**Pediatric Oral Health Case**

**Moderator Version**

**Learning Outcomes:**

Following completion of this case, the learner will be able to:

* Describe components of an oral health risk assessment for a pediatric patient
* Identify factors that contribute to increased risk of early childhood caries (ECC) in a pediatric patient
* Describe findings on an oral examination of a child
* Identify appropriate interventions to address the oral health needs of a pediatric patient
* Provide targeted patient education about the importance of good oral health and appropriate oral health behaviors
* Identify opportunities for collaborative practice among members of the health care team

**Patient Population:** Children

**Case Presentation:**

Oscar is a 3-year-old boy, brought to the clinic by his mother for well care and immunizations. His mother has no concerns about him, but mentions that her sister (Oscar’s aunt) is concerned about his teeth, saying that he has cavities and should be seen by a dentist. She states that Oscar’s grandmother informed her cavities are normal at this age in his baby teeth and those teeth will just fall out anyway.

**Past Medical History**: Healthy, active three-year-old. No significant health problems. Uncomplicated pregnancy and delivery. Growth and Development are appropriate.

**Social and Family History**: Lives with mother and 5-year-old sister. Mother is fluent in English and Spanish. Oscar is a picky eater and drinks juice, water, or whole milk from a bottle. He eats several sugary snacks between meals each day. Mother has had cavities filled in the past 6 months and has had three teeth pulled in the past several years. She does not have a regular dentist. Oscar’s sister has had fillings in her teeth. Oscar has never seen a dentist. He brushes his teeth sporadically and mom if his toothpaste contains fluoride or not. The family has Medicaid health insurance.

**Physical Examination**:

Vitals: Temp 37.6; HR 94; RR 24; BP 84/57; Wt 18.0 Kg (95%); Ht 96 cm (60%)

#### General: Alert healthy-appearing toddler, in no apparent distress.

Skin: No lesions, well-perfused, well-hydrated.

HEENT: Ears: Normal TM landmarks, no erythema. Throat: Moist mucous membranes, no erythema. Teeth: See photo below. No gingival inflammation.

Neck: No lymphadenopathy

Respiratory: Clear to auscultation in all lung fields, no wheezes.

Cardiac: Regular rate, rhythm, no murmurs. Pulses 2+, radial and femoral.

Abdomen: Soft, non-tender, non-distended. Normal bowel sounds, no masses or organomegaly.

Genitourinary: Normal appearing circumcised male genitalia, testes descended x2.

Musculoskeletal: Normal strength and tone in all extremities, gait normal.

Neurologic: DTRs intact, 2+, symmetrical. Balance is appropriate for age.

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Photo Credit: Joanna Douglass BDS, DDS

**Questions:**

1. What are Oscar’s primary health concerns and medical needs?

* Well care and immunizations
* Dental decay

1. What are the oral-systemic health issues?

* None at this stage in his disease. If oral disease is left untreated, he may face risk of periodontitis and serious infection.

1. What factors contribute to increased oral and general health risk for this patient?

* Mother with active decay and no dentist
* Persistent bottle use
* Frequent juice intake, frequent snacking
* Medicaid eligible
* Irregular oral hygiene and unclear if using fluoride toothpaste
* Lack of dental care
* Obvious decay on examination

1. Describe the findings on the oral examination:

* Plaque visible along gingival margin of central and lateral incisors
* No gingival edema or erythema
* Brown cavitations along tooth margins (interproximal) of maxillary central and lateral incisors

**Discussion Questions:**

1. What are some appropriate interventions for this patient to address his oral health needs?

* Fluoride varnish application
* Dental referral and establishment of a dental home
* Education of family members on appropriate dietary choices, proper brushing, and follow-up
* Self-management goal selection

1. What are possible self-management goals for this patient and his family?

* Dental home establishment for mother and patient
* Regular dental visits
* Appropriate tooth brushing
* Eliminate bottle, no or rare juice
* Less unhealthy snacking

1. What other members of the interprofessional team should be involved in this patient’s care?

* Dentist
* Dental hygienist
* Social worker/Patient navigator/Case manager

**Management:**

**Assessment**: Multiple social and behavioral oral health risk factors.

Early advanced dental caries.

**Plan**:

1. Application of fluoride varnish. Sample toothbrushes and fluoride toothpaste for all family members. Counseling on recommended schedule for varnish application. Recommendation for supplemental fluoride if water is not sufficiently fluoridated.
2. Counseling on basic principles of good oral health, including proper brushing, improved dietary choices, eliminating the bottle, and appropriate follow-up. Shared decision-making on self-management goals using the CAMBRA tool.
3. Dental referral. Engage a patient navigator to help establish a dental home.

**Background**

* Early Childhood Caries (ECC) affects children from first tooth eruption to age 5 years. It is an infectious, vertically transmissible disease that leads to the breakdown of tooth structure.
* ECC is public health crisis, affecting 5 % of all US children and 30-50 % of low-income children. It is the most common chronic disease of childhood, 5 times more common than asthma.
* ECC manifests as white spots in the early stages and progresses to brown spots, then frank decay. ECC typically affects the teeth that erupt early and are least protected by saliva, especially the upper incisors and first molars.
* The consequences of ECC include pain, impaired chewing and nutrition, infection, increased caries in permanent dentition, school absences, and extensive dental work.

**Risk Assessment**

* Risk factors for ECC include lower socioeconomic status, poor access to health/dental care, family members with active dental decay, frequent snacking with sugary foods, sleeping with a bottle containing juice or milk, presence of plaque, poor oral hygiene, inadequate fluoride exposure, and special health care needs or developmental delay. Factors that equate to particularly high risk include white spots or overt decay, presence of restorations, and primary caregiver with dental decay in past 12 months.
* Risk assessment is important to assure appropriate intervention, including dental referral and nutritional and hygiene counseling.

**Prevention**

* Non-dental health care providers serve an important role in the prevention of ECC as most children have access to medical care and are seen frequently during the first five years of life.
* Counseling: Brush twice daily with fluoridated toothpaste starting when teeth erupt. Caregiver should brush child’s teeth until at least age 6. Use a rice grain sized smear of toothpaste for children under age 3 and a pea-sized amount thereafter.
* Fluoride varnish should be applied 2-4 times per year and dietary fluoride supplement prescription considered if community water supply is inadequately fluoridated.
* Promote healthy, non-cariogenic snacks such as fruits, veggies, yogurt, cheese, popcorn, nuts, and water consumption. Cariogenic snacks include fruit roll-ups and other sticky products, gummy bears, cookies, crackers, sugared cereals, juice, and soda.

**Outcome:**

Oscar’s mother received counseling about simple dietary changes that could help limit progression of the dental caries. Oscar received fluoride varnish and it was determined that his municipal water supply is appropriately fluoridated. A patient navigator helped to set up a dental visit and establish a dental home for Oscar and his family. He will continue to receive dental care for his early advanced caries.

**Discussion**:

1. How did the interdisciplinary team contribute to improving the patient’s experience of care?
2. How did the interdisciplinary team contribute to improving the patient’s clinical outcomes?
3. Discuss the importance of the interdisciplinary team in addressing the unique oral and systemic health care needs of this patient population.

**References:**

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