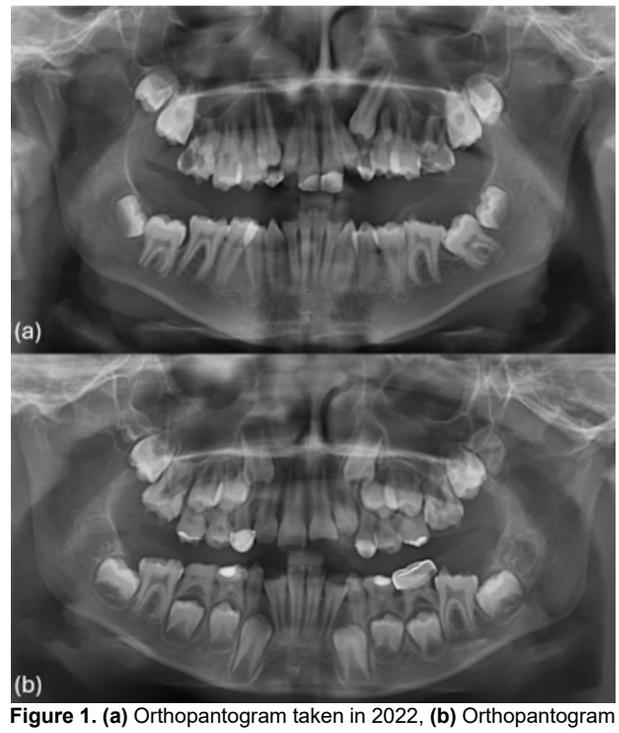

Figure 1. (a) Orthopantogram taken in 2022, **(b)** Orthopantogram taken in 2018.

Figure 2. İntraoral photographs.

Four years prior, panoramic radiographs revealed a notched appearance in the permanent incisors, known as Hutchinson incisors. In addition, both primary and permanent molar teeth were observed to lack enamel tissue and diverse cuspid structures, referred to as Mulberry molars (Figure 1b). The patient was subsequently referred to the Pediatric Infection Department at Gazi University's Faculty of Medicine with a preliminary diagnosis of syphilis. Both serological tests and bone examinations verified the diagnosis of Late Latent Syphilis. At roughly the same time, the patient's mother and sister also received diagnoses of syphilis.

The patient initiated treatment with Benzathine Penicillin G (2.4 million units/week, intramuscular) for 3 weeks, adhering to the late latent syphilis treatment protocol. This protocol was also administered to the patient's mother and sister, both diagnosed with syphilis. It was determined that the patient was not contagious, and dental treatments were started, utilizing standard infection control measures.

Figure 3. Anterior teeth restored with anterior strip crowns.

Figure 4. Unsupported and sharp syphilitic teeth into a regular shape.

In the patient's dental treatment plan, training in oral hygiene was provided first, followed by the removal of dental plaque through scaling and polishing. Painful upper permanent first molars that had lost an excessive amount of material were extracted. Unsuitable anterior restorations were replaced. The Etch-Bleach-Seal technique was used on hypoplastic teeth, utilizing 37% phosphoric acid for 60 s, followed by 5% sodium hypochlorite, again for 60 s, and another 30-s application of 37% phosphoric acid. Anterior strip crowns were used to restore the anterior teeth (Figure 3).

The unsupported and sharply cusped syphilitic teeth were reshaped into a regular form, followed by fluoride application post-abrasion (Figure 4). Other carious teeth were restored using composite resin (Charisma Smart, Heraeus Kulzer, Germany).

It was noted that the patient had no complaints at the second year follow-up (Figure 5a-b). The patient received oral hygiene recommendations and was referred to the Gazi University Faculty of Dentistry's Department of Orthodontics for orthodontic treatment.

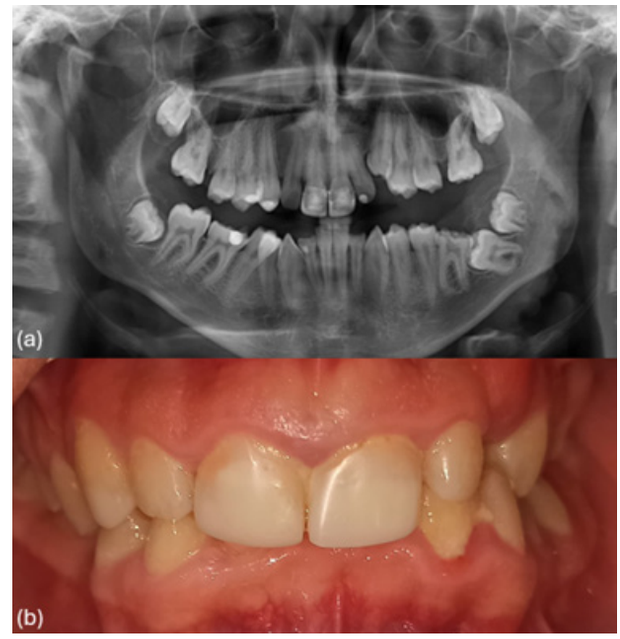

Figure 5. (a) Orthopantogram taken in 2024, **(b)** Intraoral photograph taken in 2024

DISCUSSION

The management of dental treatment in patients with syphilis begins with diagnosis. Caution should be exercised to prevent the transmission of infection in patients undergoing treatment or those who still show positive serological test results post-treatment. Dental treatment can be initiated either in the absence of oral lesions or after successful disease treatment.[7] In this particular case, since the patient had no oral syphilis lesions and the serological test was negative, dental treatment was immediately commenced.

The primary symptoms of congenital syphilis encompass interstitial keratitis, eighth nerve deafness, and Hutchinson's teeth - this is known as Hutchinson's triad.[4] In the case discussed, symptoms such as interstitial keratitis and eighth nerve deafness were not observed. Hutchinson's incisors were clinically and radiographically identified in the patient's permanent incisors, whereas Mulberry molars were found in the primary and permanent molars. It is crucial to mention that the 11-year-old male patient had sought medical attention at the clinic 4 years earlier, but his symptoms remained undiagnosed. We determined a diagnosis of congenital syphilis based on the aforementioned findings.

Lauc *et al*.[8] hypothesized that the enamel hypoplasia observed in congenital syphilis encompasses Fournier's canines. They also suggested that while Mulberry molars are common, they are not exclusive to congenital syphilis. Consequently, neither Fournier's canines nor Mulberry molars have been identified as pathognomonic for congenital syphilis.

The early loss of primary teeth associated with congenital syphilis has been documented.[9] However, it is not possible to definitively ascertain whether the loss of primary teeth in this instance was due to congenital syphilis or prior dental caries.

Penicillin G can be used to treat all stages of syphilis. For early latent syphilis, benzathine penicillin G (2.4 million units, intramuscular, single dose) is recommended; for late latent syphilis, benzathine penicillin G (2.4 million units/week, intramuscular for 3 weeks) is suggested.[6] The latter treatment protocol was initiated for an individual with late latent syphilis. The same protocol was also applied to their mother and sister, both diagnosed with syphilis.

There is limited literature on dental treatment for syphilis patients. In the few available studies, treatments vary based on the number of findings, severity, and time of diagnosis. Treatment options for permanent first molars with significant material loss can range from crowning to extraction, depending on the severity of the disease and the patient's overall oral health.[10] In our case, we decided to extract the upper permanent first molars exhibiting with apical lesions and severe material loss. Furthermore, inadequate anterior restorations were replaced with strip crowns, some syphilitic teeth were abraded to improve their aesthetic appearance, and fluoride was applied to prevent sensitivity. Composite restorations in our patient were performed using the etch-bleach-seal technique with 37% phosphoric acid for 60 s, 5% sodium hypochlorite for 60 s, and then 37% phosphoric acid again for 30 s to enhance bonding to hypoplastic teeth. No treatment was applied to the lower anterior teeth due to their poor visibility in the mouth, and to avoid causing sensitivity and loss of tooth material. Oral hygiene recommendations were provided to the patient to help maintain oral health.

CONCLUSION

Upon reviewing the literature on syphilis, it is clear that recognizing the disease and administering timely, appropriate penicillin treatment is a highly effective way to reduce this infectious disease and prevent significant future morbidity. Dentists must possess the ability to recognize the intraoral manifestations of systemic diseases like syphilis, refer patients as appropriate, diagnose the disease, and initiate the appropriate treatment. In doing so, early diagnosis and treatment can forestall disease progression and spread.

REFERENCES

1. Anders PL, Drinnan AJ, and Thines TJ. Infectious diseases and the dental office. N Y State Dent J 1998;64:29-34.

2. Kent ME, and Romanelli F. Reexamining syphilis: an update on epidemiology, clinical manifestations, and management. Ann Pharmacother 2008;42:226-36.

3. Little JW. Syphilis: an update. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005;100:3-9.

4. Singh AE, and Romanowski B. Syphilis: review with emphasis on clinical, epidemiologic, and some biologic features. Clin Microbiol Rev 1999;12:187-209.

5. Hillson S, Grigson C, and Bond S. Dental defects of congenital syphilis. Am J Phys Anthropol 1998;107:25-40.

6. Workowski KA, and Bolan GA. Sexually transmitted diseases treatment guidelines, 2015. MMWR Recomm Rep 2015;64:1-137.

7. CS M. Dental management of the medically compromised patient. In Little JW, Falace DA, Miller CS, Rhodus NL (Editors). Sexually transmitted diseases. 6. St Louis: Mosby; 2002.

8. Lauc T, Fornai C, Premužić Z, Vodanović M, Weber GW, Mašić B, and Šikanjić PR. Dental stigmata and enamel thickness in a probable case of congenital syphilis from XVI century Croatia. Arch Oral Biol 2015;60:1554-64.

9. Antonio AG, Kelly A, and Maia LC. Premature loss of primary teeth associated with congenital syphilis: a case report. J Clin Pediatr Dent 2005;29:273-6.

10. Cobourne M, Williams A, and Harrison M. National clinical guidelines for the extraction of first permanent molars in children. Br Dent J 2014;217:643-8.