

GERIATRIC ORAL DISEASES

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ABSTRACT

An oral cavity is an imperative part of our body, which has a noteworthy role in chewing, swallowing, speech, nutritional status, facial expression as well as self-reliance. Thus, oral health significantly related to the quality of life. *Shalakya tantra* is a branch of Ayurveda which deals with treatment of organs above shoulders. There are nine openings of physical body and oral cavity is one of them. Older persons are at risk of chronic diseases of the mouth, including dental infections (e.g., caries, periodontitis), tooth loss, benign mucosal lesions, and oral cancer. Other common oral conditions in this population are xerostomia (dry mouth) and oral candidiasis, which may lead to acute pseudomembranous candidiasis (thrush), erythematous lesions (denture stomatitis), or angular cheilitis.

KEYWORDS: Geriatric oral diseases, *Jara*, Age related oral cavity changes, *Talushosha*, *Dantaveshtaka*, *Krimidanta*.

INTRODUCTION

Aging is a natural process. Old age should be regarded as a normal, inevitable biological phenomenon. According to Ayurveda, *Jara*/ aging is not a disease but a natural phenomenon like hunger, thirst or sleep. *Jara* also called as *Vardhakya* (aging) is defined as that which has become old by the act of wearing out. In the theory of natural destructions (*Swabhavoparamavada*), *Charaka* describes that there is a causative factor for the manifestation of a being but there is no cause for the cessation of this manifestation, since death following birth is a state of natural flow. Accordingly, *Jara*/aging is influenced by factors affecting *Shareera* (physical), *Indriya* (emotional), *Satwa* (psychic level), *Agni* (metabolism) and *Bala/Ojas* (immunity).

Jara is accompanied by the process of decay and manifests in the form of various degenerative changes. According to *Sushruta Samhita*, the surgical compendium of Ayurveda, defines health as 'the equilibrium of the three biological humors (*doshas*), the seven body tissues (*dhatu*s), proper digestion and a state of pleasure or happiness of the soul, senses and the mind. According to Ayurveda, as age advances, several changes take place in the body, in the external appearance, in the condition of *Dosha*, *Dhatu*, *Mala*, *Agni*, *Oja*, and so on, as well as in the mental and cognitive functions.

Shalakya tantra is a branch of Ayurveda which deals with treatment of organs above shoulders. There are nine openings of physical body and oral cavity is one of them. according to the *Shalakya tantra*, 65 varieties of oral

diseases can arise in seven anatomical locations i.e. 8 on the lips, 15 on the alveolar margin, 8 in connection with teeth, 5 on the tongue, 9 on the palate, 17 in the oropharynx and 3 in a generalized form. with advancing age, the age-related oral cavity changes and geriatric oral disease can be occurred. Elderly people are susceptible to several chronic diseases also.

Oral mucosal changes in old age

Oral mucosal surfaces possess a protective self-cleansing mechanism provided by the natural turnover of the epithelial cells. Age-related changes in the oral mucosa and dietary or hormonal deficiencies lead to diminished keratinization, dryness, and thinning of the epithelial structures.

The clinical appearance of the oral mucosa in older patients is often indistinguishable from that of younger patients. However, changes over time including mucosal trauma, mucosal diseases, and salivary gland hypofunction can alter the clinical appearance and character of the oral tissues in older patients."

The stratified squamous epithelium becomes thinner, loses elasticity, and atrophies with age. A declining immunological responsiveness further increases the susceptibility to infection and trauma. An increased incidence of oral and systemic disorders, along with increased use of medications, may lead to oral mucosal disorders in elderly persons.

Age related Bone changes

Age related osteoporosis is common and, in edentulous patients, may play a role in atrophy of alveolar and possibly basal bone, although no clear relationship has been established. Atrophy of alveolar bone is related mainly to tooth loss.

Age related Nerves and musculature changes

Continued muscle function is a major requirement for the maintenance of speech and mastication. In all patients with advancing age there is a reduction in total muscle mass which occurs through a Muscle function is dependent on the performance of the nervous system and both exhibit independent age-related changes. Nerve cell loss is universal in old age and is exhibited in the brain and spinal cord. There are also age-related changes in neurotransmitters, resulting in motor dysfunction.

Age related Sensory changes

It is known that taste and smell sensitivities change throughout life and often decline with ageing. Taste sensation is an important function of the tongue that loss due to aging. Ageing results changes in the membranes of the gustatory cells, which alter the function of ionic canals and receptors. These changes can make foods become tasteless thus resulting in a reduction in appetite. A diminution of taste results from the degeneration of taste buds and a reduction in their total number as renewal is much slower in elderly people. Elderly people have considerable differences in their sensory perception and capacity to detect the pleasantness of foods compared with younger people.

Changes in Salivary glands and salivary secretion with aging

Saliva lubricates the oral cavity, prevents decay by promoting remineralization of teeth, and protects against fungal and bacterial infections. With advancing age, there is an atrophy of acinar tissue, a proliferation of ductal elements and some degenerative changes in the major salivary glands and also minor salivary glands.

Complaints of a dry mouth (xerostomia) and diminished salivary output are common in older populations. In addition to dry mouth, clinical manifestations of xerostomia include a burning sensation, changes in taste, and difficulty with swallowing and speech. Although salivary flow does not decrease with age alone, certain medications and illnesses increase the risk of xerostomia in older persons. Drugs with anticholinergic effects are the most likely to produce complaints of diminished salivary output and dry mouth.

One treatment for head and neck cancers is external beam radiation, which causes severe and permanent salivary hypofunction and results in persistent complaints of xerostomia. Radiation-induced destruction of the serous-producing salivary cells occurs via apoptosis. Sjögren's syndrome is one of the most frequently encountered chronic autoimmune connective

tissue disorders and is the most common systemic condition associated with xerostomia. Sjögren's syndrome occurs in primary and secondary forms. Those patients with primary Sjögren's syndrome have salivary and lacrimal gland involvement, with an associated decreased production of saliva and tears.

According to Ayurveda *Talu shosha* can be correlated with xerostomia.

Changes in Teeth and supporting structure with aging

Because of aging, the appearance and structure of teeth tends to change. Teeth occurs more dark and yellow due to the change in thickness and composition of the underlying dentin and enamel. Abrasion and attrition also contribute to changes in tooth appearance. The number of blood vessels entering a tooth and the enamel decreases with age leading to reduced sensitivity. With less sensitivity to environmental stimuli, the response to caries (decay) or trauma may decrease. Additionally, the width and fiber content of the periodontal ligament decreases with aging. Gingival recession is another common condition in older persons which exposes the cementum to an oral environment and responsible for root caries.

Gingivitis

Plaque is a biofilm composed of gram-negative bacteria and endotoxins that develops on teeth at the gingival margins, leading to gingival inflammation (gingivitis). Gingivitis is characterized by erythematous and edematous gingival tissue, which often bleeds easily with instrument probing and gentle brushing. Other causes of gingivitis include trauma and tobacco use.

Periodontitis

Periodontitis occurs when gingival inflammation causes the periodontal ligament to detach from the cementum and tooth structure, leading to increased gingival pocket depth, loosening of the tooth, and, ultimately, tooth loss. Many older persons are prone to periodontal detachment and tooth loss because of poor oral hygiene and gingival recession. In Ayurveda it can be correlated with *dantaveshtaka dantagat roga*.

Dental Caries

Dental caries can occur at any age. However, because of gingival recession and periodontitis, older persons are at higher risk of developing root caries. In Ayurveda it can be correlated with *krimidanta dantagat roga*.

Candidiasis

Although it is estimated that *Candida* species are present in the normal oral flora of healthy adults, certain conditions increase the risk of overgrowth in older persons. These conditions include the pathogenicity of individual *Candida* strains; local factors (e.g., xerostomia, denture irritation, tobacco use, steroid inhaler use); and systemic factors (e.g.,

immunodeficiencies, systemic corticosteroid use, antibiotic use, chemotherapy, radiation therapy, endocrine disorders, malabsorption, malnutrition).

Oral Cancer

Tobacco and alcohol use are thought to be responsible for up to 75 percent of oral cancers in old age. Precancerous lesions and early oral cancer can be subtle and asymptomatic. Most oral and oropharyngeal cancers are squamous cell carcinomas that arise from the lining of the oral mucosa. Oral cancer most commonly occurs, in order of frequency, on the lateral borders of the tongue, on the lips, and on the floor of the mouth.

CONCLUSIONS

A variety of oral changes may be observed in elderly patients. These changes can be attributed to a variety of physiological and pathological processes which have developed over a lifetime. Clinically, it is important to recognize these changes and to develop planning strategies which take account of them.

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