

PATHOLOGY OF ORAL MUCOSA IN THE ELDERLY PATIENTS – CLINICAL - STATISTICAL STUDY

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Keywords: lesions, senescence (aging process), oral cavity

Abstract: Purpose of the study: the authors address the specific pathology of oral mucosa in the elderly patients, mainly because in dentistry, the diagnosis of these disorders involves special therapeutic approaches. Study material and method: a clinical-statistical study was performed on a group of 100 patients of both sexes, aged between 55 and 75 years old, aiming at detecting oral mucosal lesions, with or without the presence of several simultaneous comorbidities. The results of the examined patients with impaired oral mucosa were submitted to statistical analysis, revealing the presence of 32 patients with mucosal lesions, 16 women and 16 men. The analysis of the lesion types revealed the diversity of the discovered lesion forms, in direct relation with age and associated risk factors which occurred more frequently in the patients over the age of 55. In conclusion, oral mucosal lesions should be considered as complex, in the context of the biological age of the patient, but also in the presence of the general risk factors and the delimitation between the elderly patients, with physiological changes caused by the aging process and the elderly patients with obvious signs of general associated illness, in other words, a delimitation between the state of disease and aging, with their repercussions on the patients' quality of life and last but not least, a consideration of the local-regional factors.

Cuvinte cheie: leziuni, senescenţă, cavitate bucală

Rezumat: Scopul lucrării: autorii abordează patologia specifică mucoasei orale la pacientul vârstnic, în practica stomatologică diagnosticul acestor afecţiuni presupunând abordări terapeutice deosebite. Material şi metoda de lucru: a fost efectuat un studiu clinico-statistic la un lot de 100 pacienţi de ambe sexe, cu vârste cuprinse între 55 şi 75 de ani, urmărindu-se decelarea leziunilor mucoasei orale, în prezenţa sau nu a unor comorbidităţi. Rezultatele privind afectarea mucoasei orale a pacienţilor examinaţi au fost supuse analizei statistice, decelându-se prezenţa a 32 de pacienţi cu leziuni mucozale, 16 la femei şi 16 la bărbaţi. Analiza tipului de leziune a scos în evidenţă diversitatea formelor lezionale prezentate, în directă legătură cu vârsta şi factorii de risc asociaţi, frecvenţi la pacienţii cu vârste de peste 55 ani. În concluzie, leziunile mucoasei orale trebuie privite complex, în contextul vârstei biologice a pacientului, dar şi a prezenţei unor factori generali de risc şi delimitarea între pacientul vârstnic, cu modificări fiziologice de senescenţă şi vârstnicul cu semne evidente ale unei boli generale asociate, cu alte cuvinte, între starea de boală şi cea de îmbătrânire, cu repercursiunile lor asupra calităţii vieţii, şi nu în ultimul rând a factorilor loco-regionali.

INTRODUCTION

Geriatrics is the medical practice responsible for the global and multidisciplinary assessment of the elderly, for the diagnosis and treatment of their pathology and for the prevention of disorders and diseases responsible for the acceleration of senescence processes and the loss of their autonomy.(1,2) In this process, there is a heterogeneity, which is difficult to diagnose, because there are no precise stereotypes of aging, each person acts in a manner which is specific to himself/herself, which makes them difficult to manage.

Geriatric dentistry deals with the physiological, physical and pathological manifestations of tissues as well as with the oro-dental functions caused by senescence, being a prerequisite in the fight against the irreversible decline of the quality of human life.

In fact, this specialty has a preventive and curative purpose. It also aims at maintaining and/or rehabilitating the function and aesthetics of the masticatory apparatus, at increasing the lifetime of teeth so that to equal that of the humans (2,3) and at allowing normal chewing, swallowing,

phonation, salivation, communication etc.

Age is, par excellence, a dynamic phenomenon, in which health and illness change their course in relation to the term of reference, which in this case is the persons' age. All periods of life have their specific medical and social implications and aging is a process that is manifested by changes, starting approximately at the peak of the reproductive period, while its main feature is the diminishing ability of the living matter to survive in its normal surrounding environment.(4)

The study of the biological, epidemiological, demographic, social, and psychological components of aging shows facets, which are interconnected and occur in a social context, in interaction with society.(2)

With aging, the body progressively loses its capability to renew itself, quantitative and qualitative changes occur at the cellular and tissue level and from a physiological point of view there is a morphological and functional decline, which affects all functional systems of the human body.(2,3,4). Behavioural changes regarding the individuals' adaptive skills, motivation,

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Article received on 02.03.2012 and accepted for publication on 03.05.2012

ACTA MEDICA TRANSILVANICA June 2012;2(2):174-178

CLINICAL ASPECTS

attention and the distortion of the individual "self image" also occur.(2)

A very valuable study conducted and published in 1984 by St. Milcu and entitled "*The psychosomatic syndrome of valid elderly*" describes the mental landmarks of the elderly human being, its inter-relational changes, a combination of mental and emotional disorders (with a behavioural expression) which can lead to a complex of variable somatic disorders, if they are not controlled by occupational reactivation.(5,6,7)

Senescence leads to structural and functional changes at the component level of the masticatory apparatus, which follow the same pattern as in other human tissues and organs, their variety being related to the genetic heritage of each individual, the individual rate of aging and the individuals' specific way of living.(4)

These are present at the level of bones structures, the hard dental tissues, the conjunctiva pulp, the marginal periodontium, the oral mucosa, the temporal-mandibular joint, as well as at the level of the salivary gland secretion, the latter also being influenced by the side effects of medicines, which most of the older patients use in the treatment of general disorders they have been diagnosed with.(2,3,7,8)

Oral mucosa, histologically composed of keratinized epithelium or not, basal membrane (which contains collagen type IV), chorion (or/ connective tissue) is of 3 types:

- mucosa located at the level of the soft palatal, floor of the mouth, ventral surface of the tongue, alveolar mucosa and from the buccal vestibule;
- masticatory mucosa, located at the level of the hard palate and the gum;
- highly specialized mucosa, located on the dorsal surface of the tongue and containing most of the taste buds.

In the process of senescence, mucosa undergoes a process of atrophy, its epithelium is thinner, poorly differentiated and a thickening of collagen in the underlying connective tissue appears. The existing keratinisation processes at the level of the palate mucosa and gum diminish or conversely, increase the tendency towards hyperkeratinisation. Fibro-sclerotic changes in blood vessels or varicose type dilatation, more common in the lingual veins will frequently occur.

At sub-mucosa level, an increase in the number of fat cells and a fibrous atrophy of the accessory salivary glands can be observed. These changes weaken the oral mucosa and diminish its potential for self-repair.(2)

At the level of the dorsal tongue mucosa, most taste receptors are present, located at the level of the lingual papillae, differentiated anatomical structures, with a role in the taste function. With age, the number of filiform papillae diminishes and the lingual mucosa acquires a smooth texture, satin-like, thin and dry. The lower number of papillae favours the proliferation of opportunistic pathogens such as *Candida albicans* and modifies the taste perception of the elderly.

At the level of the gingival mucosa, changes of the epithelial insertion, gum, desmodontium and of the root cementum can be observed, without the gingival retraction being a requirement. Furthermore, we can observe a decline in gingival keratinisation, epithelial regressive changes, along with conjunctival fibrosis.

The migration of the junctional epithelium towards the apex follows the alveolar crest atrophy along with the physiological dental mesialization as well as the process of dental surface wear.(8) The loss of the periodontal attachment and bone support may not always be considered pathological, tooth loss in the elderly is not the natural consequence of aging, but the result of a periodontal disease aggravated with age.

All this morphological and functional changes can accompany a series of specific oro-dental afflictions: oral candidiasis, glossitis, stomatitis, hyperkeratosis, mucosal ulcers, cheilitis etc.

PURPOSE

Senescence, a biological stage of human life, is part of the normal life cycle of an individual. It is the stage of irreversible decline in the quality of life and neurocognitive performance, the stage of the everyday mental and moral suffering, all of which are typical for this period of the human existence.

Within epidemiological investigations, due to increasing longevity and mass ratio of the elderly population, they represent a particularly important group and therefore, the dental management of the elderly patients must be aligned with the ever more complex concerns of various national and international bodies, responsible for the improvement of their quality of life. The morphological, biological and behavioural changes which are characteristic for senescence, with specific reference to the dento-maxillary system, require a psychological approach towards the patients mainly because of a large array of specific afflictions, with very different ways of manifestation specific to each individual and because often, the dignity of the older people is being compromised by the lack of economical and medical solutions, due to the extent of their problems.

In this paper we will present oral mucosal afflictions specific in the elderly patients, because in dentistry, the diagnosis of these disorders involves special therapeutic approaches.

METHODS

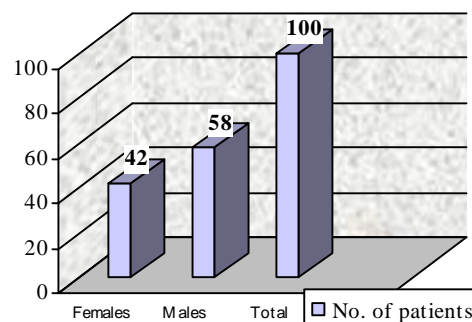
In order to assess the incidence of oral mucosal lesions in the elderly patients, mainly due to the senile physiological involution but also due to the presence of a variety of disorders which can lead to a worsening of such lesions, we performed a clinical-statistical study of 100 patients of both sexes, aged between 55 and 75 years old, selected from those who came to us for specialised treatment and among the patients admitted to various clinics in Bucharest for general disorders.

RESULTS

The results of the examined patients with impaired oral mucosa were submitted to statistical analysis, systematized in charts and tables.

In relation to gender, the batch of 100 patients is presented according to figure no. 1:

Figure no. 1. Gender distribution of the group of the examined patients.



In relation to the age and sex of the patients, the situation is as follows: (figure no. 2)

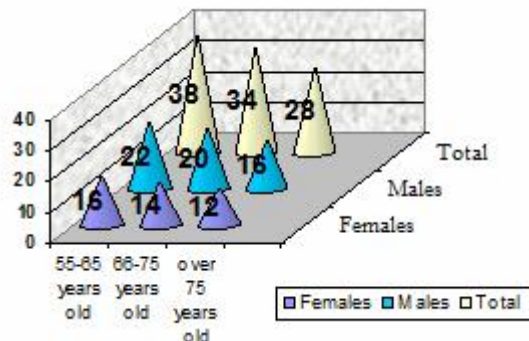
Analyzing the results obtained after the clinical

CLINICAL ASPECTS

examination of the patients, we discovered that 32 of them, 16 women and 16 men, had signs of oral mucosal disease, as follows:

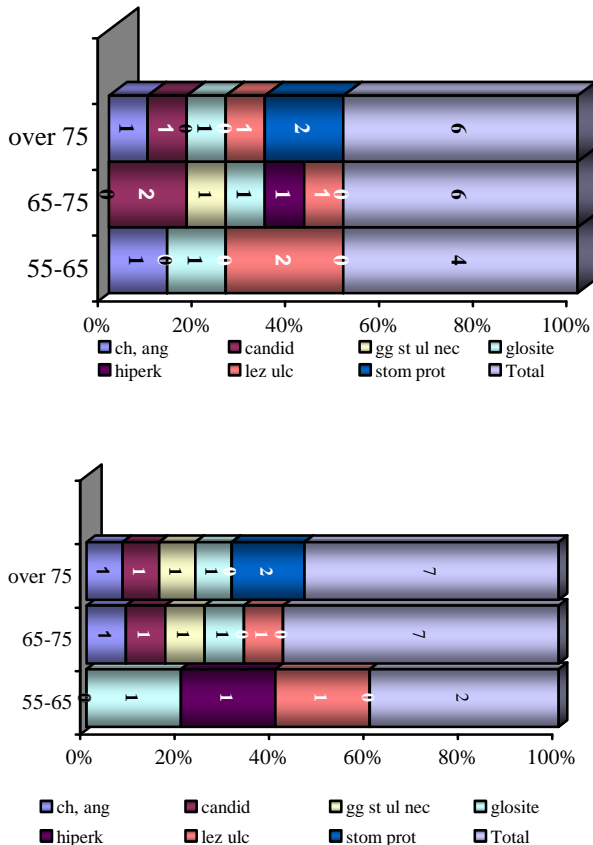
- 4 cheilitis, out of which the most common was the angular cheilitis;
- 5 Candida lesions with various locations;
- gingival necrotizing ulcerative stomatitis in 3 cases ;
- 6 different types of glossitis (tongue with satin finish, cracked, scrotal etc.);
- 2 hyperkeratotic lesions;
- 6 ulcers on the tongue;
- 2 prosthetic stomatitis.

Figure no. 2. Distribution of patients by age and gender



Their percentage in relation to gender and age is presented in figure no. 3.

Figure no. 3. Afflictions of the oral mucosa by gender and age. a. Female; b. Male



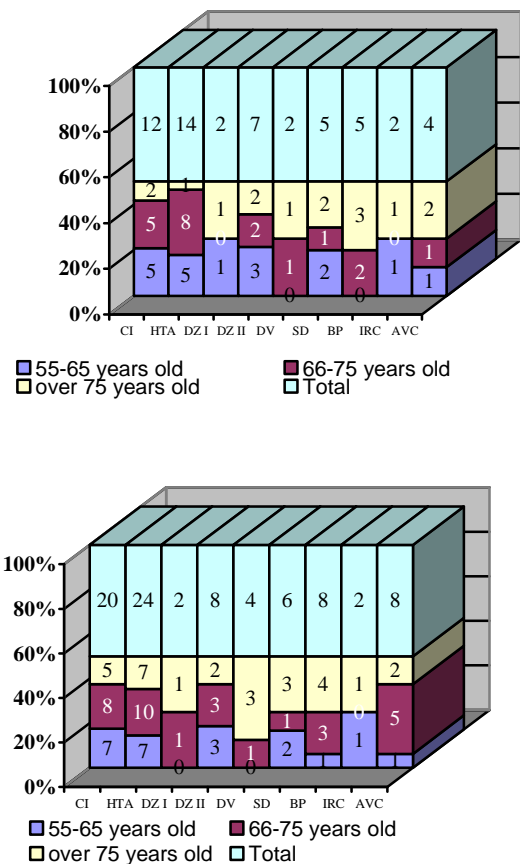
We have considered the potential for general risk factors, given the fact that with age, patients have a number of

general afflictions, which, by their evolution and the medication administered, may be considered, by themselves, the cause of some oral mucosal diseases.

Local-regional risk factors such as: a poor oral hygiene, the presence of irritable spines - represented by large untreated coronary destruction, multiple therapeutically untreated edentations, incorrect dental or prosthetic treatment, etc., associated with the general factors are sources which can lead to a worsening of the mucosal pathology. These local-regional factors were present in most of the studied patients.

In the group of the examined patients, we found a range of general afflictions, which are represented as follows: (figure no. 4 a and b):

Figure no. 4. Distribution of risk factors by age and gender: a female, b male



Legend: CI – ischemic heart disease; HTA - arterial hypertension; DZI – I - diabetes mellitus type I/II; DV – vascular dementia; SD – depressive syndrome; BP – Parkinson's disease; IRC – chronic renal failure; AVC - stroke

From the 100 studied patients, we found a total of 135 different afflictions in the pathological personal history, some of them presenting more than one associated general comorbidities; of these, 43 were found in the 32 patients detected with oral mucosal disease.

We detected in 32 patients who had oral mucosal lesions, the following comorbidities:

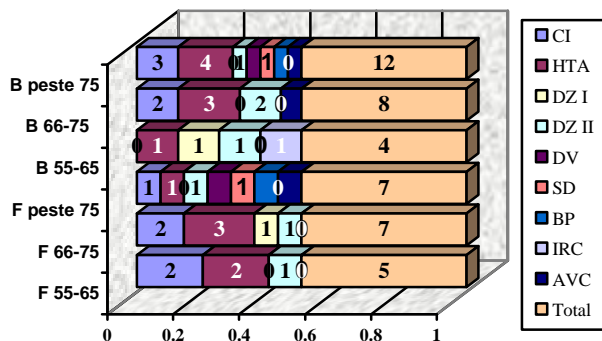
- 14 patients had hypertension;
- 10 patients were diagnosed with ischemic heart disease;
- 7 patients were diagnosed with type II diabetes;
- 2 patients were diagnosed with type I diabetes;
- 2 patients were diagnosed with vascular dementia;
- 2 patients had depressive syndrome;

CLINICAL ASPECTS

- 2 patients were diagnosed with Parkinson's disease;
- 1 patient was diagnosed with chronic renal failure;
- 3 patients over 66 years old were diagnosed with stroke.

The most affected age group was that over 75 years old (19 patients), 15 patients aged between 65-75 years old and 9 patients aged between 55-65 years old, with predominance in men; these one presented 24 of the 43 various comorbidities detected in 32 patients with oral mucosal disease, out of the 100 studied patients. (figure no. 5)

Figure no. 5. Distribution of risk factors in 32 patients with oral mucosa disease, by gender and age group



DISCUSSIONS

The issues regarding the specific processes of dento-maxillary senescence are not new. For the first time, the Congress of Gerodontology in Budapest, organized to commemorate the 50th anniversary of the Dental Clinic in Budapest, discusses issues of gerodontology.

During the congress, among others, diseases of the oral mucosa (leucoplakia, glossitis, tumours etc.) were being discussed, which frequently occur at any age, but more commonly in the elderly, as a consequence of tissue dehydration, a change in eating habits, changes in the nutrient exchange, hypovitaminosis and hormonal imbalance.(9)

In our study made on 100 patients, we noted the appearance of oral mucosa lesions in 32% of the cases, out of which 50% of the patients were females and 50% were males.

Lesion type analysis revealed a diversity of lesion forms. We noted the presence of a number of 6 glossitis and 6 ulcers at the level of the lingual mucosa, caused by irritating spines (sharp tooth edges with large coronary destruction), various sites of candidiasis (5 out of 32), more frequent for the last 2 decades of age, 4 angular cheilitis and other oral mucosal manifestations in smaller numbers.

The analysis of risk factors is mandatory, because some of them can explain the occurrence of mucosal lesions.(12) We studied the more common systemic risk factors among the 100 patients, noting the high frequency of hypertension and coronary heart disease, which often occur in the same patient, in all age groups of both sexes, with a higher degree of occurrence between the ages of 66-75 years old in both sexes.

Of the 100 examined patients, 15 of them had a history of type II diabetes, with other comorbidities occurring in a lower percentage. The most encountered various comorbidities were observed in males (82 from a total of 135) aged between 55 and 75 years old, compared to women, where these counted 53, with the majority appearing in the age-group of 66-75 years old.

Since the number of the male patients was higher than that of the female patients, we can conclude that the proportion

of the various comorbidities was approximately equal for both sexes.

In the case of 32 patients with oral mucosal disease, we diagnosed the presence of 43 various comorbidities, most of which were represented by arterial hypertension and ischemic heart disease, mainly occurring in the male patients.

The physiological changes occurring with age in the oral cavity can be characterized among others, by the thinning of the oral mucosa epithelium, by hyperkeratinisation processes, by the atrophy of salivary glands affected by hypopituitarism, by vitamin deficiencies and by psychiatric disorders that often accompany this period of physiological decline in humans, which also decreases the body's ability to self-repair (2,3), as well as its local self-defence ability and increases the likelihood of intercurrent diseases requiring antibiotics, which in turn will lead to an increased risk of oral candidiasis occurrence.(3,13)

The heterogeneous nature of oral mucosal lesions is difficult to manage and therefore, the successful treatment of the elderly patients depends mainly on the doctor, who, in a general context, must be capable of assessing each case individually. This attitude is indispensable for a dentist, because he has to adapt the patients' conventional treatment in accordance to his biological age and only after evaluating the patients' general health status.(2,3,7,10)

Maintaining a healthy, comfortable and functional orodental cavity is one of the priorities for improving an individual's general health status and quality of life, from the aesthetic, functional and social point of view. The treatments should be adjusted to the residual abilities of the elderly patients, with restorative treatment solutions, appropriate for the mentioned goals.(11)

CONCLUSIONS

Senescence is an inevitable stage of human life. It is a complex phenomenon resulting from a series of processes taking place inside the human body, leading to a lower renewal potential of the living matter. It is manifested by changes, which need a long time to externalize and have undeniable consequences. It is a period of regression of all of the human body's structures and functions.

The process of senescence occurs throughout the entire body and therefore also at the level of the dento-maxillary system, where it is evidenced by a series of particularities specific to the patient's age, among which the oral mucosa lesions are a part of. Lesions should be considered as complex, taking into account the patient's biological age, as well as the general risk factors, which may cause a rapid evolution of the senescence process with its entire array of changes and last but not least, the local-regional factors must also be taken into account. For an appropriate medical conduct, the dentist must be aware of the degree of involvement regarding the aggravating factors in the occurrence of oral mucosal lesions, their particularities and he must be able to apply them individually. From this point of view, it is important to clearly distinguish between an elderly patient with physiological changes of senescence and an elderly person with signs of disease. In other words, the dentist must be able to distinguish between the state of disease and aging, along with their repercussions on the patients' quality of life.

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