Disclaimer

This movie is an educational resource only and should not be used to manage dental health. All decisions about the management of baby bottle caries must be made in conjunction with your dentist or a licensed healthcare provider.
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INTRODUCTION

Parents never want to see their child upset and often comfort the child by providing a baby bottle filled with milk, juice, or soda. Parents are often unaware that this can harm their children’s dental health by actually rotting away the child’s teeth.

Baby bottle caries is the presence of severe caries (cavities) in infants or young children. It is a very common bacterial infection. It is also known as “early childhood caries”, or “nursing caries”.

Introduction

Baby bottle caries is a major health concern that affects the oral health of many infants and children today and can impact the total well being of a child. In order to learn more about baby bottle caries, it helps to understand the normal anatomy of the tooth.

(Refer fig. 1)

Normal Tooth Anatomy

The teeth consist of two main parts, the crown and the root.

Crown: The visible part of the tooth projecting above the gums is the crown.

The crown has three layers:

(Refer fig. 2 to 4)

- Enamel
- Dentin
- Pulp

(Continued in next page)
Enamel
It is the hardest outermost part of teeth. It is white in color and is made of calcium hydroxyapatite. The enamel layer is thinner in deciduous teeth, about 1mm.

(Refer fig. 5)

Dentin
It lies below both the enamel and cementum layer of tooth and is softer than enamel which makes it more susceptible to decay. It is yellowish in color.

(Refer fig. 6)

Pulp
It is present at the center of the tooth and is commonly referred to as the ‘nerve’ of the tooth. It is the softer, living inner structure of teeth and is made up of blood vessels and nerves. The pulp chamber is larger in deciduous teeth (baby teeth).

(Refer fig. 7)

Root: The deciduous teeth have longer and more flared roots. It is that part of the tooth that is embedded inside the jawbone. This portion is made up of dentin overlying which a mineralized layer is called cementum.

(Continued in next page)
Cementum contains very small fibers called periodontal ligament fibers which help in anchoring the teeth to the bone. Inside the roots there are small canals through which the main blood vessels and nerves pass to the pulp chamber. These are referred to as root canals.

(Refer fig. 8)
What is Baby Bottle Caries?

Baby bottle caries is a dental condition characterized by severe dental cavities within a child’s primary or baby teeth. It is promoted by sugars, acids and sometimes streptococcus mutan, a bacterium, and occurs in children and infants prior to the permanent teeth appearing.

(Refer fig. 9)

Signs and Symptoms

Signs of symptoms of baby bottle caries can include the following:

- Pain on biting or brushing
- White spots on the surface of the teeth
- White lines at the base of the teeth along the gum line
- Cavities in teeth appear like small holes or dark pits
- Difficulty in speaking or chewing
- Irritability

(Fig. 10)
Fever
Bleeding gums
Symptoms occur on the most visible portion of the front teeth

(Fig. 10)

- Early onset and progresses rapidly
- The symptoms may not be obvious until the decay has caused visible damage to the teeth and gums.

Causes

Causes of baby bottle caries can include the following:

- Bottle Propping is when a parent ‘props’ the bottle, usually on a pillow, so they don’t have to hold it for the baby. This can lead to ear infections, choking, as well as tooth decay.

- It’s not just what you put in your child’s bottle that causes decay, but how often and how long the liquid stays on their teeth.

- Allowing your child to fall asleep with a bottle during naps or at nighttime can harm the child’s teeth.

- During sleep saliva production is decreased causing bottle liquids to pool in the Mouth.

- The primary cause of caries is a bacterium called streptococcus mutans which contributes to tooth decay.

- Frequent and prolonged consumption of liquids containing fermentable carbohydrates causes decay.
• Eruption of the first teeth contributes to baby bottle caries since the deciduous tooth surface is not hardened and is more susceptible to caries.

• Tooth decay occurs when children’s teeth come in contact with too much sugar. Bacteria then use this sugar as food producing acids that adversely affect teeth.
Diagnosis

Your dentist or pedodontist (pediatric dentist) will diagnose baby bottle caries based on the following:

**Oral Examination:**
Examination of the mouth and teeth for any caries.

**X-rays:**
Dental x-rays are taken to confirm the presence and extent of the decay.

Treatment

Treatment is necessary with any cases of baby bottle caries in order to prevent further dental destruction and future problems. Baby bottle caries can be divided into three stages: early detection, obvious decay, and whether the decay reaches the pulp. Treatment will vary depending on which stage of caries is present.

Stage 1: Early detection

In stage 1 caries, demineralization will be present and appears as chalky white spots or lines on the teeth. Treatment includes:

**Fluoride varnish:** A thin coating of resin is applied to the surface of all teeth. The purpose of applying fluoride varnish is to retard, arrest, and reverse the process of cavity formation. The varnish application should be repeated at 3-month intervals for high risk children and 6-month intervals for low risk children.

(Refer fig. 12 to 19)
Diet modification: A series of small dietary changes over a period of time is usually easier on the child and the parent and will lead to better oral health. Gradually dilute the bottle liquid with water as the only safe liquid to put in a bottle that won’t contribute to tooth decay is water. Also, decrease the child’s consumption of sugar.

(Refer fig. 13)

Stage 2: Obvious decay is present

In stage 2 dental caries, teeth are restored with fillings or caps. Glass ionomer cement, a tooth colored filling material, is commonly used for baby teeth. It bonds to the tooth structure and releases fluoride to strengthen teeth and prevent decay.

Crowns are applied if the decay is extensive and there is limited tooth structure.

(Refer fig. 12 to 19)

(Continued in next page)
Stage 3: Decay reaches the pulp

In stage 3 baby bottle dental caries, pulp therapy or tooth extraction is needed.

During pulp therapy, the nerve and blood vessel tissue or pulp is removed along with decayed portions of the tooth. The roots are then filled with a sealing material and the tooth is filled. A crown may be placed if needed.

Alternative to pulp therapy is a tooth extraction, in which the entire tooth is removed. Extractions are usually avoided as other teeth move into the space leading to crowding.

Prognosis: With timely diagnosis and treatment, the progression of tooth decay can be stopped relatively painlessly. The longer the decay goes untreated, however, the more destructive it becomes and the longer and more intensive the treatment will be.

(Refer fig. 12 to 19)
Prevention

Preventive and therapeutic measures are often necessary because children with baby bottle caries are at greater risk for subsequent cavity development. Preventative measures include:

- **Middle of the night bottle feeding should be avoided.**
- **Bottles should be given only during feeding times.**
- **After each bottle feeding wipe the baby’s gums and teeth with a clean damp wash cloth.**
- **Encourage children to drink from cup as soon as they are able.**
- **Begin tooth brushing as soon as your child has teeth.**
- **Inspect your child’s teeth regularly.**

(Fig. 20)
Use fluoridated water by the age of 6 months.

Begin flossing when primary teeth have erupted.

Do not fill the bottle with sugar water, milk or juices, use plain water instead.

Regular visits to the dentist or pedodontist (pediatric dentist) is important in maintaining good oral hygiene.
Disclaimer

Although every effort is made to educate you on Dental Anomalies related to Tooth Structure and take control, there will be specific information that will not be discussed. Talk to your dentist or pedodontist about any concerns you have about Dental Anomalies related to Tooth Structure.
YOUR SURGERY DATE

- [ ] READ YOUR BOOK AND MATERIAL
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- [ ] PRE - HABILITATION
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Physician’s Signature:  
Date:  

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