Early Childhood Caries Management

Kindergarten Teacher Summer Oral Health Education Program
16 - 17 July 2013

Caries Process

- Food (sugar) + Bacteria = Acid
- Acid + Time + Tooth = Caries

Bacteria
- Mutans Streptococcus (MS) and Lactobacillus species
- MS may be transmitted vertically from caregiver to child through salivary contact
- Infants whose mothers have high levels of MS are at greater risk of acquiring the organism earlier than children whose mothers have low levels
- Horizontal transmission also occurs

Diet
- Frequent night time bottle feeding with milk
- Frequent in between meal consumption of sugar-containing snacks or drinks

Teeth
- Newly-erupted teeth, because of immature enamel, and teeth with enamel hypoplasia may be at higher risk of developing caries
The presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a child 71 months of age or younger

In children younger than 3 years of age, any sign of smooth surface caries is indicative of severe early childhood caries (S-ECC)

From ages 3 through 5, one or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of ≥4 (age 3), ≥5 (age 4), or ≥6 (age 5) surfaces constitutes S-ECC

In a recent survey of dental health status of 3 to 5-year-old Hong Kong preschool children, the proportion of children with caries experience increased from 31% among the 3-year-olds to 42% among the 5-year-olds.

Dental caries is unequally distributed among the population and heavily concentrated in socially disadvantaged children.

Higher risk of new carious lesions in both primary and permanent dentitions.
Diminish child’s overall quality of life.
Pain.
Disturb the child’s sleep.
Affect school performance.
Poor appetite.
Delayed physical growth and development.
Complicated and expensive treatment.
Malocclusion.
Management of Early Childhood Caries

- **Preventive**
  - fluoride
  - plaque control/toothbrushing
  - dietary control
  - fissure sealant
  - prevent or delay transmission of MS
  - dental visit

- **Restorative**

Fluorides

- **Systemic**
  - Water fluoridation
  - Fluoride supplements

- **Topical**
  - Water fluoridation
  - Fluoride varnish
  - Fluoride gel
  - Fluoride toothpaste
  - Fluoride mouthrinse

Fluoride Varnish

- **Duraphat**

Fluoride Gel

- Two forms used primarily
  - 1.23% acidulated phosphate fluoride
  - 2% sodium fluoride

Fluoride Toothpaste

- Sodium monofluorophosphate (NaMFP)
- Sodium fluoride (NaF)
- Sodium monofluorophosphate and sodium fluoride

Fluoride Mouthrinse

- Instructions for patient: forcefully swish 10 mL of liquid between the teeth and around the mouth for 60 seconds, do not swallow

- Indications:
  - patients undergoing orthodontic treatment
  - children with reduced salivary flow from medication or radiation treatment
  - children wearing intraoral prostheses

- Contraindications:
  - children younger than 6 years of age because of risk of enamel fluorosis
**F Toothpaste and Fluorosis**
- Young children often swallow considerable amount of toothpaste with a subsequent risk for enamel fluorosis

**Fluoride Toothpaste**
- A ‘smear’ of F toothpaste for children less than 2 years of age
- A ‘pea-size’ amount of toothpaste is appropriate for children aged 2 through 5

**Frequency of Toothbrushing**
- Twice daily brushing with a fluoride toothpaste has greater benefits than once-daily brushing
- Brushing before bedtime is a standard recommendation as salivary flow levels are reduced during sleep and brushing before sleep helps to maintain intra-oral fluoride levels

**Toothbrushing**
- Parents assist with toothbrushing until at least 7 years of age
- Parents should encourage the child to spit excess toothpaste into the sink to minimize the amount swallowed
- Rinsing after brushing should be kept to a minimum or eliminated

**Toothbrushing Technique**

**Proper Positioning of Brushing**
Infants and Young Toddlers:
- Choose a location with good lighting
- Lay your child on the bed or sofa
- Gently stabilize your child’s head
- Lift or lightly press the lips away from the teeth
- Brush the teeth
**Dietary Advice**

- Infants should not be put to sleep with a bottle filled with milk or liquids containing sugars
- Parents should be encouraged to have infants drink from a cup as they approach their first birthday
- Infants should be weaned from the bottle between 12 to 18 months of age

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**Dietary Advice**

- Avoiding high frequency consumption of liquids and/or solid foods containing sugar
- Sticky foods such as raisins, processed fruit snacks, crackers, and candy that can adhere to teeth for long periods should be avoided
- Recommend healthy snacks: nuts, vegetables, fresh fruits and whole grain snacks

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**Fissure Sealants**

![Fissure Sealants Image]

**Prevent or Delay Transmission of Bacteria**

- Advising expectant mothers to develop good oral hygiene before having a child
- Referring all expectant mothers, especially those with obvious dental problems, to a dentist for preventive care and any needed restorative or emergency treatment
- Recommending regular dental care to parents/caregivers of infants and toddlers, and other children in the household
- Recommending gums and mints with xylitol which can reduce the bacterial load

**Prevent or Delay Transmission of Bacteria**

- Avoid saliva-sharing behaviors when possible
- Tasting food before giving it to a child
- Sharing straws, cups, or utensils

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**Dental Visit**

- Establishing a dental home within 6 months of eruption of the first tooth and no later than 12 months of age
- Conduct a caries risk assessment and provide parental education including anticipatory guidance for prevention of oral diseases
Assess cooperation of child and decide on whether treatment will be conducted under LA, sedation or GA

Anterior teeth: tooth colored restorative materials (composite or glass ionomer cements)

Posterior molars: tooth colored restorative materials (composite or glass ionomer cements) and stainless steel crowns

Pulpotomy and pulpectomy where necessary

Extraction of unrestorable primary teeth

Fissure sealant placement of all first permanent molars on eruption

Review 3-6 monthly

Primary dentition

Inadequate oral hygiene

Generalised marginal gingivitis

Multiple carious lesions

Primary dentition with developing permanent teeth consistent with age

Multiple carious teeth

Caries lesions in 53B 54D 55O 64D 65M 74D 84D

GIC restoration in 84O

Caries lesions in 53B 54D 55O 64D 65M 74D 84D

GIC restoration in 84O
Case II

Dental Treatment Under General Anaesthesia

Post Treatment

Hospital Admission
Primary dentition
Inadequate oral hygiene
Severe early childhood caries
55 54 53 52 51 61 62 63 64 65
85 84 82 81 71 72 74 75

Case 4: Early Childhood Caries with Inverted Supernumerary Tooth
Management under General Anaesthesia

Pre-op photographs
Immediate post op
2 weeks post op

Supernumerary tooth

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