

# RAMPANT DENTAL CARIES

Dr. Hiyam Salah

## Definition:

Suddenly appearing, widespread, rapidly burrowing type of caries, resulting early involvement of the pulp and affecting those teeth usually regarded as immune to ordinary decay.

There is no evidence the mechanism of the decay process is different in rampant caries or that occurs only in teeth that are malformed or inferior in composition. On the contrary, rampant caries can occur suddenly in teeth that were previously sound for many years. The sudden onset of the disease suggests that an overwhelming imbalance of the oral environment has occurred, and some factor(s) in the caries process seems to accelerate it so that it becomes uncontrollable; it is then referred to as *rampant caries*.

There is considerable evidence that emotional disturbances may be a causative factor in some cases of rampant caries.

- Repressed emotions and fears,
- Dissatisfaction with achievement,
- Rebellion against a home situation,
- A feeling of inferiority,
- A traumatic school experience,
- And continuous general tension and anxiety have been observed in children and adults who have rampant dental caries.

Because adolescence is often considered to be time of difficult adjustment, the increased incidence of rampant caries in this age group lends support to this theory.

- An emotional disturbance may initiate an unusual craving for sweets or the habit of snacking, which in turn might influence the incidence of dental caries.
- On the other hand, a noticeable salivary deficiency is not an uncommon finding in tense, nervous, or disturbed persons.

- Indeed, various forms of stress in both children and adults, as well as various medications (such as tranquilizers and sedatives) commonly taken to help persons cope with stress. Are associated with decreased salivary flow and decreased caries resistance caused by impaired remineralization.
- It is well known that radiation therapy to the head and neck often results in significantly diminished salivary function and may place patients at high risk for severe caries development.

## **EARLY CHILDHOOD CARIES SEVERE EARLY CHILDHOOD CARIES, NURSING CARIES, BABY BOTTLE TOOTH DECAY.**

The American Academy of Pediatric Dentistry (AAPD) defines early childhood caries (ECC) as the presence of one or more decayed (noncavitated or cavitated), missing (due to caries), or filled tooth surfaces in any primary tooth in a child 71 months of age or younger.

The academy also specifies that, in children younger than 3 years of age, any sign of smooth-surface caries is indicative of severe early childhood caries (S-ECC).

### **Causes:**

For many years it has been recognized that, after eruption of the primary teeth begins, excessively frequent bottle feeding and /or prolonged bottle or breast feedings is often associated with early and rampant caries.

### **Clinical appearance:**

The clinical appearance of the teeth in S-ECC in a child 2,3 or 4 of age is typical and follows a definite pattern.

- There is early carious involvement of the maxillary anterior teeth, the maxillary and mandibular first primary molars, and sometimes the mandibular canines.
- The mandibular incisors are usually unaffected.

### **Mechanism:**

A discussion with the parents often reveals an inappropriate feeding pattern: the child has been put to bed at afternoon naptime and /or at night with a nursing bottle holding milk or a sugar-containing beverage. The child falls asleep, and the liquid becomes pooled around the teeth (the lower anterior teeth tend to be protected by the tongue).

It would seem that the carbohydrate-containing provides an excellent culture medium for acidogenic microorganisms. Salivary flow is also decreased during sleep, and clearance of the liquid from the oral cavity is slowed.

### **Instruction to the mother:**

- The investigators recommend that from birth the infant should be held while feeding.
- The child who falls asleep while nursing should be burped and then placed in bed.
- Only give water or milk in a bottle;
- Never add sugar to bottle-fed drinks;
- If a night – time bottle is given, it should only contain water;
- Progressive dilution of drinks may be a useful intermediate step when trying to change a child's drinking habits.
- In addition, the parent should start brushing the child's teeth as soon as the erupt.
- And should discontinue nursing as soon as the child can drink from a cup \_\_\_ at approximately 12month of age, so children should start drinking from a cup rather than a bottle as soon as they are able;
- Priority needs to be given to a major national educational program directed toward educating the public about nursing caries. The educational program must involve direct contact with pregnant women, parents, and other caregivers in population subgroups with a high prevalence of nursing caries.

## **CONTROL OF ALL ACTIVE CARIOUS LESIONS**

- 1) When rampant caries occurs, the first steps are to *initiate treatment of all carious lesions* to
  - Stop or at least slow the progression of the disease and

- To identify the most important causes of the existing condition.
- 2) Next, and even simultaneously, if possible, the practitioner begins working with the parents and / or patient to achieve the appropriate behavioral modifications required to prevent recurrence.
  - 3) The problem may then be approached in a systematic manner. invariably modifications in oral hygiene procedures and dietary habits will be necessary.
    - If the initial restorative treatment is to be done in one appointment under general anesthesia or in one or two appointments with sedation control of the existing lesions will be definitive at that time.
    - If the restorative care is to be performed over several visits in the outpatient setting, gross caries excavation an initial approach in the control of rampant dental caries has several advantages:
      - ✓ The removal of the superficial caries and the filling of the cavity with a glass ionomer material or zinc oxide eugenol cement will at least temporarily arrest dental pulp. Gross caries removal can usually be accomplished easily in one appointment. If there are many extensive carious lesions, however, a second appointment may be necessary,
      - ✓ An alternative approach for some compliant children (with compliant parents) old enough to rinse and expectorate and for compliant adolescents is to initiate intensive and multiple antimicrobial and topical fluoride therapies in conjunction with the necessary behavioral life-style modifications, and then to proceed systematically with restorations and other indicated therapies.

## **REDUCTION IN THE INTAKE OF FREELY FERMENTABLE CARBOHYDRATES**

- ❖ Some excellent studies have been reported that show a relationship between *diet* and *dental caries*.
- ❖ There is also much evidence to confirm that between -meal snacking and the frequency of eating and drinking related to dental caries incidence.
- ❖ Dental caries activity could be increased by the consumption of sugar if the sugar were in a form easily retained on the tooth surface. The more

frequently this form of sugar was consumed between meals, the greater was the tendency for an increase in dental caries.

- ❖ The carbonated soft drinks and other sweetened drinks so popular with older children and adolescents are readily available today. Frequent ingestion of these drinks is another form of snacking that can promote and accelerate caries progression.

## Classification of Sugars

The COMA Report introduced a new method of classifying dietary sugars, as a basis for discussion of their dietary effects. According to this classification, sugars are divided into intrinsic and extrinsic and extrinsic sugars. This acknowledged the fact that whether a potentially cariogenic sugar actually causes caries depends on the type of food it is found in, eg just because apples contain fructose, it does not mean that apples cause caries.

### A. Intrinsic sugars.

- Sugars present within the cells of whole fruit and vegetables, mainly fructose, glucose and sucrose;
- Low cariogenicity as the sugar is intrinsic, contained within the cell structure.

### B. Extrinsic sugars

#### i. Milk sugars

- Sugars, especially lactose, occurring naturally in milk and milk products;
- Minimal cariogenicity in normal use.

#### ii. Non – milk extrinsic sugars

- Sugars in fruit juice, honey, sugars added to recipes and table sugar including sucrose, fructose and glucose;
- Non-milk extrinsic sugars (NMEs – the enemies?!) are cariogenic;
- 4 major sources of NMEs – confectionery, soft drinks, biscuits & cakes and table sugar;
- It is the consumption of these sugar – containing foods that should be reduced.