

INTRODUCTION

Congenital syphilis is a serious, preventable infection transmitted from a pregnant mother to her baby during pregnancy or childbirth. The bacterium *Treponema pallidum*, which causes syphilis, crosses the placenta and infects the fetus, leading to complications such as premature birth, low birth weight, developmental delays, bone deformities, and stillbirth. Dental anomalies like Hutchinson's incisors, Fournier's molars (also called mulberry molars), hypoplastic grooves, and groove-like cuspal defects on canines were first described in 1859. Early screening and antibiotic treatment during pregnancy are essential to prevent syphilis transmission and protect both mother and baby. This case report presents on a female born with congenital syphilis and the dental management of its manifestations.

CASE REPORT

A seven-year-old female presented to Ohio City Family Dentistry in February 2024 with her mother with a chief complaint of "My pediatrician says she has cavities". The patient has a medical history significant for uncontrolled Type 1 Diabetes Mellitus, congenital Syphilis, and seasonal allergic rhinitis. Her medications include Omnipod Gen 5 insulin disposable pump, omeprazole, lidocaine-prilocaine 2.5-2.5% cream, insulin lispro, cetirizine, and Baqsimi nasal powder. There are no known food or drug allergies. Per her mother, the patient's syphilis infection was treated with penicillin in 2021 when she moved from the Dominican Republic to the United States for evaluation at St. Jude's Hospital for an incorrect diagnosis of leukemia. At that time, she was diagnosed with diabetes and treated for syphilis. Her surgical history is significant for three separate hernia repairs that were completed in the Dominican Republic prior to moving to the United States but no specific surgery dates can be recalled. Patient's most recent HbA1c reading was 8.8 from January 2024. The patient is followed by pediatric endocrinology and social work.

A comprehensive oral exam was completed. Extraoral findings revealed grossly normal anatomy, no lymphadenopathy, edema, or facial asymmetry. Intraoral exam revealed healthy, stippled gingiva with mild inflammation near the mandibular anterior teeth and generalized mild plaque accumulation along the gingival margins. Class I molar and canine occlusion and early mixed dentition. Existing restorative work included composite restorations on #A-DO, #B-O, and #S-O. Decay was noted clinically on #A,B,C,D,E,F,G,H,I,J,K,L,M,R,S,T. Teeth #24 and 25 erupted, #26 partially erupted, and #23 unerupted. Permanent first molars are erupted with no clinical decay. #E,F exhibit Grade I mobility. Patient denied any history of pain. Permanent first molars present with a mulberry-like appearance, exhibiting malformed occlusal anatomy with cuspal constrictures and significant secondary anatomy. Primary molars exhibit similar malformations to a lesser extent. Bitewings obtained support clinical findings. The patient's mother presented with a panoramic radiograph that was taken by a previous dentist from 2022 as well.

CLINICAL AND RADIOGRAPHIC PRESENTATION

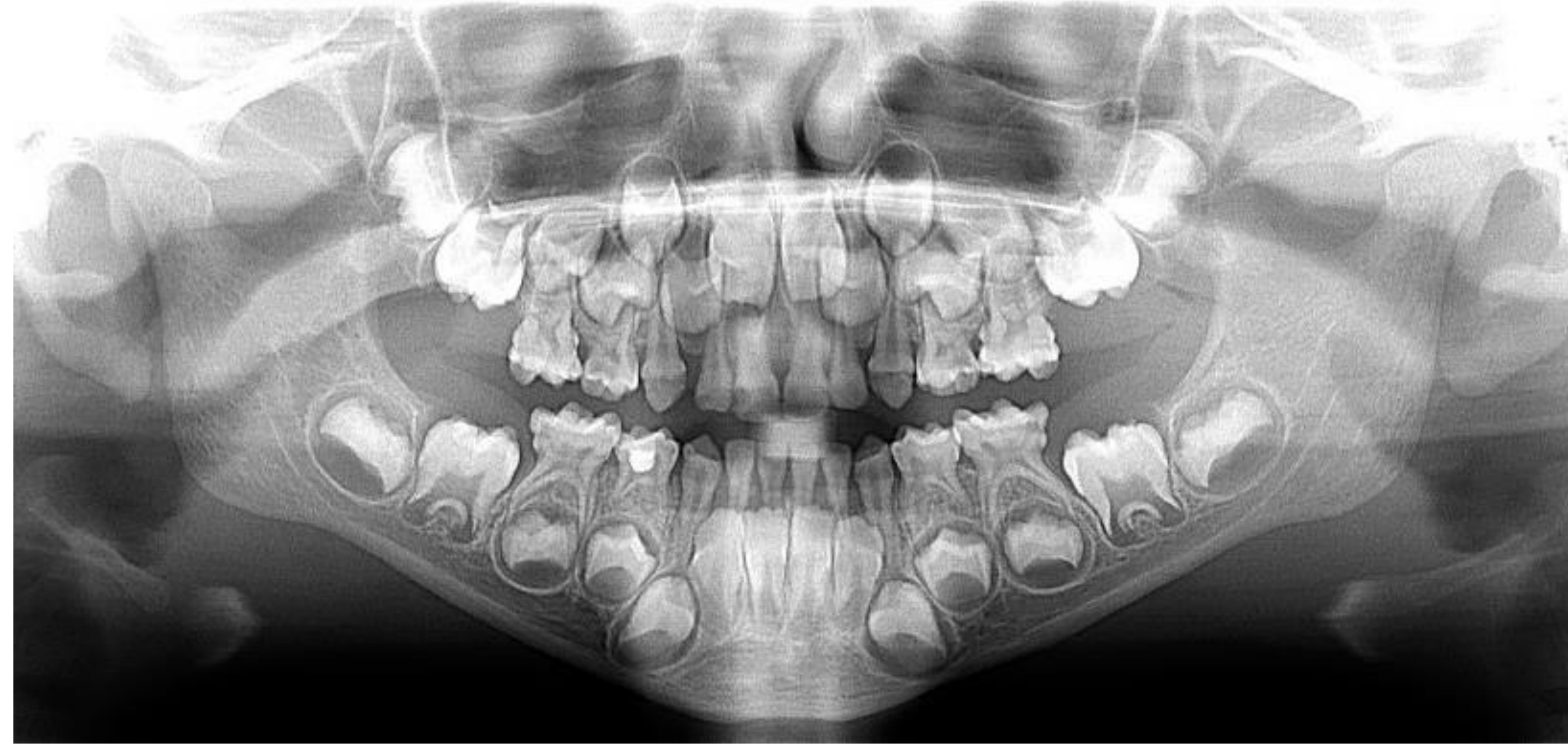


Figure 1: Panoramic radiograph from previous dentist dated October 2022. Noted in this radiograph is the mulberry-like appearance of the primary second molars, irregularly shaped maxillary primary canines, and developing first permanent molars with slight mulberry-like appearance on the mandibular permanent molars.

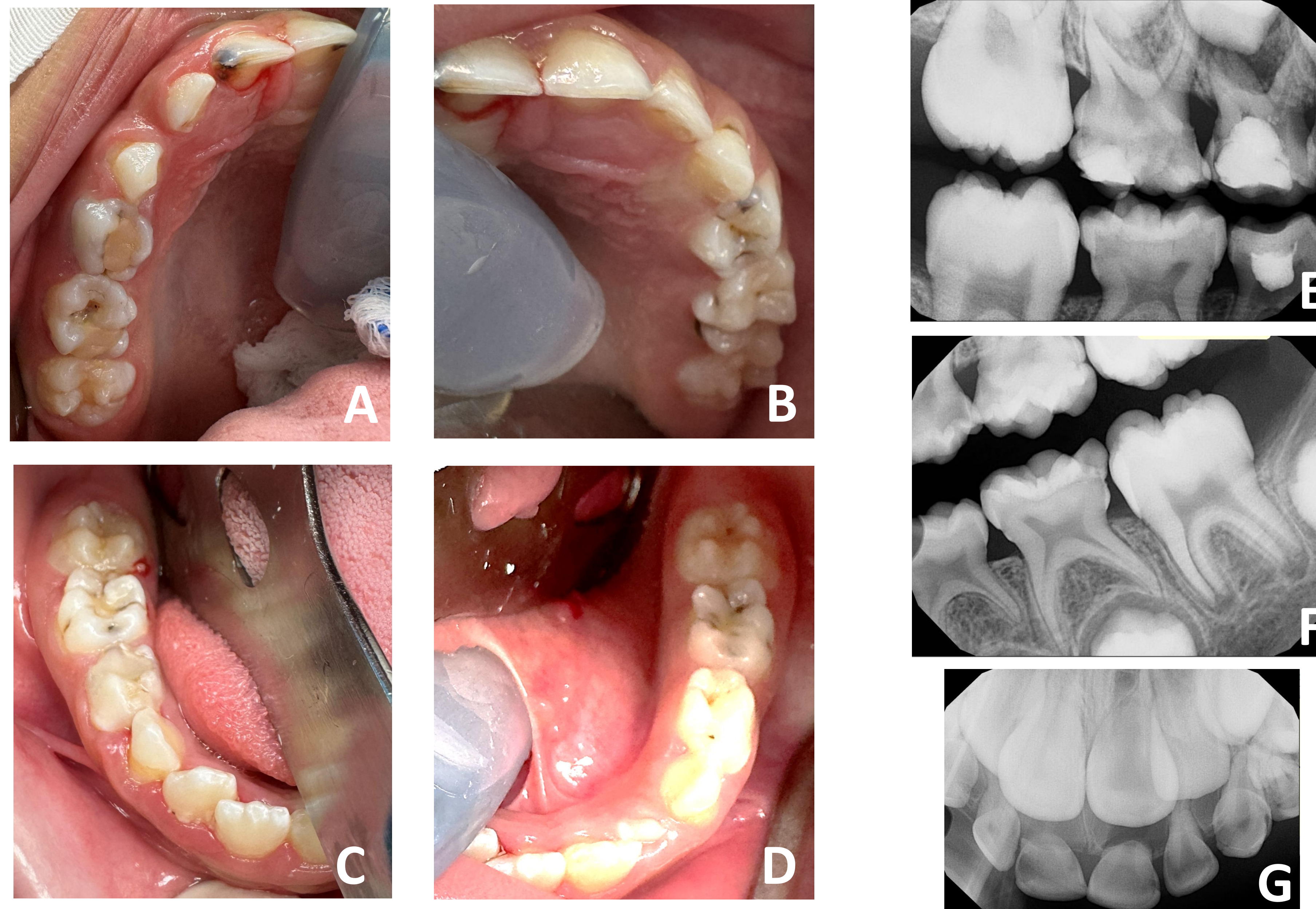


Figure 2: Clinical photos (A-D) and intraoral radiographs (E-G) taken day of surgery June 2024. Mulberry appearance of primary molars and cuspal constrictures of permanent first molars are able to be visualized in these images.

DISCUSSION

Although congenital syphilis is able to be prevented, transmission from mother to fetus remains problematic. Perinatal infection is so extreme that it is the second leading cause of perinatal deaths globally. Congenital syphilis differs from the adult form of the disease in that *T. pallidum* is directly transmitted into the fetus's bloodstream, disseminating the bacteria throughout the developing systems and resulting in a range of clinical manifestations. Over 50% of untreated syphilis cases in pregnant mothers result in adverse birth outcomes including frontal bossing, high-arched palate, anterior bowing of the tibia, eighth nerve deafness, ocular interstitial keratitis, Hutchinson teeth and stillbirth. Although research does not support a correlation between diabetes mellitus and congenital syphilis, the uncontrolled Type I diabetes mellitus diagnosis poses a greater obstacle for this patient. With xerostomia being a common symptom of those with diabetes, it increases this child's risk of developing caries. That risk is then compounded with the anatomy of mulberry molars and the hypoplastic enamel seen with congenital syphilis. Due to these circumstances and the extent of decay, it was determined that full-coverage stainless steel crowns were indicated for the primary molars, full-coverage zirconia crowns for the primary canines, and protective RMGI sealants for the permanent molars, including the grooves encircling the cusps. The primary maxillary anterior teeth were extracted due to extent of decay and amount of root resorption. Following restorations, it was discussed with the patient's mother that routine preventive care, improved oral hygiene, dietary changes, and lower HbA1c values were crucial to preventing further caries development.

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