

PARTICULARITIES OF THE DENTAL TREATMENT STRATEGY IN GERIATRIC PATIENTS

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ABSTRACT

With the increase in life expectancy, the number of elderly patients requiring dental treatment has increased. **The aim** of this study is to show the peculiarities of choosing the optimal treatment strategy for these patients. **Material and Methods:** We studied a group of 44 elderly patients, of whom 10 were healthy. We performed anamnesis and detailed and oral examinations. **Conclusions:** The findings of our research highlight the particularities of diagnosis and treatment of this category of patients and the need for a multidisciplinary team in their management.

Key words: *personalized dental treatment, geriatrics*

INTRODUCTION

The geriatric patient is defined by age over 65 years. With increasing age, the risk of dental disease, such as caries, periodontal lesions, mucosal lesions and edentations increases. The main causes of dental affections in this group of patients are related to the medication they take for chronic illnesses but, dental problems are also determined by changing eating habits, changing the quality and composition of saliva, and behavioral changes in terms of oral hygiene [1,2,3].

All these peculiarities of the geriatric patient lead to the elaboration of treatment principles, methods and therapeutic techniques that are distinct from the pathology of the adult. Our study aims to identify the most important peculiarities of dental treatments in the elderly and the problems that arise in their realization.

MATERIAL AND METHODS

The study was conducted on a group of 34 elderly patients, 78% of whom were aged 65-75, and 22% over 76. 18 patients were females (60% rural and 40% urban) and 16 males (55% rural, 45% urban). The control group was made by 10 elderly, healthy patients without associated pathologies. The examination of patients insisted on the thorough knowledge of their bio-psycho-social and spiritual characteristics. We have established the biological age, relative to the chronological one, in order to calculate the general and local gerodex.

A detailed patient history was performed using questionnaires such as:

1. Social questionnaire, regarding the patient's origin, days of hospitalization and way of life;

2. Questionnaire on the evaluation of drug consumption (prescriptions, auto-medication, intolerances, allergies);

3. Questionnaire on assessing basic senses,

food preferences;

4. Biography test;

5. Assessment of intellectual capacity.

The next stage of the anamnesis was to find out the history of dental affections.

RESULTS AND DISCUSSIONS

Anamnesis and clinical examination allowed us to establish a biological and nutritional balance. The recording of the associated pathology allowed us to classify these patients according to A.S.A indicators (table 1, table 2):

- A.S.A. I represent the normal healthy patient.
- A.S.A. II represents the patient with moderate systemic pathology without major functional limitations.
- A.S.A. III characterizes the patient with severe systemic pathology and important functional limitations.
- A.S.A. IV defines the patient with severe systemic pathology, life-threatening.
- A.S.A. V defines the dying patient or with very low life expectancy.
- A.S.A. VI characterizes the patient in brain death.

Classification of patients in the study group considered their main affection, most of them still having 2-3 chronic conditions.

The extraoral examination followed measurements between the known craniometric points of the transverse (Zy-Zy) and vertical (Of-Gn) diameters of the face. The data is presented in table 3.

At the intraoral examination, the remaining teeth and the edentulous degree were observed first and foremost. We found that the maximum incidence of persistence is in the incisive-canini group of teeth, followed by maxillary incisors, mandibular molars, and finally maxillary molars (table 4).

The clinical examination was performed both intraorally and extraorally, under the same conditions and with the same tools in all patients.

The most common tooth lesions are caused by the physiological or pathological wear of natural or artificial teeth, gingival retractions and even complete edents.

These results show that face shape varies with age and oral health. The increase in facial transverse diameter is due to the maintenance of functional connections of fronto-zygomatic-temporal and fronto-temporal sutures. At the vertical diameter of the face it is found that the height of the lower floor decreases with age.

The value of the gonion angle increases in age in men, to an average of 124 degrees (+/- 19 degrees), and in women it reaches a value of 122 degrees (+/- 29 degrees).

The weakening of antigravitational support mechanisms of soft facial tissues [4], concomitant to decreased muscle tone and elasticity of soft tissues [5], create major difficulties in marking and insertion of gnathoprotective devices.

The highest prevalence of dental affections was found in female patients in the countryside, probably due to technical-material, socio-economic and educational cultural conditions.

Decreasing the number of remaining teeth as they age leads to a lack of prophylactic measures. This is decisive in the loss of teeth in the years to come and also in the establishment of a mentality that proposes the abandonment alternative, with the hope of a mobile prosthesis that radically eliminates the absence of teeth. Especially the absence of premolars, requires urgent dental care, because is an area of maximum demand and with its own morbidity [6,7,8,9].

Table 1. Associated pathology

Groups of disease	Age groups		
	65-74%	75-85%	85+
Cardiovascular diseases	41,1	42,1	47,4
Osteoarticular diseases	16,0	17,8	17,9

Metabolic diseases	7,0	6,0	3,4
Central nervous system diseases	9,8	11,6	11,1
Digestive diseases	8,1	4,0	4,3
Respiratory diseases	7,9	6,3	5,6
Other diseases	18,6	12,2	11,3

Table 2. Distribution of the patients by age and disease

Age groups	ASA I	ASA II	ASA III	ASA IV	ASA V
65-74	7	16	7	1	0
75-85	2	6	2	0	0
>85	1	2	1	0	0

Table 3. Zy-Zy = zygomatico-zygomatic diameter; Of-Gn = vertical measurement between lateral orbito-frontal point and gonion

Age groups	Zy-Zy		Of-Gn	
	Average	Variation	Average	Variation
65-74	138	35	142	25
75-85	140	32	128	20
85+	142	30	123	20

Table 4. Incidence of residual teeth by age, percentage

Region	Toothed tooth groups	Age groups			
		65-74	75-85	>85	Total
	Incisors-canines	10,3	2,6	1,0	13,9
Maxillary	Premolars	3,1	3,1	0,5	6,7
	Molars	6,3	1,8	0,4	8,5
	Incisors-canines	13,2	2,5	1,5	15,0
Mandibular	Premolars	5,1	1,5	0,5	7,1
	Molars	7,5	2,5	1,2	11,2
Total		35,5	14,0	5,0	62,4

Erosion lesions and dental cracks met in all patients in the study group. Ignoring them, it produces structural changes of dentin and pulp and creates a picture favorable to the evolution of dental caries. Vestibular surfaces seem to be more interested than proximal, and anterior teeth more frequently interested than posterior ones.


Figure 1. Dental abrasion

When more and more remaining teeth are kept on the arcade, the attrition in the elderly increases and there is an obvious change in the dental enamel related to the senescence process (Fig.1, Fig.2).

In dental geriatric patients, pathological abrasion is frequent as a result of occlusal imbalances (Fig.3)


Figure 2. Dental attrition



Figure 3. Dental erosion

Caries lesions are the most frequent and have as clinical feature an evolution less marked by pain but with a faster progression to radicular resting state.

33% of the patients had pulp aging phenomena, which should be analyzed in accordance with the permanent dentine apposition, a phenomenon that causes gradual reduction of endodontic space and pulp tissue regression.

The edentation is present in all its clinical forms: reduced - 7 patients, stretched - 5 patients, extended - 5 patients, subtotal - 7 patients and total - 10 patients.

On the basis of the established diagnosis of certainty, we could individualize

treatment strategies adapted to the geriindex of each patient.

The treatment is based on the psychic factor of the patient, the main reason for presentation to the dentist, the state of hygiene and the results of extra and intraoral examinations [10 -15].

The general treatment strategy of the geriatric patient identifies 4 degrees of dental affection, each with a specific treatment protocol (Table 5).

The proposed treatments for each degree of damage will be customized for each case, depending on the criteria discussed above. [16,17,18]

Patients with severe locomotor dysfunctions in the study group have a history of malignancy (2 patients operated for rectal cancer and one for breast cancer).

Due to periodontal disease activity pattern, geriatric patients require additional investigations in order to establish a predictable treatment plan. [19-24]

These patients require particular attention due to the general fragility and tissue fragility caused by paraneoplasm syndrome [25-35].

CONCLUSIONS

1. Characteristics of complex, three-dimensional changes on the bio-psycho-social plan of the elderly motivate the concerns about the medical care dedicated to them.
2. Geriatric patients require regular clinical and laboratory investigations.
3. The dentist must know the history of chronic polypathology of patients and the functional changes they may cause.
4. Our study shows that the facial index changes with age by maintaining active osteogenic areas and resorption of others.
5. The results of our study confirm that conservative therapy prevails in the elderly.
6. The study reveals the need to individualize the treatment strategy according to the psychic factor, the hygiene condition and the associated comorbidities.

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