Case Study 1: Case in Point

From the course entitled *Empowering Physicians, Nurses, Pharmacists and Other Non-Dental Healthcare Providers to Care for the Oral Health of Children and Adolescents,* of the *Oral-Systemic Health for Non-Dental Healthcare Providers* curriculum.

This case study demonstrates a lost opportunity to identify **early childhood caries (ECC)** at the incipient **white spot lesion** stage and subsequently prevent the progression of the disease. Had this child received oral screening at an earlier age, and had the parent been counseled regarding healthy diet and good oral hygiene practices, the outcome may have been different.

Unfortunately, cases like this are common, resulting in pain, tooth loss, and heavy use of public health resources, such as dental treatment provided in the hospital under general anesthesia (GA).

DAY 1: A 4-year, 1-month-old girl presented to her primary care provider (PCP) for a routine pediatric examination. She had seen the same PCP since she was 18-months-old, but she had never seen a dentist or dental hygienist.

The child was in good health, took daily multivitamins and had no known allergies. At this visit, her mother explained that recently her daughter had been fussy

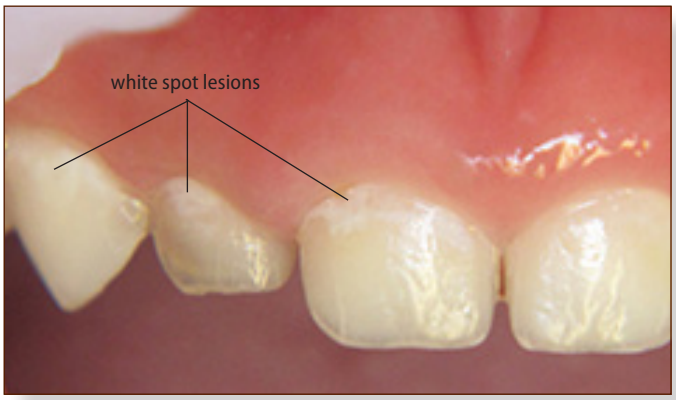

Figure 1. White spot lesions. These areas of demineralization are readily visible on the labial (lip-side) aspects of the child's maxillary central incisors. White spots are precursors to caries. Photo source: Travis Nelson. Used with permission.

Figure 2. Caries. Cavitated lesions (frank caries) are readily visible on the lingual (tongue-side) aspects of the same teeth shown in Figure 1. Photo source: Travis Nelson. Used with permission.

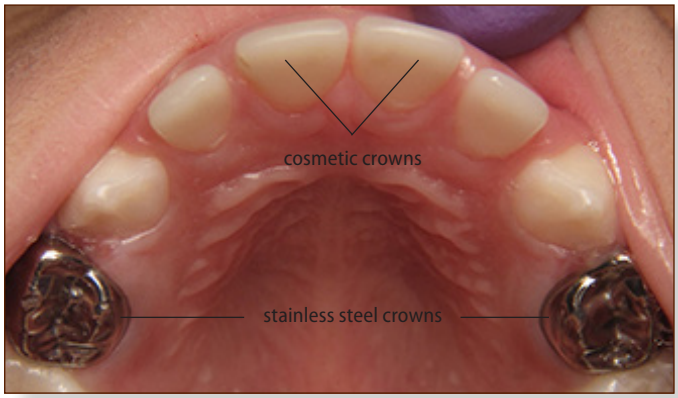

Figure 3. Crowns. Visible on these maxillary primary incisor teeth are the lingual aspects of cosmetic crowns created from white dental composite material. Stainless steel crowns are visible on the maxillary primary molars. Photo source: Travis Nelson. Used with permission.

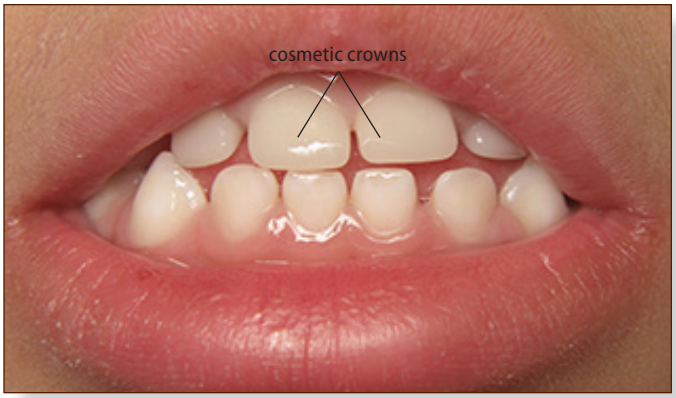

Figure 4. Crowns. Visible here is the labial aspect of the same cosmetic crowns on the maxillary primary incisor teeth shown above. Photo source: Travis Nelson. Used with permission.

and reluctant to eat cold and sweet foods. The PCP had not previously performed an oral examination on this patient, nor had he discussed aspects of oral health with the parent.

Upon visual examination of the child's mouth, the PCP found white spot lesions on the **labial** aspects of her **maxillary** anterior teeth (*Figure 1*) and visible **caries** on the **lingual** aspects of these teeth (*Figure 2*). The PCP referred the child to a local dentist, where she had an initial examination the following week.

DAY 9: The dentist diagnosed decay in all 4 maxillary incisors as well as deep caries into the **dental pulp** of both maxillary and **mandibular** primary molars. Given the extent of the child's treatment needs, the dentist recommended that she be treated under GA.

The backlog of other children requiring GA services for dental care was so great that it was not possible to treat this child for three months. During this long waiting period, the child experienced several episodes of tooth pain that interfered with her ability to eat and sleep.

DAY 111: After waiting more than 100 days, the child's dental treatment was completed in one hour under GA. Treatment consisted of extracting an abscessed mandibular molar, root canal treatment (**pulpotomy**) on three teeth, stainless steel crowns on five primary maxillary and mandibular molar teeth (*Figure 3*) and cosmetic crowns on four maxillary anterior teeth (*Figure 4*).

CONCLUSION: If caries in this child's mouth had been diagnosed earlier she may have been treated with **minimally invasive dental procedures**, such as **remineralization**. Delayed diagnosis precipitated severe **carious lesions** that required more invasive dental treatment, necessitating GA for this child.

Earlier diagnosis and treatment would have substantially decreased the child's pain, possibly eliminating the need for **invasive dental procedures** and significantly reduced the treatment expense.