DENTAL CARIES

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ABSTRACT
Dental caries is a global public health problem and the most widespread non-communicable disease (NCD). Early childhood caries (ECC) is a serious public health problem in both developing and industrialized countries. Tooth caries, also known as dental caries, is a bacterial infection that causes demineralization of tooth enamel, leading to cavities and potentially painful abscesses. As tooth decay advances, it can cause a toothache (tooth pain) or tooth sensitivity to sweets, hot, or cold. If the tooth becomes infected, an abscess, or pocket of pus, may form, causing pain, facial swelling, and fever. Dental cavities are holes in the teeth caused by tooth decay. The protective enamel gets worn away, leaving the core of the tooth exposed. Prevention and control of tooth caries involve a combination of oral hygiene practices, dietary modifications, and professional interventions.

Key Words: *Dental caries, bacterial infection, hole in teeth.*

INTRODUCTION

Dental caries is a global public health problem and the most widespread non-communicable disease (NCD).Tooth caries, also known as dental caries, is a bacterial infection that causes demineralization of tooth enamel, leading to cavities and potentially painful abscesses (Fejerskov, 2013). It is a major public health concern worldwide, affecting people of all ages, but most commonly children and adolescents (World Health Organization, 2013). Tooth caries is a complex, multifactorial disease that involves the interaction of genetic, environmental, and lifestyle factors (Bretz et al., 2013).

Dental caries is one of the oldest and most common diseases found in humans. While there have been continuous efforts to reduce its prevalence, it is still widespread, especially in lower socio-economic classes [Costa SM, Martins CC, Bonfim Mde L, Zina LG, Paiva SM, Pordeus IA, Abreu MH. A systematic review of socioeconomic indicators and adult dental caries,2012].

Early childhood caries (ECC) is a serious public health problem in both developing and industrialized countries. [Livny A, Assali R, Sgan-Cohen H. Early Childhood Caries among a Bedouin community residing in the eastern outskirts of Jerusalem. 2007]

ECC can begin early in life, progresses rapidly in those who are at high risk, and often goes untreated. [Grindefjord M,1995, Weinstein P,1994] Its consequences can affect the immediate and long-term quality of life of the child and family and can have significant social and economic consequences beyond the immediate family as well.[Inglehart MR et al 2002]

SYMPTOMS

In early tooth decay, there are not usually any symptoms. As tooth decay advances, it can cause a toothache (tooth pain) or tooth sensitivity to sweets, hot, or cold. If the tooth becomes infected, an abscess, or pocket of pus, may form, causing pain, facial swelling, and fever.

Cavities can start on any tooth surface. Here are common types of cavities and where they occur:

Smooth surface: This slow-growing cavity dissolves tooth enamel. You can prevent it- and sometimes reverse it – with proper hygiene. People in their 20s often develop this form of tooth decay between their teeth.

Root decay: tooth decay causes all cavities, including root cavities, to develop. The process occurs over time, and it starts with a sticky film called plaque that develops on your teeth when bacteria in your mouth feed on sugar and starches that are left behind from the foods that you eat. The plaque can harden into tartar, and acid within the plaque can begin to eat away at the enamel surface of your teeth. Tiny holes in the enamel develop, and bacteria can wiggle their way down into the holes and reach the dentin layer of your tooth. If not stopped, that bacteria can even make their way down to the center of your tooth, where the nerve is located.

CAUESE OF CAVITIES

Dental cavities are holes in the teeth caused by tooth decay. The protective enamel gets worn away, leaving the core of the tooth exposed. Once plaque builds up on your teeth as you eat, it can begin to cause tooth decay in as little as 20 minutes.

Other causes can also contribute to the emergence of cavities, or make your teeth more prone to getting them.

Insufficient oral hygiene: The importance of maintaining excellent oral hygiene cannot be overstated. Most health complications can be prevented simply by taking care of your mouth. Below are a few debilitating chronic conditions and health problems believed to be associated with poor oral hygiene.

Poor nutrition: An untreated cavity is painful and can result in tooth loss, which may lead to the inability to chew certain foods. Malnutrition or abnormal digestion may result, since these conditions often prevent a person from chewing and eating adequate amounts of food as well as eating some hard, high-fiber foods. Additionally, many diseases such as diabetes and cardiovascular disease may exacerbate these conditions and lead to poor oral health.

Since bacteria need carbohydrates for food, the rate of cavities can be reduced by cutting back on simple carbohydrates such as sucrose, glucose, and fructose. (J. Clifford, L. Bellows and R. Moore)

Deep tooth crevices and enamel issues: deep tooth crevices and enamel issues can lead to oral health problems such as tooth decay and sensitivity. Research has shown that deep crevices can trap bacteria and food particles, increasing the risk of tooth decay (Moore et al., 2001). Enamel issues, such as enamel hypoplasia, can increase the risk of tooth sensitivity and decay (Aral & Ozgul, 2009) fluoride treatments can help prevent enamel issues and strengthen tooth enamel. Sealants can be effective in preventing tooth decay in deep crevices

Dry mouth problems: Dry mouth, or xerostomia, is a common condition characterized by a lack of saliva production, leading to dryness and discomfort in the mouth (Sreebny, 2000).

Teeth grinding: teeth grinding, also known as bruxism, is a common condition characterized by the habitual grinding or clenching of teeth (Lobbezoo et al., 2008). research has identified various factors contributing to teeth grinding, including stress, anxiety, and sleep disorders (Kato et al., 2001; Ohayon et al., 2001). Symptoms of teeth grinding include: worn-down teeth, jaw pain or tenderness, headaches, earaches, clicking or locking of the jaw joint.

TOOTH DECAY STAGES

How Poor Oral Hygiene Can Affect You

How can poor oral hygiene impact your health? Here's a quick breakdown:

Cavities, gum disease, and other issues can lead to tooth loss, which can impact your bite and ability to chew and eat.

Untreated gum disease is associated with chronic health conditions, including heart disease, stroke, and diabetes.

Poor dental health and appearance of the teeth can significantly impact mental health, raising self-consciousness and lowering self-esteem.

Not getting timely dental care and cleanings reduces the chances of diagnosing and treating oral cancer.

RISK FACTORS

Tooth caries, also known as dental caries, is a bacterial infection that causes demineralization of tooth enamel, leading to cavities. Several risk factors contribute to the development of tooth caries. Here are some of the key risk factors:

1. Poor Oral Hygiene (Moynihan & Kelly, 2014)
2. High Sugar Consumption (Sheiham & James, 2014)
3. Inadequate Fluoride Exposure (Marinho et al., 2013)
4. Dry Mouth (xerostomia) (Navazesh et al., 2012)
5. Inadequate Dental Care (Vargas et al., 2011)
6. Genetics (Bretz et al., 2013)
7. Socioeconomic Status (Sanders et al., 2013)
8. Smoking and Tobacco Use (Khan et al., 2013)
9. Diabetes (Lamster et al., 2011)
10. Medications (e.g., antihistamines, decongestants) (Navazesh et al., 2012)

DIAGNOSIS

Diagnosis of tooth caries involves a combination of visual, radiographic, and clinical examinations. Visual examination using a mirror and explorer is the most common method, allowing dentists to detect early signs of caries, such as discoloration, texture changes, and cavitation (Ekstrand et al., 2013).

Radiographs, including bitewing and periapical radiographs, are used to detect caries in interproximal and occlusal surfaces, as well as to assess the extent of caries (Russell & Hosney, 2013).

Clinical examinations, such as probing and tactile assessments, help identify softening of tooth structure and cavitation (Longbottom et al., 2009).

Additional diagnostic tools, like fiber-optic transillumination (FOTI) and laser fluorescence, can aid in detecting early caries lesions (Bader et al., 2010). Accurate diagnosis is crucial for effective treatment planning and prevention of caries progression.

PREVENTION AND CONTROL

Prevention and control of tooth caries involve a combination of oral hygiene practices, dietary modifications, and professional interventions. Regular brushing with fluoride toothpaste and flossing help remove plaque and prevent caries (Marinho et al., 2013). Limiting sugary and acidic foods and drinks, especially between meals, reduces the risk of caries (Moynihan & Kelly, 2014). Professional fluoride applications, such as varnishes and gels, provide additional protection. Dental sealants can prevent caries in occlusal surfaces. Regular dental check-ups and cleanings help detect and prevent caries progression. Community-based interventions, like water fluoridation and school-based oral health programs, also contribute to caries prevention (Rugg-Gunn & Do, 2012). Additionally, chlorhexidine mouthwash and xylitol gum have been shown to be effective in preventing caries (Scheie et al., 2012).

CONCLUSION

The importance of preventing dental caries should be taught at school level. Good oral hygiene is essential to prevent tartar development.

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