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COMMON PROBLEMS ASSOCIATED WITH TEETH AND GUMS: A REVIEW

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ABSTRACT- Oral health, general symptoms of dental issues, and common dental problems. It also examines how to prevent dental problems, how to maintain good oral health, and when to see a dentist. Oral health is the overall health of the teeth, gums, and mouth. People typically use the term "dental problems" to refer to conditions that affect oral health. Dental problems include cavities, tooth erosion, gum infections, and gum diseases. They can cause pain and discomfort, may affect a person's ability to eat, and may have a negative impact on an individual's self-esteem. In most low and middle income countries, the prevalence of oral diseases continues to increase with growing urbanization and changes in living conditions. This is primarily due to inadequate exposure to fluoride (in the water supply and oral hygiene products such as toothpaste), availability and affordability of food with high sugar content and poor access to oral health care services in the community. Marketing of food and beverages high in sugar, as well as tobacco and alcohol, have led to a growing consumption of products that contribute to oral health conditions and other non-communicable diseases.

Key Words: Plaque, Biofilm, Calculus, Tartar, Perioscopy.

OBJECTIVE: To Provide knowledge towards dental hygiene among people.

INTRODUCTION

Dental problems include cavities, tooth erosion, gum infections, and gum diseases. They can cause pain and discomfort, may affect a person's ability to eat, and may have a negative impact on an individual's self-esteem. According to the World Health Organization (WHO), dental diseases are among the most common Trusted Source chronic diseases worldwide. The Global Burden of Disease Study 2017 estimated that around 3.5 billion Trusted Source people experience oral disorders. Of these, dental cavities are the most common. An important first step in combating the two leading causes of poor oral health—dental caries and periodontal disease—is understanding that tooth loss is often the result of disease or injury, rather than an inevitable consequence of aging [1]. Educational programs emphasizing the importance of oral health promotion/disease prevention are also necessary to raise awareness and discourage the lack of concern regarding oral health. Proper oral health is vital to a productive and healthy life. Recent research has indicated possible associations between chronicoral

infections and diabetes, heart and lung disease, stroke, and low birth weight or premature births. In other words, oral health refers to the health of our mouth and, ultimately, supports and reflects the health of the entire body [2]. Since the 20th century, numerous advances in research and technology have improved the status of oral health in America for most populations. With the development of fluoridated drinking water and dental sealants, Americans are less likely to experience tooth loss and gingivitis by middle age, which commonly plagued Americans prior to the turn of the last century. In addition, the development of dental implants and the refinement of dental materials and treatment techniques have improved our ability to restore function due to tooth loss

GENERAL SYMPTOMS

Symptoms can vary depending on the cause. However, a common symptom of dental problems includes:

- Toothache
- Sensitivity to cold or hot food or drinks
- Loose teeth
- Sudden pain while eating cold or sweet foods
- Tooth changing color or shape
- Worn teeth, including holes, cracks, or chips on the tooth
- Bleeding or swollen gums
- Gum pain
- Swollen cheeks
- Clicking jaw

Figure. 01:- General symptoms of teeth and gums.

1. **PLAQUE:** Plaque is a sticky, colourless film of bacteria and sugars that constantly forms on our teeth.it is the main cause of cavities and gum disease. It is estimated over 95% of bacteria existing in nature are in biofilms. The slime layer that forms on rocks in streams is a classic example of a biofilm. Biofilms are ubiquitous; they form on virtually all surfaces immersed in natural aqueous environments. Biofilms form particularly fast in flow systems where a regular nutrient supply is provided to the bacteria. The reason for the existence of the biofilm is that it allows the micro-organisms to stick and to multiply on surfaces. Micro-organisms undergo a wide range of physiological and morphological adaptations in response to environmental changes.[3]

Figure. 02 :- Representation of plaque

2. **BIOFILM:** A biofilm environment confers certain properties to bacteria that are not seen in the nomadic state, a fact that explains the importance of recognizing dental plaque as a biofilm and not as bacteria in the planktonic state. Some of the distinctive properties of biofilms are discussed and explained below. [4].

a) Structure of Biofilm

Biofilms are composed of micro-colonies of bacterial cells (15-20% by volume) that are non-randomly distributed in a shaped matrix or glycocalyx (75-80% volume). The bacteria in the biofilm cluster together to form sessile, mushroom-shaped colonies. Each micro-colony is an independent community with its own customized living environment [5].

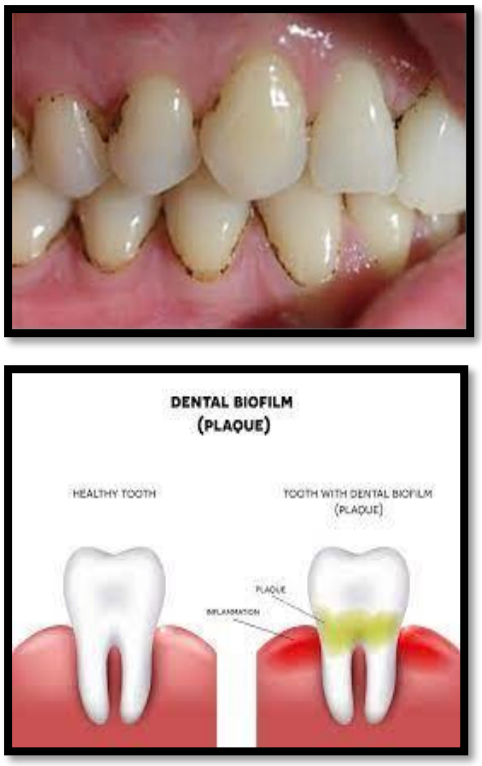


Figure. 03:- Representation of dental biofilm

In the lower levels of most biofilms a dense layer of microbes is bound together in a polysaccharide matrix with other organic and inorganic materials. The successive layer is a loose layer, which is often highly irregular in appearance and may ex tend into the surrounding medium. The fluid layer bordering the biofilm may have a rather"stationary" sub layer and a fluid layer in motion[5]. At low shear forces, the colonies are shaped like towers or mushrooms, while at higher shear forces, the colonies are elongated and capable of rapid oscillation.[4][5][6].

b) Exopolysaccharides-the backbone of the biofilm: Dental biofilm is primarily composed of micro-organisms; micro-organisms exists within an intercellular matrix that consists of organic and inorganic materials derived from saliva, gingival crevicular fluid and bacterial products, which have been given in Table 1. Exopolysaccharides (EPS) are produced by the bacteria in the biofilm and are the major components of the biofilm making up 50-95% of the dry weight. They play a major role in maintaining the integrity of the biofilm and as well as preventing desiccation and attack by harmful agents. In addition, they also bind essential nutrients such as cations to create a local rich environment favoring specific micro-organisms[3].

c) Biofilm formation and contamination of dental unit water: Dental-unit water systems (DUWS) harbor bacterial biofilms, which may serve as a haven for pathogens. The water obtained from dental units via 3-in-1 syringes, air rotors, and low-speed handpieces may be heavily contaminated with micro-organisms and thus may be a potential source of infection for both practice staff and patients. The range of micro-organisms isolated includes both environmental organisms (e.g., Moraxella spp. and Flavobacterium spp.) and opportunistic and true human pathogens (e.g., Pseudomonas, Legionella pneumophila, Mycobacterium spp., and Staphylococcus spp.). The most common cause of DUW contamination is believed to be the formation and subsequent sloughing off ofmicrobial biofilms from the surfaces of tubing within DUWSs.

d) Current challenges and strategies to control biofilm: Dental plaque biofilm cannot be eliminated. However, the pathogenic nature of the dental plaque biofilm can be reduced by reducing the bioburden (total microbial load and different pathogenic isolates within that dental plaque biofilm) and maintaining a normal flora with appropriate oral hygiene methods that include daily brushing, flossing and rinsing with antimicrobial mouthrinse. This can result in the prevention or management of the associated sequelae, including the development of periodontal diseases and possibly the impact of periodontal diseases on specific systemic disorders. When assessing treatment options, an appreciation of the ecology of the oral cavity will enable the enlightened clinician to take a more holistic approach and consider the nutrition, physiology.

e) Mechanism of increased antibiotic resistance in biofilms: Organisms in a Biofilm are 1000-1500 times more resistant to antibiotics than in their planktonic state. The mechanisms of this increased resistance differ from species to species, antibiotic to antibiotic and for biofilms growing in different habitats. This antibiotic resistance in bacteria is thought to be affected by their nutritional status, growth rate, temperature, pH and prior exposure to sub-effective concentrations of antimicrobial agents. Another important mechanism appears to be the slower rate of growth of bacterial species in a biofilm, which makes them less susceptible to bactericidal antibiotics. Biofilm matrix can resist diffusion of antibiotics[8].

3. TARTAR: It is also known as Dental calculus, is a plaque that is hardened (calcified) on the teeth. Calculus are considered as major etiological agents in the initiation and progression of periodontal diseases. Their accumulation and attachment are facilitated by a roughened root surface. The rough calculus surface may not, in itself, induce inflammation in the adjacent periodontal tissues, but may serve as an ideal substrate for subgingival microbial colonization.[9].

a) Causes- related anti- infective therapy aims to eliminate the microbial biofilm and calcified deposits from diseased root surface through root debridement.

Figure 05 :- Representation of Tartar

b) Composition of calculus

Dental calculus is calcified mineralized plaque composed primarily of calcium phosphate mineral salts covered by an unmineralized bacterial layer. Calculus can be classified as supragingival calculus, which is located coronal to the gingiva and is easily visible, or sugingival calculus[10].

Calculus consist of both inorganic and organic components.

Inorganic components (70-90%)

Principal elements :-

- Calcium – 39%
- Phosphorous – 19%
- Carbon dioxide – 19%
- Magnesium – 0.8%
- Trace amount of Na, Ba, Zn, Str, Br, Cu, Ag, Al, Fe, FI.

Components :-

- Calcium phosphate – 75.9%
- Calcium carbonate – 3.1%
- Magnesium phosphate traces and other metals

Crystal forms :-

- Hydroxyapatite (HA) – 58%
- Octa calcium phosphate (OCP) – 21%
- Magnesium whitelockite (MWL) – 12%
- Brushite (BS) – 9%

- Supragingival calculus – HA and OCP are detected most frequently
- Subgingival calculus – MWL is present in high concentration and same HA content
- Mandibular anterior region – BS is more common
- Posterior areas – MWL is more common.[10]

c) Dental Calculus (Tartar) formation:

The formation of calculus is always preceded by the development of a bacterial biofilm, which constitutes the organic matrix for subsequent plaque calcification. Dental calculus is bacterial plaque that has undergone mineralization due to the precipitation of mineral salts, although not all the plaque becomes calcified. Saliva is the mineral source for calcification of supragingival calculus, while the gingival crevicular fluid provides minerals for the mineralization of subgingival deposits [11].

Calculus detection system

i) Perioscopy:

Currently, perioscopy is the only available method for detecting calculus (Perioscopy Inc., Oakland, CA, USA). Based on the principle of medical endoscopy, perioscopy is a minimally invasive approach that was introduced in the year 2000. The perioscope is a miniature periodontal endoscope. When inserted into the periodontal pocket, it images the subgingival root surface, tooth surface, and calculus. Components of the perioscope include fiber-optic bundles bound by multiple illumination fibers, a light source, and an irrigation system. Perioscopic images can be viewed on a monitor in real time, captured, and saved in computer files [12].

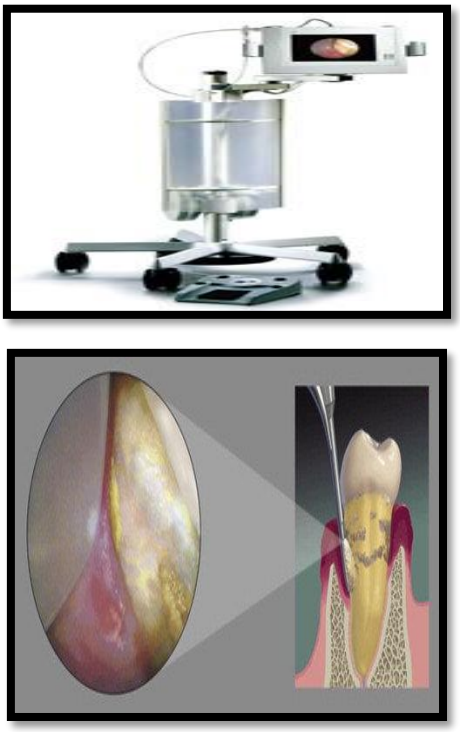


Figure 06:-. Perioscopy system visualization of subgingival calculus using perioscopy system.

ii) Optical spectrometry

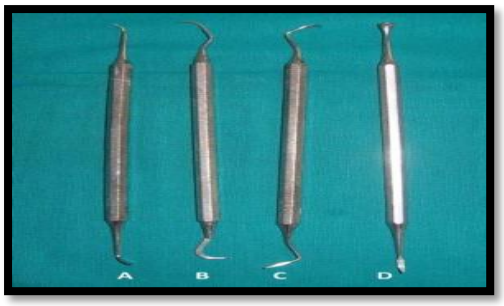
The Detec-Tar (Dentsply Professional, York, PA, USA) calculus detection device utilizes light-emitting diode and fiber-optic technologies. An optical fiber in the device recognizes the characteristic spectral signals of calculus caused by the absorption, reflection, and diffraction of red light. Advantages of the device include its portability and emission of audible and luminous signals upon calculus detection.[12]

iii) **Autofluorescence-based technology:**Calculus contains various non-metals and metals, such as porphyrins and chromatophores. Due to their differences in composition, calculus and teeth fluoresce at different wavelength ranges (628–685 nm and 477–497 nm, respectively). Diagnodent is a commercially available calculus detection device. The InGaAsP-based red laser diode used in Diagnodent emits a wavelength of 655 nm through an optical fiber, causing fluorescence of calculus.[12].

d) Calculus removal system

i) Mechanical debridement

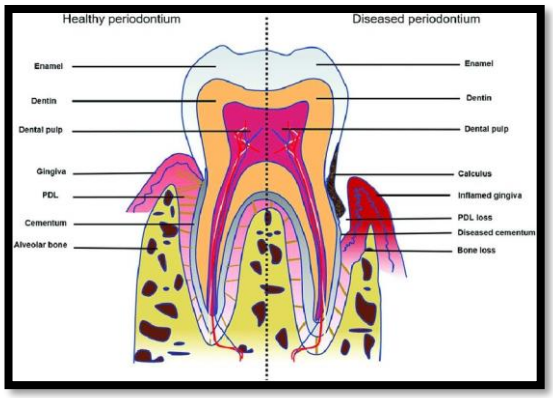
Conventional non-surgical therapy is considered to be the cornerstone of periodontal treatment. Its effectiveness is based on reducing the bacterial load from the periodontal pocket and removing hard deposits (e.g., calculus) that can aggravate the infection. Studies have concluded that the effectiveness of different treatment modalities in thorough calculus removal from root surfaces is impossible [11][12].



a) Hand instruments and
b) ultrasonic instrument

Figure 07:- Mechanical tool used for removal of tartar

a) Hand instruments:



Different hand instruments are used for non-surgical periodontal therapy. Scalers and curettes have the most access to subgingival calculus. In one study, ultrasonic instrumentation consumed less time for calculus removal than instrumentation by gracey curettes. Another found that there was no microscopic difference between the Cavitron ultrasonic scaler and Gracey curettes.[12]

b) Ultrasonic instrument

Ultrasonic instruments are the principle treatment modality for removing plaque and calculus. These power-driven instruments oscillate at very high speeds, causing micro vibrations that aid in calculus and subgingival plaque removal. Two different mechanisms are used to create these oscillations of the ultrasonic tip. Comparisons of magnetostrictive, piezoelectric, and hand instruments have had inconclusive results found that the piezoelectric system was more efficient in calculus removal compared to magnetostrictive and hand instrumentation.

ii) Vector system

The Vector system was specially designed to treat periodontal tissues aggressively while reducing the amount of tooth surface loss. The uniqueness of this system lies in the oscillations produced by the ultrasonic tip. The Vector system is recommended for use in conjunction with irrigation fluids containing hydroxyapatite or silicon carbide. Although this system removes calculus efficiently, the efficiency of removal is dependent on the abrasive fluid used. Another advantage of this system is **Figure. 08 :- Representation of healthy periodontium and diseased periodontium.**

Figure. 08 :- Representation of healthy periodontium and diseased periodontium.

iii) Combined detection and removal device

a) Ultrasonic technology

Ultrasonic calculus detection technology is

based on conventional piezo-driven ultrasonic scaling. Perioscan (Sirona, Germany) is an ultrasonic device that works on acoustic principles, similar to tapping a

glass surface with a hard substance and analyzing the resulting sound to identify cracks in the glass. The tip of the ultrasonic insert in Perioscan oscillates continuously. Different voltages are produced depending on the oscillation that, in turn, depends on the hardness of the surface encountered by the Perioscan can differentiate calculus from healthy root surfaces according to the inherent difference in hardness between the materials.

b) Laser-based technology

LASER is an acronym for Light Amplification by Stimulated Emission of Radiation. Maiman introduced the first laser device in 1960. The advantage of laser use is that it can concentrate light energy at a single point to target the tissues. In 1965, reported the first use of ruby lasers for calculus removal from the tooth surface. Since then, numerous types of lasers have been used in the field of dentistry. Which laser is used depends on the frequency at which the laser can cut hard or soft tissues.[12]

4. **PERIODONTITIS:** Periodontitis is defined as an inflammatory disease of supporting tissues of teeth caused by specific Microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal Ligament and alveolar bone with periodontal pocket Formation, gingival recession or both. The word periodontium comes from the Greek Terms, ‘peri-’ which means “around,” and ‘odons’, which means “tooth.” Periodontium Includes the tissues that surround and support [14].

i) STAGES

There are mainly four stages in periodontal diseases which Includes different clinical sign & symptoms and radiological Screening are given as follows:

a) Gingivitis

It is the only stage when periodontitis can be reversible. At This stage the plaque formation around teeth occurs. There are mainly few painless symptoms seen at this stage such as bad breath, swollen reddish gums and bleeding while Brushing and flossing. It can be reversed by maintaining Good oral hygiene and regular checkups.

b) Early stage

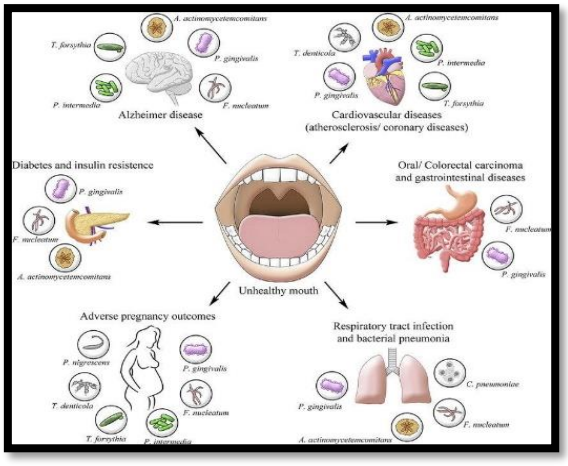
It is the second stage of periodontal disease. It is manageable by oral hygiene but not reversible. At this stage, the Infection starts spreading to surrounding tissues and starts Degrading it. Symptoms at this stage include inflammation of gums, severe bad breath, and bleeding during brushing or flossing, spacing between teeth become evident and will gradually increase. Here, 3-4 mm clinical attachment loss.

c) Moderate stage

Like second stage moderate stage cannot be reversed. Same Symptoms as moderate stage occurs but space between teeth and recessions of gums are more evident. Treatment like deep cleaning, scaling and flap surgeries can be done at this stage. Around 5 mm or more clinical attachment loss, 33% of Tooth loss of four teeth or less, with complex issues such as Probing depth 6 mm or more, Class II-III furcation, and/or Moderate ridge defects.

d) Advanced stage

Last stage of periodontal disease; wherein 50-90% of loss of periodontal tissues occurs. Also other symptoms like Swollen gums that ooze of pus, cold sensitivity, loosening of teeth, painful chewing and severe halitosis occurs. If Left untreated it causes more spaces or gaps between Teeth and gums, gum recession, patient needling dentures, and other health problems that can be worst. Secondary Occlusal trauma, severe ridge defects, bite Collapse, pathologic migration of teeth, less than 20 Remaining teeth (10 opposing pairs) seen.[15].



ii) Diagnosis for the periodontitis

Diagnosis of periodontal disease has been done by following Investigations are given as:

a) Radiograph

a. Periapical radiograph, Bitewing radiographs, Panoramic X-ray or combination of all these isUsed to diagnose the prognosis of patients.
b. Radiograph provides detailed information about Patient's tooth condition. The degree of bone loss and Depth of periodontal pocket can be assessed by using Radiograph and also pattern and amount of bone loss.

b) Vitality test

a. Electric Pulp tester or Thermal stimuli is used to Diagnose the pulp vitality of tooth.

c) Other tests

a. Full hematological screening.
b. Blood glucose level test.
c. INR or microbial plaque sampling [18].

iv) Periodontitis and systemic diseases:- Periodontitis is a caustic inflammation of tooth-supporting Structures that involves specific microorganisms that result In the formation of periodontal pocket formation, gingival Recession and bone destruction. The host response in Periodontal disease involves an array of events in innate And adaptive immunity.

Figure 9 :- Schematic representation of different systemic diseases and their association with oral pathogens.

a) Cardiovascular disease

Cardiovascular disease (CVD) characterized the Accumulation of inflammatory plaques that result in Thromboses and myocardial infarction. According to Noack C – reactive protein, levels are high in patients With periodontitis, which is an independent risk factor for CVD.

b) Diabetes mellitus

Diabetes Mellitus (DM) is a metabolic disorder with Chronic hyperglycemias accompanied by alterations of Carbohydrate, protein, and lipid metabolisms. DM Predisposes to periodontal destruction but in several Studies have identified that periodontal disease is Responsible for poor glycemic control.

c) Pulmonary infections

It recently recognized by various researchers that oral Infection, especially periodontitis affects the course and Pathogenesis for a number of systemic diseases including Pulmonary infections.

d) Alzheimer Disease

Alzheimer's disease (AD) is a fatal neurodegenerative Disorder associated with inflammation including Aβ-Amyloid 1-42 peptide (Aβ42), hyper phosphorylated tau Protein (P-Tau) [30].

5. CRACKED TEETH: The severity and consequences of the fracture can range from minor, needing no treatment at all, to severe, resulting in root canal therapy (RCT), or even tooth loss. One form of tooth fracture, cracked tooth syndrome (CTS), often presents a diagnostic conundrum to the dentist and a painful, frustrating event to the patient. A patient survey of over 14,000 molars by the Practice-based Research in Oral Health network from the Oregon Health and Science University revealed the virtually ubiquitous presence of cracks in these teeth [21].

Figure. 10 :- Representation of occlusal view of teeth and fracture teeth.

There is a current need for an evidence-based set of guidelines as to how to prevent, diagnose, and treat cracks in teeth. The purpose of this article was to review the literature to establish what evidence exists regarding the risk factors for cracked teeth and their prevention, diagnosis, and treatment.[21].

i) Classification and definition of tooth fracture: The American Association of Endodontists (AAE) has identified five types of cracks in teeth.[6] Whereas it is important as a clinician to be familiar with all crack forms as an aide in diagnosis, it is often difficult to distinguish clinically among the various types of cracks. The first fracture and the most benign is a craze line. *Craze lines* are visible fractures that only involve enamel. A *cracked tooth* is defined by the AAE as a crack extending from the occlusal surface of the tooth apically without separation

of the two segments. A *split tooth* is a crack that extends through both marginal ridges usually in a mesiodistal direction, splitting the tooth completely into two separate segments. *Vertical root fractures* originate in the root, and are generally complete, although they may be incomplete.

ii) Symptoms of a cracked tooth

Not every cracked tooth will produce symptoms. But when it does, common ones include:

- Pain when chewing or biting, especially when you release the bite.
- Sensitivity to heat, cold, or sweetness.
- Pain that comes and goes, but is rarely continuous.
- Swelling of the gum around the affected tooth.

iii) Diagnosis: CTS (Cracked tooth syndrome) has been described in the literature as a difficult diagnostic and treatment problem. The diagnosis of CTS has been based in the past exclusively on tooth symptomatology localized pain during chewing or biting, unexplained sensitivity to cold, and pain on release of pressure. Besides the symptomatology described by the patient, the diagnosis of CTS can be verified through a succession of procedures or tests performed by the clinician.

iv) Treatment

Conventional treatments for CTS reported in the literature involve some form of protective cuspal coverage restoration. The specific treatment protocol suggested is to remove any existing restoration, evaluate the health of the pulp and remaining coronal tooth structure,

Figure. 12 :- Cracked tongue due to dry mouth

and if indicated, restore with a full crown. Once symptoms have resolved and the tooth has been deemed restorable, a buildup and full coverage restoration is placed. Other authors advocate occlusal adjustment in addition to crown placement.

Figure. 11:- Preview of cracked teeth

DRY MOUTH: Dry mouth is also known as Xerostomia. Xerostomia is extremely common in the UK and affects about 13% of the population. Subjective xerostomia is the term used to describe the feeling of a dry mouth when there is plentiful saliva and the salivary glands are functioning as normal. Objective xerostomia or hypersalivation are the terms used when there is decreased flow of saliva caused by failure of the saliva glands to function as normal. [26] On average a person can produce 500 ml of saliva a 24 hour period. Saliva production increases considerably during eating producing on average 2 ml/min and reduces considerably during the sleeping phase producing on average 0.10 ml/min [26]. Dry Mouth all or most of the time, it can be uncomfortable And can lead to more serious health problems or indicate That a more serious medical condition may exist. That's because saliva does more than just keep the mouth wet it helps digest food, protects teeth from decay, prevents Infection by controlling bacteria in the mouth, and Makes it possible for you to chew and swallow.

In addition to making it difficult to chew, swallow, or speak, a low saliva flow can cause the following:

- Dry, cracked lips;

- A rough tongue;

- Bad breath;

- Infections on the surface of the tongue, cheeks, or Gums.[27]

i) Symptoms of dry mouth

- Patients with their own teeth can use saliva preparations containing fluoride.
- Pilocarpine (for systemic saliva stimulation) is sometimes used after radiotherapy and to treat the symptoms of sjogren's syndrome, but it can have considerable side effects.
- Lemon juice should be avoided as it depletes the salivary Glands of saliva.
- Dry mouth is associated with dental caries, so referral to a Dentist may be required.[28]

ii) Causes of dry mouth

There are many causes of dry mouth.Drug-induced xerostomia is The most common cause, and there are More than 1,800 medicines that have Dry mouth as a listed side effect.

The most common medicines include:

• Antidepressants (Tricyclic Antidepressants, monoamine oxidases and selective serotonin reuptake Inhibitors).

• Antihistamines.

• Antihypertensive (ACE inhibitors, Eg. (Ramipril, beta blocker) Eg. (Atenolol, propranolol).

• Diuretics Eg.(Bendroflumethaizide).

• Anti- Reflux (proton pump inhibitors Eg. Omeprazole).

• Anti-cholinergics (Atropine).

• Benzodiazepines (Diazepam).

• Analgesics (Opiates).[27][28]

iii) Prevention of dry mouth

- Chewing sugar-free gum or sucking on sugar-free Hard candies to stimulate salivary flow;

-Sucking on ice chips;

-Sipping water with meals to aid in chewing and Swallowing food;

-Using alcohol-free mouth rinse;

-Avoiding carbonated drinks (like soda), caffeine,Tobacco, and alcohol.

iv) Treatment of dry mouth

Several mouth moisteners in the form of salivary substitutes Or artificial saliva are available as rinses, aerosols, toothpastes, Mouthwashes, lozenges or chewing gums Worldwide.

Most of the currently available preparations to moisten the Mouth contain either

carboxymethylcellulose or mucins. Although preparations based on hydroxyethylcellulose,

polyglycerylmethacrylate, hydroxyprophylmethylcellulose, glycerol, canola oil, olive oil, and linseed extract are also reported to be useful.

6. **TOOTH DECAY:** Tooth decay, also known as cavities or caries, is the breakdown of teeth due to acids produced by bacteria. The cavities may be a number of different colors from yellow to black. Symptoms may include pain and difficulty with eating.

Figure 13 :-Representation of tooth decay.

:Signs and symptoms

The earliest sign of a new carious lesion is the appearance of a chalky white spot on the surface of the tooth, indicating an area of demineralization of enamel. This is referred to as a white spot lesion, an incipient carious lesion or a "micro-cavity". As the lesion continues to demineralize, it can turn brown .but will eventually turn into a cavitation ("cavity")

i) :Cause

Tooth decay is caused by biofilm (dental plaque) lying on the teeth and maturing to become cariogenic (causing decay). Certain bacteria in the biofilm produce acid in the presence of fermentable carbohydrates such as sucrose, fructose, and .glucose

ii) :Diagnosis

Primary diagnosis involves inspection of all visible tooth surfaces using a good light source, dental mirror and explorer. Dental radiographs (X-rays) may show dental caries before it is otherwise .visible, in particular caries between the teeth

:iv) Prevention

Oral hygiene .1

The primary approach to dental hygiene care consists of tooth-brushing and flossing. The purpose of oral hygiene is to remove and prevent the .formation of plaque or dental biofilm

Dietary modification .2

People who eat more free sugars get more cavities, with cavities increasing exponentially with increasing sugar intake. In one population, in Nigeria, where sugar consumption was about day, only two percent of the population, of any /2g .age, had had a cavity

Other measures .3

The use of dental sealants is a means of prevention.[120] A sealant is a thin plastic-like coating applied to the chewing surfaces of the molars to prevent food from being trapped inside .pits and fissures

iii) Treatment

Most importantly, whether the carious lesion is cavitated or non-cavitated dictates the management. Clinical assessment of whether the lesion is active or arrested is also important. Noncavitated lesions can be arrested and remineralization can occur under the right conditions. More recently, Immunoglobulin Y specific to Streptococcus mutans has been used to suppress growth of S mutans.[134] Such management of a carious lesion is termed "non-operative" since no drilling is carried out on the tooth. Non-operative treatment requires excellent understanding and motivation from the .individual, otherwise the decay will continue]30[

CHIPPED TEETH: Enamel or the tough, outer covering of your teeth is one of the strongest substances in your body. But it does have it limits. A forceful blow or excessive wear and tear can cause teeth to chip. The result is a jagged tooth .surface that can be sharp, tender, and disfiguring

Figure. 14 :- representation of chipped teeth.

Causes of chipped teeth

Teeth can chip for any number of reasons. Common :causes include

Biting down on hard substances, like ice or hard .1 candy

falls or car accident.2

Playing contact sports without a mouth guard .3

Grinding your teeth when you sleep .4

ii) Symptoms of a chipped tooth

feeling a jagged surface when you run your tongue .1 over your teeth

.irritation of the gum around the chipped tooth .2

irritation of your tongue from “catching” it on the .3 tooth’s uneven and rough edge

pain from pressure on the tooth when biting, .4 which can be intense if the chip is near to or exposes .the nerves of the tooth

iii) Diagnosing a chipped tooth

Your dentist can make a diagnosis of a chipped tooth via visible inspection of your mouth. They’ll also take into account your symptoms and ask you .about events that may have caused the chipping

iv) Chipped tooth treatment

Tooth reattachment .1

If you still have the tooth fragment that broke off, place it in a glass of milk to keep it moist. The calcium will help keep it alive. If you don’t have milk tuck it into your gum, making sure not to .swallow it

Bonding .2

A composite resin (plastic) material or porcelain (layers of ceramic) is cemented to the surface of .your tooth and shaped to its form

Dental onlays .3

If the chip only affects a part of your tooth, your dentist may suggest a dental onlay, which is often applied to the surface of molars. You may receive anesthesia so the dentist can work on your teeth to make sure there is room for an onlay.]31[

7. **CROOKED TOOTH:** Crooked teeth may effect not just your appearance, but also the quality of your life. Crowded, twisted or overlapped teeth may interfere with your chewing ability, can cause extensive wear to your teeth, and can be hard to clean. This can

lead to tooth decay, cracked teeth, chronic headaches, and other health problems.

Figure. 15:- Representation of crooked teeth.

i) Causes

There are several reasons your teeth may grow in crooked. Some of these causes include:

- Genetics, such as inheriting a small mouth or a misaligned jaw, is the most frequent cause of crooked teeth.
- Injury, such as a hit to the face, can lead to displacement of teeth.

- Illness, like osteoporosis that leads to deterioration of bone supporting the teeth and autoimmune disorders that hinder saliva production, can result in tooth loss.
- Bad habits, like thumb-sucking, tongue thrusting, mouth breathing or extensive use of a pacifier.
- Early loss of baby teeth can cause the permanent teeth to grow in slanted rather than straight.

ii) Diagnosis

- Your dentist can suggest that you see a specialist called an orthodontic surgeon. Your mouth, teeth, and jaw will be examined and your bite will be evaluated. The orthodontist will probably take X-rays, photographs of your face, and impressions of your teeth to determine if and what type of treatment is necessary.

- Special cephalometry or panoramic x-rays show the relationship of the teeth to the jaw and the jaw to the head.

iii) Treatment

1) In visalign aligners are a series of clear plastic aligners made from a mold of your teeth and worn over the teeth to gradually change their position. These custom-made, clear, removable aligners offer a more convenient and comfortable treatment to standard braces.

2) Dental Crowns. If your teeth are broken or severely decayed, dental crowns can help restore the natural appearance and function of your teeth.

3) Dental Veneers. Veneers consist of a very thin layer of porcelain that is placed over the top of your natural tooth to disguise any imperfections.

4) Braces: Braces are a type of orthodontic appliance that comprises braces, bands, and wires. They apply constant pressure on the jaw for an extended period, causing it to adapt to pressure in a certain direction, causing it to move to the desired position.

10. MOUTH SORES AND CANKER SORES: Mouth sores are painful lesions that form in your oral soft tissues. They may appear on your lips, gums, tongue, cheeks, the floor of your mouth or the roof of your mouth. Canker sores are small shallow ulcers that occur in the lining of the mouth. The medical term for canker sores is “aphthous ulcers.”

Figure. 16 :- Representation of a) mouth sore and b) canker sore.

i) Symptoms

Exact symptoms can vary depending on the type of mouth sore you have. In most cases, the lesions will cause redness, pain and inflammation.

- Tingling or burning sensations.
- Difficulty eating (especially spicy or salty foods).
- Blistering.
- Bleeding.
- Ulceration.
- Dysphagia (difficulty swallowing).
- Sores that are larger than 1/2 inch in diameter

ii) Causes

There are a number of things that can lead to mouth sores. Causes range from common injuries to serious health conditions. Common mouth sore causes include:

- Biting your lip, tongue or cheek.
- Irritation from braces or other orthodontic devices.
- Brushing your teeth too hard, or using a hard-bristled toothbrush.
- Using tobacco products.
- Hormone changes.
- Stress.
- Burning your mouth on hot food.

Some cases of complex canker sores are seen in patients with diseases of the immune system. These diseases include lupus, Behcet's disease, inflammatory bowel diseases (including celiac disease, ulcerative colitis and Crohn's disease) and AIDS.

iii) Treatment

If you see a healthcare professional for your mouth sores, they may prescribe a pain medication, anti-inflammatory drug, or steroid gel. If your mouth sores are a result of a viral, bacterial, or fungal infection, your healthcare professional might provide a medication to treat the infection. In cases of mouth cancer, a biopsy will be taken first. Afterward, you may need surgery or chemotherapy.

CONCLUSION

Dental and oral health is an essential part of our overall health and well- being . There has been known direct and indirect impact on overall general health due to oral health. Poor oral hygiene cause many problem like tooth decay , tartar , peridontities , and so on. The screening and examination of disease has been down by, various methods.

There are various surgical and non- surgical treatment are available prevention is attained by daily maintenance of oral hygiene , seeing a dentist regularly for a checkup and exam is the best way to catch a problem before it gets worse.

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