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Oral health system in geriatric person

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Abstract

This article gives a description of geriatric oral health and their correlation with nutrition and life style of aged patients. It reflects on the changes that are bought upon aging in such individuals both systemically and orally. Prosthetic rehabilitation, which is of utmost importance and primary concern of geriatric individuals are enlightened in this article. Simply it gives an idea on geriatric people and their deteriorating health and ways to cope with them.

Keywords: Geriatric, Epidemiological, Diagnosis, Cardiovascular, WHO

Introduction

According to Geriatric dentistry is the shipping of dental care to older adults involving diagnosis, prevention, control and treatment of problems associated with age related diseases. The mouth is referred to as a mirror of overall health, reinforcing that oral fitness is an integral a part of trendy health. In the elderly population negative oral fitness has been taken into consideration a danger factor for trendy fitness problems. Older adults are more liable to oral conditions or diseases due to the growth in chronic conditions and physical/mental disabilities. Thus, the elderly shape an awesome organization in phrases of provision of care.

The epidemiological literature on oral health in the elderly is not very encouraging, and it indicates profound imbalances among countries and regions and as a function of institutionalization.[1]

According to the WHO, the global population is increasing at the annual rate of 1.7%, while the population of those over 65 years is increasing at a rate of 2.5%. Both the developed, as well as the lesser-developed countries, are expected to experience significant shifts in the age distribution of the population by 2050. Dental health is often neglected among the elderly because of the numerous comorbidities in this population, such as cardiovascular diseases.

However, dental health influences general health and quality of life by impacting both the general health and

the psychological state of the individual. The present review highlights the main dental comorbidities in the elderly population, their impact on the quality of life, the barriers towards access to dental care in the elderly and methods to improve their dental health. Information related to dental care and its importance must be provided both to older individuals and their caregivers in order to detect dental pathology and treat it adequately. Ensuring dental health involves the whole society of elders, caregivers, dental care providers, the public sector, health policymakers, and the private sector.[2]

Systemic Diseases and Its Dental Relation

Most common diseases seen in elderly patients are cardiovascular diseases, diabetes, respiratory diseases, blood dyscrasias and other systemic diseases which have relation Most common diseases seen in elderly patients are cardiovascular diseases, diabetes, with dental manifestations. Cardiovascular diseases and uncontrolled diabetes may exacerbate periodontal inflammation. Periodontal disease is likely to develop as a result of depressed immune system and is proposed as the 6th complication of diabetes.

Cardiovascular diseases (CVD) and periodontitis has interred relationship because of common bacteria associated with its pathogenesis. Periodontal inflammation leads to bacteraemia caused by common oral pathogens like Porphyromonas Gingivalis. This microorganism has been isolated from CVD like coronary and carotid atheromas. Therefore, CVD and Periodontitis are interrelated and commonly seen in geriatric patients. Infective endocarditis, other common disease found in elderly patients has association with periodontitis. The bacteria like Viridians streptococci normally found in oral cavity, whereas the bacteria found in dental plaque like Actinobacillus actinomycetemcomitans, Eiknella Corrodens, Fusobacterial Nucleatum and Bacteriodes Forsythus have been isolated from the blood sample of Infective endocarditis patients. Respiratory infections are usually caused by oropharyngeal and periodontal microorganism and bacteria. The main cause of respiratory infections and bacterial pneumonia in adults is aspiration of oropharyngeal bacteria. However, the interrelationship as well as association between RA and periodontitis has not been proved. Diabetes Mellitus (DM) the other most common disease seen in adult and elderly individuals in 21st century. It has been proved and found that the patients suffering from Type 1 and Type 2 DM have distinguished.

Habits and Oral Implications

Elderly patient has habits such as smoking, tobacco pan and beetle nut chewing which leads to formation of precancerous or cancerous lesions. Thus, combining both systemic and oral problems the immunity declines in elderly people. Elderly people in rural areas have habit of tobacco and betel nut chewing as compared to urban population necessitating the need of integrating primary health care with oral care in rural population. Further, financial constraints and lack of family support or of transportation facilities affect access to dental services in later life. Thus the untreated oral cavity has its deleterious effects on comfort, aesthetics, speech, mastication and consequently, on quality of life on old age.

Changes in Salivary Glands and Salivary Secretion with Aging

The diminished function of salivary gland is commonly associated with aging. The implications of disordered salivary gland maintenance of oral health. The presence of saliva protects the oral cavity the upper airway and

digestive tract and facilitates numerous sensorimotor phenomena. The absence of saliva thus has many deleterious consequences to the host. With advancing age, there is an atrophy of acinar tissue, a proliferation of ductal elements and some degenerative changes in the major salivary glands. These alterations tend to occur linearly with increasing age. Minor salivary glands also undergo similar degenerative changes with advancing age. Thus, there is a normal, uniform decrease in the acinar content of salivary gland tissue accompanying the aging process.

However, it is difficult to make a general conclusion about age-related status of fluid output from salivary glands. It appears that decreased salivary flow does not uniformly accompany the aging in healthy persons. These functional observations contrast with morphologic changes seen in aging salivary glands. One explanation that has been hypothesized to account for this is that salivary glands possess a functional reserve capacity, enabling the glands to maintain a constant fluid output throughout the human adult life span. The main oral health problems of old age that is mouth dryness and dental caries have been attributed to the reduced salivary flow.

Nutrition in Old Age and Its Implications for Oral Care

Adequate nutrition is a vital factor in promoting the health and wellbeing of the aged. Inadequate nutrition may contribute to an accelerated physical and mental degeneration. Poor oral health can be a detrimental factor to nutritional status and health. Disorders of the oral cavity have contributed to poor eating habits in the elderly. Loose painful teeth or ill-fitting dentures may result in a reduced desire or ability to eat. A compromised nutritional status, in turn can further undermine the integrity of the oral cavity are closely interrelated, diet and nutrition should be considered as an integral part of the oral health assessment and management of the elderly.

Caloric requirements usually decrease in the elderly because of a decline in the basal metabolic rate, brought on by reduced lean muscle mass and lower exercise levels. Appetite and food intake may also decrease, leading to an insufficient caloric intake and frequently results in insufficient consumption of calcium, iron and zinc more frequently in females. Approximately 8000 kJ (1900 kcal) is the required calorie requirement in 80 years old. An active elderly subject requires a protein intake of 0.97 g/kg of body weight per day. However, patients suffering from tissues necrosis or inflammation shows an increase in protein turnover and requirements. Among the vitamins, most nutrients are recommended in the same amounts for elderly as for younger people. However, certain groups of elderly, such as those homebound, with no access to sunlight, may have insufficient vitamin D and develop osteomalacia. The other important nutrients required by the older individuals are ascorbic acid, iron, and potassium. [4]

Aging and Periodontal Disease

Globally, the percentage of the subjects with community periodontal index scores 4 (deep pockets) ranges from approximately 5-70% among older people.9 Periodontal diseases are among the most prevalent chronic conditions in dentate older populations. Several epidemiological surveys have found that the prevalence and severity of periodontal diseases increase with age.

Periodontal disease in the elderly does not appear to be specific disease but the result of a chronic adult periodontitis since adulthood although age-related changes have been documented in the periodontium of elders, these changes do not appear to be the cause of periodontal disease in the elderly. Enhanced severity of

periodontal diseases with age has been related to the length of time the periodontal tissues have been exposed to the dentogingival bacterial plaque and is considered to reflect the individual's cumulative oral history. However, the susceptibility of the periodontium to plaque-induced periodontal breakdown may be influenced by the aging process or by a specific health problems of the aging patient.

At the biological level, aging is associated with changes that lead to a progressive, irreversible deterioration of the functional capacities of several tissues and organs. Changes in structure and function during aging may affect the host response to plaque microorganisms and may influence the rate of periodontal destruction in older people. The greater amount of plaque recovered in the elderly subjects could be due, in part, to a larger area for plaque retention because of the gingival recession. Further, exposed cementum of the root surface and dental enamel constitute two unlike types of hard dental tissues with distinct surface characteristics, which may influence the plaque formation rate differently. Differences in dietary habits, increased flow of gingival exudate from the inflamed gingiva and possible age-related changes in salivary gland secretions may similarly alter the conditions for growth and multiplication of the plaque microorganisms.

Age Changes in Oral Mucous Membrane

The oral mucosa performs essential protective functions that profoundly affect the general health and well-being of the host. A decline in protective barrier function of the oral mucosa could expose the aging host to myriads of pathogens and chemicals that enter the oral cavity during daily activities. Both histologic layers of the oral mucosa, the epithelium, and connective tissue, have important defensive functions. A stratified epithelium, containing closely apposed, attached cells, and constitutes a physical barrier that interferes with the entry of toxic substances and microorganism. Mucosal epithelial cells also synthesize several substances that are critical for maintenance of the mucosal surface, such as keratin and laminin. Oral mucosal surfaces also possess a protective self-cleansing mechanism provided by the natural turnover of the epithelial cells. Earlier studies report that the oral mucosa becomes increasingly thin, smooth with age and that it acquires satin like edematous appearance with loss of elasticity and stippling. The tongue in particular is reported to show marked clinical changes and to become smoother with loss of filiform papillae. With age, there is a tendency for development of sublingual varices and an increasing susceptibility to various pathological conditions such as candida infections and a decreased rate of wound healing. An additional complication in evaluating oral mucosal status in older persons is the use of prosthetic appliances, which have considerable potential to alter mucosal integrity if not maintained properly.

Changes in the Teeth with Aging

The gradual changes taking place in the dental tissues after the teeth are fully formed are referred to as age changes. Most of the tissues have a physiological turnover of their components but however, some tissues do not exhibit any turnover such as the enamel. The macroscopic changes taking place with age in the teeth change in form and occur with age. Wear and attrition affect the tooth form. Changes in the dentin, both in quantity (thickness) and quality also result in a gradual loss of transparency. Pigmentation of anatomical defects, corrosion products and inadequate oral hygiene may also change the tooth colour. All the changes in enamel are based on ion-exchange mechanisms. It becomes less permeable and possibly more brittle with age. The nitrogen content of enamel is showed to increase with

age. No explanation could be offered to account for the increase in organic material, but probably the filling in of the cracks by organic material (acquired lamellae).

A two age dependent change takes place in dentine:

a. Continued growth, referred to as physiological secondary dentin formation.

b. Gradual obturation of the dentinal tubules referred as dentinal sclerosis.

Icroscopically clear annular rings have been found in teeth that might aid in age determination in forensic specimens. Age changes in morphology of teeth have important clinical implications as these changes may influence the outcomes of the restorative treatments and also have a great bearing on the reparative responses. [7]

Problems of providing preventive denture care for elderly people

The many factors that are known to influence older people's utilization of dental services directly or indirectly can be divided into four main categories·

1. Illness and health related factors
- Oral health status.
- Experiencing discomfort.
- General ill health.
- Mobility, functional limitation.

2. Socio-demographic factors
- Place of residence.
- Education.
- Income
- Age.
- Sex.
- Culture

3. Service-related factors
- Accessibility.
- Dentist behaviour.
- Dentist attitude.
- Price of service
- Satisfaction with service.
- Transport.

4. Attitudinal or subjective factors.
- Personal beliefs.
- Feeling no need, perceived.
- Perceived importance.
- Fear and anxiety.
- Resistance to change.
- Perceived financial strain.
- Satisfaction with dental visits.

Conclusion

Oral and general health are interrelated and sometimes in a bidirectional relationship. Diabetes, hypertension, rheumatoid arthritis, Alzheimer's disease, Parkinson's disease and depression are common diseases that become more prevalent with age. These systemic diseases and their related medications make older adults more vulnerable to oral diseases such as periodontal disease, dental caries and even oral precancerous and cancerous lesions. Older adults have degenerative changes that become more severe with age. Many of them have substantial medical and dental problems. They may suffer from xerostomia and tooth wear. Their oral diseases and conditions are often interrelated with their systemic problems. Dental professionals should update with current knowledge and skills in geriatric dentistry to cope with the increasing need of elderly dental care**.**

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