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Dentistry

A REVIEW: ORAL CARE IN THE ELDERLY

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ABSTRACT

Dentists and patient care staff have to adapt to the growing and changing group of elderly patients and develop new concepts for their oral care. In general, dental care for elderly and very elderly people should be according to their daily lives. One of the most important conditions for healthy aging is to preserve a natural, healthy and functional oral and dental structure as much as possible. Poor oral hygiene can lead to tooth decay, gingivitis, periodontitis, tooth loss, halitosis (bad breath), fungal infections, dry mouth and gum disease. These problems impair the elderly person's functions such as chewing, speaking, swallowing and tasting and may affect their nutritional habits. Good mechanical and chemical oral hygiene can overcome these problems, especially prevent pneumonia, which can develop due to poor oral hygiene. In the elderly, oral motivation and dental plaque control are very important. The use of a toothbrush is the most important factor for oral hygiene. The use of fluoride toothpaste is essential for daily oral hygiene. The correct use of dental floss and interdental brushes should be demonstrated by health professionals. In addition, solutions containing antiseptics such as chlorhexidine or triclosan support oral care by reducing the amount of bacteria in the mouth. Daily cleaning of prostheses is very important for oral hygiene. This article is for the elderly oral dental health care and recommendations will be discussed.

INTRODUCTION

The World Health Organization defines people 65 years of age and older as "elderly" [1]. One of the most important criteria for healthy aging is the protection of a natural, healthy and functional Oral-dental structure as much as possible. Appropriate oral hygiene is a basic and effective prophylactic measure against caries and periodontal disease [2].

Age-related physical changes and functional insufficiencies significantly affect the ability to manipulate. In the elderly, this situation leads to deterioration of oral hygiene. Other factors that may have a negative impact on oral and dental health include general health problems, arthritis, previous cerebrovascular attack, cancer treatments, dementia, mental problems, visual impairments, tissue injuries due to accidents and limited mobility can be listed as [3]. Oral and dental health may be adversely affected due to the use of many medications in diseases such as asthma, hypertension and diabetes, which are common in elderly individuals [4].

A relationship has been found between poor oral health and general health problems, these problems may directly affect the quality of life and lifestyle of older people [5]. Decreasing immune response with aging in the elderly who have poor oral hygiene, can predispose to the development of certain infections and lead to various medical problems. For example, dental problems have been reported to be one of the most common risk factors for pneumonia in care homes [6]. Oral secretions and their bacterial aspiration is increasingly acknowledged as an important factor in the development of pneumonia [7].

The most common problems related to oral and dental health in the elderly are complete edentulism, tooth loss, tooth wear, periodontal diseases due to dental plaque, dental caries, gingival recession and dry mouth. These problems may lead to disruption of the elderly's functions such as chewing, speaking, swallowing, tasting, and may cause pain and affect their dietary habits [3]. For these reasons, care personnel should be aware of the factors that cause inadequate oral and dental hygiene and their consequences.

The sharp increase in the number of elderly people in need of care in developed countries has resulted in a great need for improved oral care. Because of this, the demand for dentists and trained care staff has increased in recent years [8].

It is also important to learn and teach oral care habits of elderly individuals. Dentists and Dental Hygienists can help older people learn proper oral care habits, suggest suitable dental care products to protect the oral and dental health of these people [9]. As a result of improved oral hygiene and the widespread use of professional dental and prosthetic cleaning, tooth loss is occurring at an increasingly older age [8]. According to 2004 data from the United States of America, the rate of toothlessness in the elderly has decreased from 50% to 23% in the last 30 years. As a result of the decrease in the rate of toothlessness in the elderly, the utilization rates of dental health services have increased [10]. Peltola et al. (2007) reported that informing total prosthesis patients about prosthesis hygiene was effective in increasing prosthesis cleaning [11].

The objective of this review is to present the oral and dental health care and recommendations for the elderly together with the current literature.

GENERAL ASPECTS OF DENTAL CARE IN ELDERLY PATIENTS

In order to maintain oral health, bacterial plaque must be removed. Bacterial biofilm, a microbial community that forms a film-like layer on surfaces, is a combination of many types of bacteria. This community is heterogeneous, consisting not only of bacteria, but also of other microorganisms (fungi, viruses, protozoa) [12].

Bacterial plaque in the elderly can lead to serious health problems such as gum disease, tooth loss, bad breath, digestive problems, bacterial endocarditis, aspiration pneumonia, chronic obstructive pulmonary disease, general infections of the respiratory tract, diabetes and stroke [13-15]. Because of the importance of the problems that bacterial plaque can cause, it is necessary to perform daily preventive

procedures as well as professional plaque control. Oral and dental health of elderly individuals can be protected with the following recommendations:

Dental Motivasyon

Care education and motivation is a very important factor to maintain oral dental health habits for a lifetime. First of all, patients should be explained very well what dental biofilm is, what problems it can cause and what we are targeting. What matter is to get patients into a habit of a standardized routine of brushing. It is also very important to train according to the patient's condition. For example, when patients switch to prosthetics, their individual oral care needs also change. These patients should be given motivation suitable for the new prosthesis instead of routine oral care recommendations [16].

Bacterial Plaque Control

Due to the importance of the problems that dental plaque can cause, preventative daily procedures should be carried out in addition to professional plaque control. Plaque control is managed by mechanical (toothbrushes, dental floss, interdental brushes, professional teeth cleaning, root planing procedures, chewing gums) and chemical (mouthwashes, toothpastes, chewing gums) oral hygiene procedures. Mechanical plaque control is always fundamental. Chemical plaque control is used as a support when mechanical control is not sufficient [3]. Careful daily cleaning of bacterial biofilm present in the oral cavity and on dentures helps to contribute to good oral and general health [17].

The Use Of Disclosing Solution In Plaque Control

The Disclosing solution is a solution which selectively stains all soft debris, pellicle and bacterial plaque on the teeth. Erythrocin was the first dyestuff to be used in dentistry for this purpose, preferably on 1-2 day-old plaque. In addition, other disclosing agents include malachite green, brilliant blue and fluorescein. The last two solutions better expose older plaque (3 days or more), which is beneficial as older plaque is more structured and includes more anaerobes, and therefore has more cariogenic and periodontopathogenic potential. In principle, the patient should be motivated to remove the entire plaque. Erythrocin is a convenient and inexpensive material for home use. Schafer et al investigated whether oral care feedback appliances, such as disclosing tablets, would result in better plaque cleaning. The researchers found that compared to brushing alone, the use of an auxiliary disclosing agent led to significantly greater plaque removal ($p < 0.05$) and increased brushing time by 20%. They reported that the use of disclosing agents could increase plaque removal and motivation for tooth brushing [18].

Tooth Brushing

Brushing teeth twice a day is an effective way to maintain oral and dental health. It is important to choose the right toothbrush, brushing technique and appropriate toothpaste. Soft toothbrush bristles will prevent damage to the tooth enamel. As older people may have reduced dexterity, it is recommended that they use an easy-to-grip toothbrush. For many elderly people, an electric toothbrush is a good alternative. Especially for hard-to-reach areas, the elderly and people who cannot use their hands comfortably, the electric toothbrush provides practicality [12].

Dental Floss And Interdental Brush

Studies have shown that gingivitis appears to start in the interdental space rather than lingual or buccal [19]. In the elderly, the gaps between the teeth are enlarged. Since the interdental spaces formed as a result of the loss of gum tissue can cause food accumulation, cleaning of these areas should be done with an interdental brush and/or dental floss. The positive effect of dental floss and interdental brushes in preventing proximal caries and improving periodontal health is indisputable [20]. Interdental brushes have the advantage

of also removing subgingival plaque to a depth of 2.0 to 2.5 mm [21]. Patients tend to avoid dental flossing because they perceive it as time-consuming, uncomfortable and technically difficult. Patient education is therefore key to encouraging regular flossing [22].

Toothpaste

The toothpaste helps with the mechanical removal of dental plaque. Thanks to its components, it strengthens tooth enamel, prevents the formation of caries and helps protect gum health. High fluoride toothpaste was found to be significantly more effective in controlling root caries and promoting remineralization [23].

Tongue Scrapers

It is also recommended to brush the tongue after brushing the teeth [24]. Massler et al. reported that the tongue develops a thick white mucoid coating after breakfast and that regular tongue brushing should be practiced especially in the elderly [25]. High levels of volatile sulfur compounds, especially those originating in bacterial plaque on the dorsum of the tongue, are one of the most important causes of halitosis [26]. After examining the patient with the complaint of halitosis, if the patient has a tongue-related problem, tongue scraping should be taught interactively.

Adjunctive Chemotherapeutic Agents

Chemical antiplaque agents have been employed in both the prevention and treatment of periodontal disease due to their association with bacterial plaque, which is linked to the onset of chronic gingivitis and the advancement of chronic periodontitis. Chlorhexidine and triclosan are among the most frequently utilized chemical antiplaque agents. To inhibit the formation of bacterial plaque and thereby prevent or treat gingivitis, chemical plaque control can be achieved through the use of mouth rinses such as chlorhexidine [27].

Mouth Rinses And Gargles

Mouth rinses and gargles are devices that deliver a combination of air and water with force. They assist in removing debris and attachments from hard-to-reach areas that cannot be reached by mechanical cleaning methods such as brushing or flossing. Mouth rinses are refreshing, have pleasant aromas, and can be used as a complement to regular tooth brushing and flossing. With their antiseptic properties, they aid in preventing tooth decay and periodontal disease. For elderly individuals who may have difficulty effectively performing mechanical plaque control, mouth rinses can help remove food debris, temporarily eliminate bad breath, reduce bacterial count, leave a pleasant taste in the mouth, and assist in treating minor oral infections. In areas with severe inflammation, chlorhexidine solution can be added to mouth rinses. This can be particularly recommended as an alternative for patients with dental prosthetics and implants [28].

Palliative Measures

To address the underlying cause of dry mouth (xerostomia), such as medications or diabetes, and to alleviate dryness, it is important to take certain measures. These include avoiding dry heat environments, dry foods, drugs, alcohol, and smoking. Additionally, certain conditions or activities can contribute to dryness and should be taken into consideration. Regular moisturizing of the mouth can be achieved by consuming small amounts of water, using lip balm, or applying a small amount of olive oil [29]. To prevent or alleviate dry mouth in the elderly, it is advisable to increase water intake. Avoiding tobacco products is also crucial in maintaining oral health. Moisturizing mouthwashes can be used to provide relief, and if necessary, the dentist can provide information about medications [30].

Chewing gum

Chewing gum has potential benefits for oral and dental

health. Gum helps to mechanically remove food debris that gets stuck between teeth. This can protect against tooth decay, plaque buildup, and gum diseases [31]. Dry mouth is a common symptom among elderly individuals. Chewing gum stimulates saliva production, which helps prevent the proliferation of harmful bacteria in the mouth. Additionally, producing more saliva in the mouth helps prevent acid foods and drinks from damaging tooth enamel. Gum containing fluoride is recommended for elderly individuals because they stimulate saliva secretion and have the preventive effect of fluoride against tooth decay [3]. Chewing gum can also help prevent bad breath and reduce stress.

Smart Nutrition Habits

Dental health is closely related to proper nutrition. Elderly individuals need to maintain their oral health through a healthy diet. Consuming excessive amounts of sugary and acidic foods can have a negative impact on dental health. Therefore, it is important to limit the consumption of these foods and increase the intake of foods such as milk, cheese, fruits, and vegetables [3,29].

Regular Dentist Visits

It is important for the elderly to visit the dentist or dental hygienist regularly for good oral and dental health. The dentist or dental hygienist helps to remove dental plaque and calculus, early diagnosis of periodontal diseases and dental caries [3].

Dental Calculus Cleaning

Regular dental cleanings to remove tartar (dental calculus) are an important step in maintaining oral health for the elderly. If dental plaque is not removed, it can turn into tartar within a short period of less than two days. As individuals age, their gum tissues may recede, exposing more of the tooth surfaces. In this condition, the tooth surfaces become more susceptible to the buildup of plaque and tartar. Tartar can cause to gum diseases, destruction of the surrounding bone, and tooth loss. Although elderly individuals can reduce tartar formation with daily tooth brushing, they may not be able to prevent it completely. For this reason, it is recommended to scaling twice a year and to clean the areas that cannot be reached with a brush and dental floss [3].

PROSTHETIC CARE IN GERIATRIC PATIENTS

Prosthetic care in geriatric dentistry aims to improve the oral health and function of elderly individuals and to improve their quality of life.

Daily denture cleaning is as important as daily cleaning of natural teeth. Possible infections should be tried to be prevented by cleaning the prostheses correctly and effectively. Providing information about oral care to patients using prostheses on a regular basis ensures the proper use of prostheses and prevents dental health problems. In the dentures that are not cleaned well, discoloration, calculus accumulation in some areas and odour may occur over time [3].

According to a report prepared by Ishikawa and colleagues in 2008; weekly professional cleaning of complete dentures (brushing, cleaning of dentures with a denture brush, ultrasonic irrigation, cleaning of dentures with a denture cleaner, cleaning of oral tissues with a sponge brush) has been reported to significantly reduce multiple oral bacterial infections [32].

Dentists should provide the following recommendations for denture care and safety to elderly individuals using dentures and patient care personnel:

Dentures should be cleaned at least once a day and brushed with an effective, non-abrasive denture cleaner.

Using a denture cleaning brush or soft-bristled toothbrushes,

plaque and food residues on the denture, including the inside and outside of the denture, should be removed under tap water.

The removed dentures should be kept in water. A denture cleaning tablet should be placed in the water to eliminate microorganisms. Dentures should never be kept in hot water. Prostheses should not be soaked in sodium hypochlorite bleach or products containing sodium hypochlorite for more than 10 minutes.

After using denture cleaners, the dentures should be rinsed very well. Prostheses should be brushed again and rinsed thoroughly before being reinserted into the oral cavity. Otherwise, irritations may occur in the mucosa.

It is not recommended to wear dentures all day in order to minimize the risk of denture stomatitis. Prostheses should not be worn for at least 6 hours a day to allow the oral mucosa to rest.

When the dentures are not in the mouth, they should be kept in a container filled with water.

The denture storage container should be cleaned regularly and shaken well before use.

Regular follow-up of patients using dentures by the dentist is very important in terms of maintaining the compatibility, function, aesthetics and comfort of the prosthesis. These controls not only assist in the early detection and treatment of problems related to prosthesis fit, but also make it possible for prostheses to provide maximum benefit for elderly patients [17,33].

CONCLUSIONS

Oral-dental health education should be continued throughout life in order to maintain the oral-dental health of the elderly and it should be explained to the elderly individuals to have regular dental examinations. Bacterial plaque control has an important place in terms of oral and dental health in elderly individuals. Elderly individuals should be evaluated by specialised personnel every six months in terms of oral hygiene habits. It is important to increase the awareness of the interdisciplinary team working in the health care fields and the patient care personnel, who have an important place in this group, through continuous and updated trainings on oral and dental health, nutrition and functional status.

Considering that the changes in the general health status of geriatric patients can occur rapidly, prosthesis planning should be done very carefully. In elderly patients, the available treatment options are often limited and simple, stable and durable prosthetic concepts should be preferred. From this perspective, it should be considered that not only dentists and patients, but also patient relatives, nurses, care personnel and physicians may be involved in the daily dental care of elderly patients.

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