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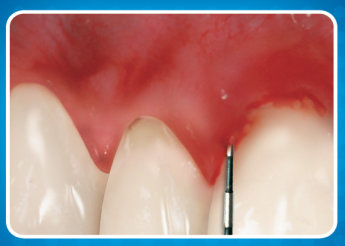

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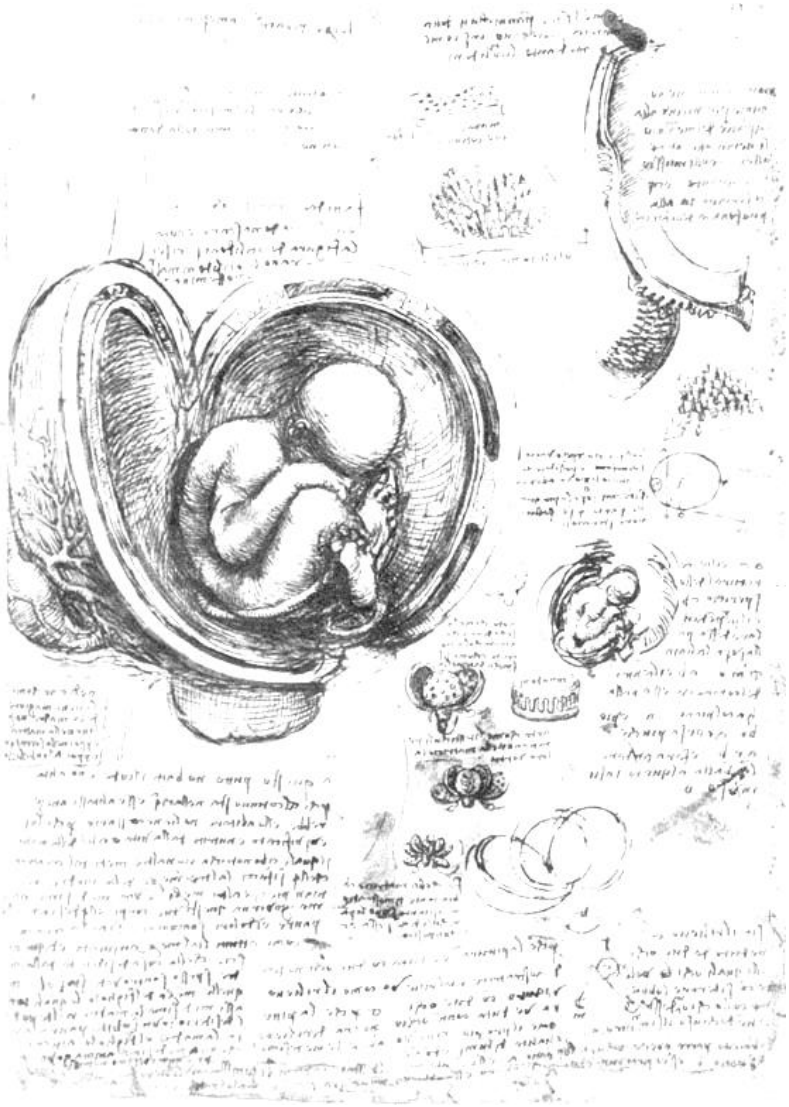

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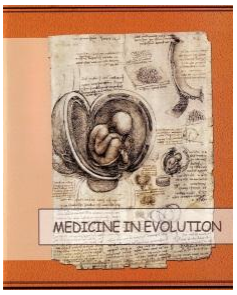
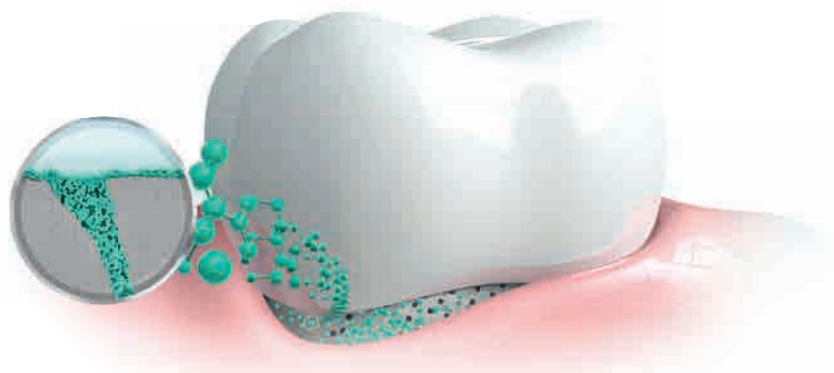


ARTICLES

Noul elmex®SENSITIVE PROFESSIONAL cu tehnologia PRO-ARGIN

Calmarea **imediată* și de durată** a durerii din sensibilitatea dentară[1,2]



- În contact cu saliva, se formează un strat bogat în calciu, care obturează instant[1,*] tubulii dentinari deschiși
- Stratul rămâne intact în timp, chiar după expunerea la acizi, asigurând calmarea de durată a durerii din sensibilitatea dentară[2,3]

93% dintre pacienți confirmă calmarea durerii din sensibilitatea dentară[4]

93% dintre pacienți — confirmă reducerea hipersensibilității dentinare[4]

91% dintre pacienți — apreciază recomandarea medicului stomatolog[4]

Calmarea imediată* a durerii din sensibilitatea dentară[1]

Calmarea imediată* și de durată începe cu recomandarea dumneavoastră**

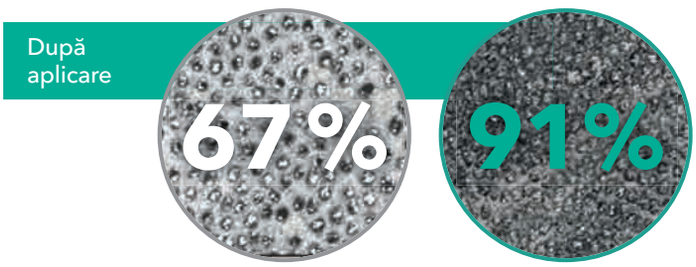
*Pentru calmare imediată, aplicați direct cu degetul pe dintele sensibil și masați ușor pentru 1 minut;
**Doar în legătură cu pasta de dinți

Referințe: 1. Nathoo S, et al. J Clin Dent. 2009;20(Spec Iss):123 –130; 2. Docimo R, et al. J Clin Dent. 2009;20(Spec Iss): 17– 22.; 3. Report Deon Hines-0003, 2016; 4. Studiu Ipsos cu privire la utilizarea produsului elmex® SENSITIVE PROFESSIONAL Repair & Prevent, efectuat în Polonia, rezultate după 2 săptămâni de utilizare, cu 325 de participanți (2017).

elmex® SENSITIVE PROFESSIONAL realizează obturarea superioară a tubulilor dentinari în comparație cu tehnologiile concurente[1,2,*]

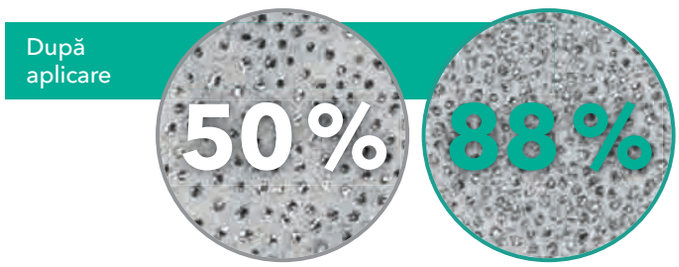
Studiul 1[1,*]

Tehnologia cu fluorură de staniu/ fluorură de sodiu | Tehnologia PRO-ARGIN



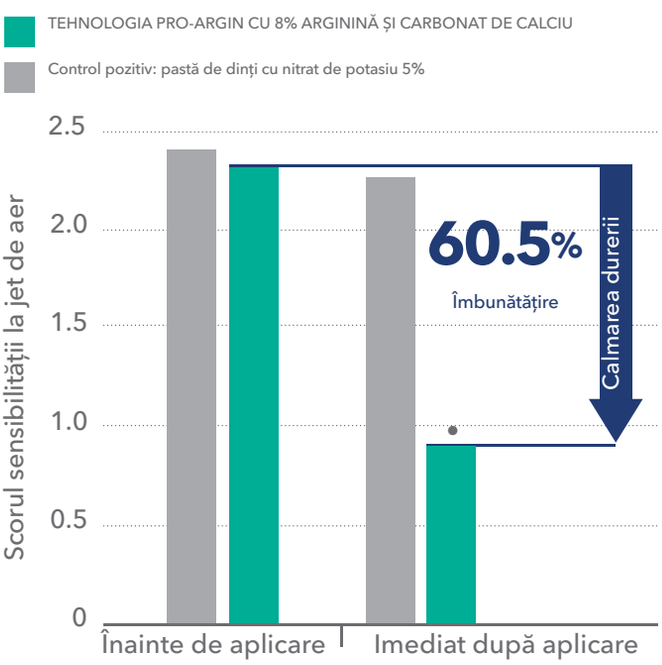
Studiul 2[2,*]

Tehnologia Novamin/ fluorură de sodiu | Tehnologia PRO-ARGIN



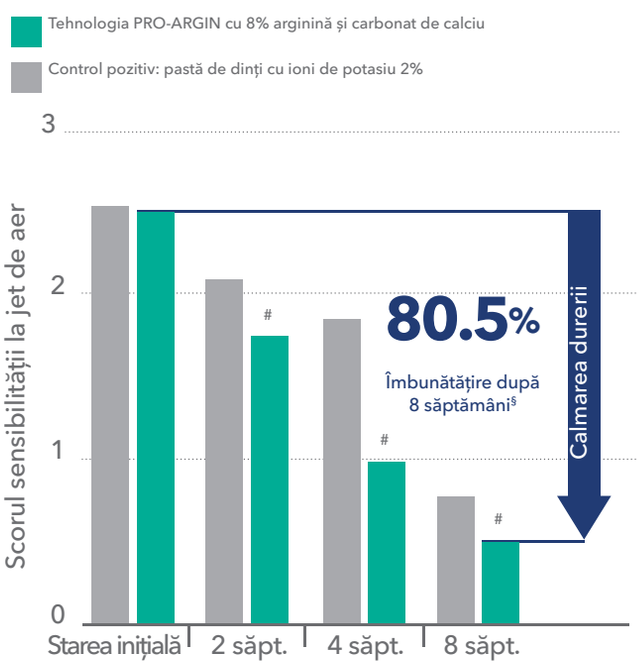
elmex® SENSITIVE PROFESSIONAL oferă calmare semnificativă imediată** și de durată a durerii din sensibilitatea dentară[3,4]

Calmarea semnificativă a durerii din sensibilitatea dentară instant[3,‡,**]



‡ În comparație cu starea inițială (sunt prezentate doar datele relevante)
• Semnificativ statistic (p<0,001)

Calmarea semnificativă de lungă durată a durerii din sensibilitatea dentară după 2, 4, și 8 săptămâni de utilizare[4,§,&]



§ În comparație cu starea inițială
& În comparație cu o pastă de dinți comercială desensibilizantă, ce conține 2% ioni de potasiu și 1450 ppm de fluor (NaF)
# Semnificativ statistic (p<0,05)

*Studiu in vitro, imagini reale de microscopie confocală după 5 aplicări (p<0,05%);
**Pentru calmarea imediată aplicați direct pe suprafața sensibilă și masați ușor cu vârful degetului timp de 1 minut.

Referințe: 1. Hines D, et al. Poster acceptat, July 2018 IADR. Colgate- Palmolive Company 2018.; 2. Hines D, et al. Poster #0742, March 2018 AADR. Colgate-Palmolive Company 2018.; 3. Nathoo S, et al. J Clin Dent. 2009;20(Spec Iss):123 –130; 4. Docimo R, et al. J Clin Dent. 2009; 20(Spec Iss): 17– 22.

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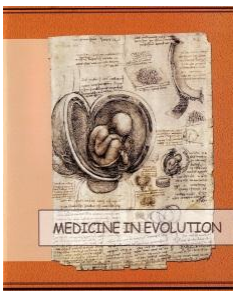
Diagnosis of laboratory in the infections produced by *Clostridium Difficile*



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Abstract

Aim and objectives: Regarding the diagnosis of laboratory in the infections produced by the gram-positive bacillus, anaerobe, *Clostridium Difficile* has as target the bacteriological examination, following the basic examination of the microbiological diagnosis of the infectious diarrheic syndrome, being represented by the cultivation of the fecal matters on specific culture mediums.

Material and methods: We accomplished a prospective and retrospective study, on eighty of clinical isolated samples of *C. Difficile* to identify and underline the genotypic and/or phenotypic characteristics between the isolated strains from cases of unique infections and those isolated from recurrent cases, based on the microbiologic diagnosis registered in the bacteriological register of the laboratory of medical analysis, S.C. Diaser, Oradea.

Results and discussions: The most important factor of virulence is the release of multiple toxins, and namely large glycosylated exotoxins A and B.

Conclusions: The placing of the diagnosis of laboratory in regard to *Clostridium Difficile*, is based on the culture and the detection of toxins in fecal samples.

Keywords: *Clostridium Difficile,* anaerobe, exotoxins, glycosylated

INTRODUCTION

In regard to the germination of the spores of *C. Difficile* it is supported by modifications of the composition of biliary acids. A small number of bacteria, producing hydrolase enzymes, has as result a reduction of the secondary biliary acids, that inhibits normally the growth of the vegetative cells and a simultaneous growth of the primary biliary acids as the cholate or the taurocholic acid that stimulates the germination of the spores [1-4]. It is observed that, while the cholate and the wistaria can promote the formation of spores of *C. Difficile*, the chenodeoxycholate acts as an inhibitor of the spores formation.

The bacteriocins are ribosomal synthetized antimicrobial peptides with activity of narrow or wide spectrum against other bacterial species [5].

C. Difficile is most frequently met in old age, presenting also a more severe result in this population. For the explaining of this phenomenon it is presupposed the existence of many mechanisms. Thus, a first mechanism if that of an innate or a humoral inadequate immune answer that can lead to a larger incidence and, also, to the severity of *C. Difficile* [6,7]. The second mechanism can be associated with the change of the intestinal microbial composition, for example, the loss of the bacterial diversity during the ageing, that could promote the colonizing of *C. Difficile* [8].

Aim and objectives

The purpose of this study regarding the diagnosis of laboratory in the infections produced by *C. Difficile* has as target the bacteriological examination, following the basic examination of the microbiological diagnosis of the infectious diarrheic syndrome, being represented by the cultivation of the fecal matters on specific culture mediums. This presupposes the isolation of the bacterial etiologic agent on adequate mediums and it identification based on the morphological characteristics, of culture, of exoenzymes and antigenic.

Objectives: Isolation without enriching or direct isolation; Identification corresponding to each methodology of investigation; Prominence of the utilization of enriching mediums for the isolation of the aerobe enteritis pathogens.

MATERIAL AND METHODS

We accomplished a prospective and retrospective study, on eighty of clinical isolated samples of *C. Difficile* to identify and underline the genotypic and/or phenotypic characteristics between the isolated strains from cases of unique infections and those isolated from recurrent cases, based on the microbiologic diagnosis registered in the bacteriological register of the laboratory of medical analysis, S.C. Diaser, Oradea.

Necessary materials for the performing of the examination: A recipient of collection (collection recipient of fecal matter with collecting spoon) with transport medium; Wood spatula; Latex gloves.

For the collection of fecal matter it has to be collected a sample of fecal matter of 5-10g introduced in the collection recipient of fecal matter with transport medium. If the stool is liquid, it will be collected 5 ml. It is recommended to be chosen a liquid, mucous and bloody portion, if there is one. Don't collect quantities larger than 10g because will reduce the chances of isolating the pathogen bacteria.

In regard to the collection, it has to be done as close to the beginning of the disease as possible and before the instauration of any antimicrobial treatment.

The collection from the stool spontaneous emitted – is preferred and is indicated in all the forms of acute diarrhea when the fecal matter emitting is frequent.

For the bacterial examinations, the collection is made with the collection recipient „spoon", concerning the liquid portions and, especially, those mucous and bloody portions, if there are ones. The volume of the collection has to be of minimum 5 ml or 3-5 cm3, if the stool is formed.

RESULTS AND DISCUSSIONS

There are performed in the suspension of fecal matters, directly, dispersions on two selective mediums. It is preferred added with 5% of ram defibrinated blood, agar phenethyl alcohol, that allows the growth of clostridia and other anaerobe gram positive in the intestinal content.

Agar with the yolk of egg, fructose and antibiotics (cefoxitin and cefoxitin and D - cycloserine). This medium with high selective capacities inhibits the other clostridia and anaerobe gram-positive cocci: they don't inhibit *C. Difficile*. Both mediums are anaerobe incubated 48 hours at 37°C.

The isolation with enriching, consists of the procedure of enriching that was recommended and is used currently for a suite of enteric pathogens that are dispersed in a small number on the unit of volume of fecal matters [8-10]. Following the pathogen process that was developed, the excreted bacteria are dispersed in a fecaloid mass becoming abundant by the inhaling of intestinal hydro-electrolytic liquids. As a consequence the reduces density of pathogens has determined the introducing of a process of enriching of the etiologic agent in salmonellosis, yersiniosis, cholera [12-14].

Regarding the low diarrheic syndromes, recto-sigmoidal and in post antibiotics therapy intestinal dysbacteriosis, the etiologic agent eliminated at a larger density doesn't need enriching that would modify the reports between the groups of bacteria composing the fecal matter.

The phases of the bacteriological examination by cultivation are presented below (Figure 1), after the initial phase, respectively the collection, the methodological lines regarding the isolation and identification corresponding to each methodology of investigation are: aerobe, microaerophilic and anaerobe.

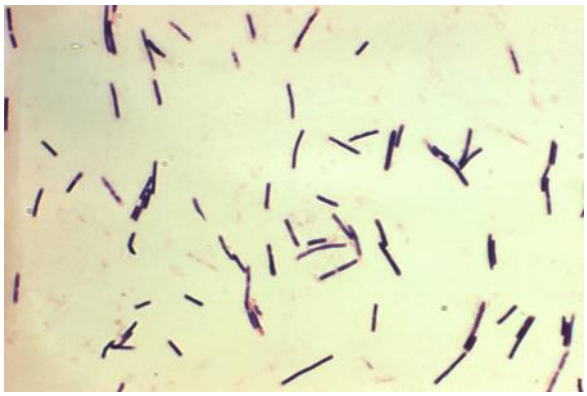

Figure 1. *Difficile*, gram-positive bacillus, anaerobe

From the registered data, regarding the isolation of the aerobe bacteria we are entitled to say that the aerobe bacterial etiology represents more than half of the known etiology of the diarrheic syndrome [15,16]. In part, this "dominant" is determined also by the possibilities of investigation, accessible to the most of the laboratories from the hospitals and anti-epidemic centers, that allow the specification of the etiology more frequently than in the case of other groups of bacterial etiologic or viral agents. Being known the unsuccessful isolation caused by the reduced number of etiologic agents on the unit of volume of the investigated sample, in some Enterobacteriaceae illness is recommended the "enriching of the inoculum by

subcultivation on medium that favor preferably the multiplication of the enteritis pathogens (Figures 2,3).

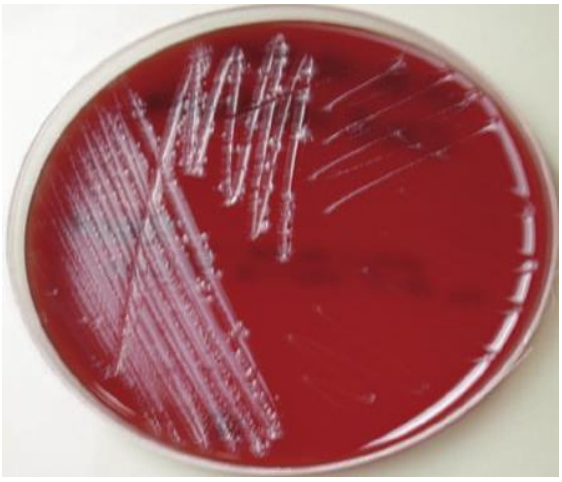

Figure 2. Colonies of *C. Difficile*, medium of blood agar

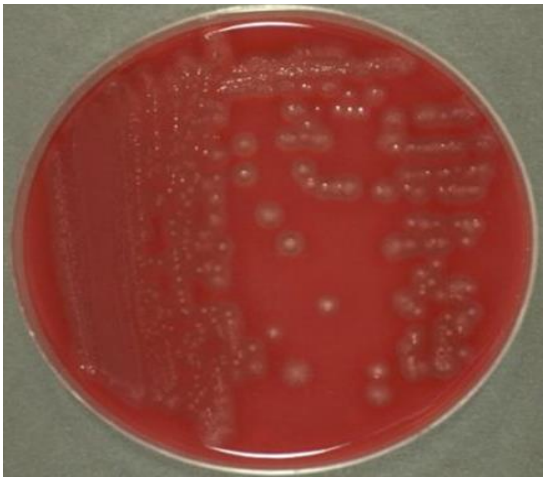

Figure 3. Colonies of *C. Perfringens*, medium of blood agar

The study regarding the "Detecting of *Clostridium difficile* and of toxins in samples of minced meat and cube of minced beef in modified atmosphere" underlined the prevalence of *Clostridium Difficile* in the packed sampled (MAP) minced (n: 50) and the samples of beef (n: 50); It was determined the toxin from the isolated samples and was detected the sensitivity to antibiotics, to metronidazole, vancomycin and clindamycin. *C. Difficile* was isolated 4%, from the 50 samples of minced beef and 2% from the 50 samples of cube beef. All the three isolated samples were confirmed by PCR as being *C. Difficile* by detecting the gene. Three of the isolated samples of 5 of *C. Difficile* presented toxigenic nature, two of them bore genes of toxin type B (tcdB), one of them toxin of type A (tcdA). When the profile of resistance to antibiotics was analyzed phenotypically, only *C. Difficile* type A (tcdA) was resistant to clindamycin. All the isolated samples were sensitive to vancomicin and metronidazole. The result of this study has demonstrated that the strains of *C. Difficile* detected in samples of beef packed in modified atmosphere (MAP) can be a possible problem for the public health.

The incidence of *Clostridium Perfringens* in difference food in USA was studies by Strang and the collaborators. They isolated this microorganism from 16,4% of the samples of raw beef, of chicken and of fish; from the condiments 5%; from fruits and vegetables 3,8%; from refrigerated food from the market 2,7% from the food prepared in housework 1,8%. In the minced beef, *C. Perfringens* in quantity of 100 or less per gram was found in 87% of the 95 of samples, while 45 of the 95 (47%) of the samples contained this microorganism in levels < 1000/g. In a study performed in USA, in the period 2001-2002 on 445 samples of totally minced muscle and emulsified of raw pork, of beef and of chicken, it was found that the spores of *C. Perfringens* did not cross 2,0 log_{10} being an average of 1,56 log_{10} ufc/g.

CONCLUSIONS

The placing of the diagnosis of laboratory in regard to *Clostridium Difficile*, is based on the culture and the detection of toxins in fecal samples. The culture is accomplished on a selective medium available on the market.

The morphology of the *C. Difficile* colony is typical also when it is examined at an optical microscope.

The definitive identification is best obtained by the chromatography of the liquid with gas.

The culture is very sensitive, but, when is used alone without testing the toxin, it leads to the low specificity and the wrong diagnosis when there are no symptoms.

The detection of the toxin by an analysis of cytotoxin in culture of tissue followed by the neutralization with specific antiserum is often considered standard.

With all these, this approach has no sensitivity and was not detected but only in 30% of the patients. Many immune-enzymatic tests (EIA) were introduced by different producers for the detection of toxin A alone or for both toxins A and B.

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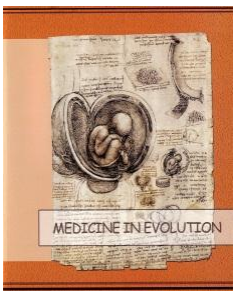
Rhinoplasty for beginners – article review



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Abstract

Rhinoplasty is a surgical procedure that mainly has a cosmetic role but also implies a functional one for the improvement of nasal obstruction. The wide variation in the patient's nasal anatomy and aesthetic desires make this surgery a difficult one. Throughout time, variable techniques have been described, like closed ones and opened ones. The last trends in rhinoplasty are the hybrid rhinoplasty and the preservation rhinoplasty techniques.

Taking into account all this, it is necessary to guide a beginner in rhinoplasty to some easier techniques and some cases with low difficulty.

Material and methods: We used the literature available in English by consulting the main medical databases (NCBI®, EMBASE®, Cochrane®), using as keywords for search: 'easy rhinoplasty techniques', 'first steps in rhinoplasty'. We analyzed the studies published in the last 15 years. Several reference books for rhinoplasty were also used.

Results: The first stage of rhinoplasty is represented by the preoperative analysis and discussion with the patient. Various questionnaires should be submitted prior to surgery to analyze the mental health status and patient expectations. The aesthetic principles of the face will be analyzed.

Open rhinoplasty techniques are perceived as easier due to the increased visibility and seem to be used more by beginners. A big hump, along with a skin of moderate thickness, without the need to correct the nose or the nasal pyramid is the most suitable case for the first steps in rhinoplasty. A combination of open and closed techniques that can be used for beginners is the open approach by transcolumellar incision.

Conclusions: Very important for a beginner in rhinoplasty is the correct selection of patients. This should include a careful psychological evaluation, and then the identification of low-difficulty surgical cases that can guarantee success at first. Open rhinoplasty with transcolumellar incision is a more accessible technique that can be used in selected cases until the surgeon has obtain sufficient experience.

Keywords: rhinoplasty, techniques, closed vs. open

INTRODUCTION

Rhinoplasty is a surgical procedure that mainly has a cosmetic role but also implies a functional one for the improvement of nasal obstruction. These surgical interventions have a big impact on facial expression and the correction of a single defect can provide a totally modified aspect of nasal pyramid. The correction can be done at the level of nasal bones (the correction of the base of the nasal pyramid), at the level of junctions between the bone and cartilage (for the nose hump) or at the level of allar cartilages (the correcting surgery of the nasal tip).

The wide variation in the patient's nasal anatomy and aesthetic desires makes this surgery a difficult one. For the surgeon, the challenge is mastering the endless number of operative techniques available (1), (2). Another major problem for a beginner surgeon is the ability to predict, before surgery, the difficulty of the procedure and the success rate of the result (2). Of course, the first step in understanding this operation is a very good knowledge of the nasal osteo-cartilaginous skeleton.

First rhinoplasties have been documented in Indian and Egyptian cultures in 18th century. Throughout time, there were described variable techniques like closed ones and opened ones. The last trends in rhinoplasty are the hybrid rhinoplasty and the preservation rhinoplasty techniques. These types of surgery allow the preservation of the structural integrity of the nose and also give the most natural aspect after the surgical intervention.

Taking into account all this, it is necessary to guide a beginner in rhinoplasty to some easier techniques and some cases with low difficulty.

MATERIAL AND METHODS

We used the literature available in English by consulting the main medical databases (NCBI®, EMBASE®, Cochrane®), using as keywords for search: 'easy rhinoplasty techniques', 'first steps in rhinoplasty'. We analyzed the studies published in the last 15 years. Several reference books for rhinoplasty were also used.

Using the data from the literature, we described the correlation between the types of nasal deformities and the difficulty of correcting them. We have summarized the simplest rhinoplasty techniques described so far.

RESULTS

Choosing the right patient

The first stage of rhinoplasty is represented by preoperative analysis and discussion with the patient who must have the following results: determine what the patient dislikes about his/her nose, perform an independent nasal analysis (physical exam), identify the anatomic etiologies of the cutaneous deformities, and overlap the two assessments so that patient and surgeon agree on a surgical plan (3).

Rhinoplasty is considered more than a surgical procedure alone, it is also referred to as 'psycho-surgery'. Successful rhinoplasty operations generally improve the health related quality of life, self-esteem, anxiety symptoms in people with good mental health. However, psychological results are not satisfactory in patients with significant depressive symptoms, severe personality disorders and psychosis. The assessment of decisiveness and psychology of the patients and exclusion of inappropriate patients with significant psychopathology before the surgical procedure are crucial for successful outcomes. Different questionnaires may be used before the operation to certify mental health status (4). The patient perspective in

outcome assessments can be measured using patient-reported outcome instruments, like FACE-Q scale (5).

Next, the aesthetic principles of the face will be analyzed. The nasolabial angle should be larger than 90° and 100° for male and female patients respectively. The nasofrontal angle is between 36 to 38 degrees. The aesthetic range of the nasomental angle is 120 to 130 degrees. In profile the columella should be 2-3 mm below the inferior border of the nostril and a double break of the columella as well as a slight depression in the supra-tip (supra-tip break) are also found to be pleasing, especially in women. These proportions can be used for guidance, but ethnic variability must also be taken into account (6).

Nabil Fanous et al. divided the nose into 3 levels of difficulty depending on the profile view, the frontal view and the thickness of the skin (2). These are described in Table 1.

Table 1. Nose difficulty depending on the profile view, the frontal view and the thickness of the skin

	Easy nose	Medium nose	Difficult nose
Dorsum	Big hump	Medium hump	Stright dorsum/saddle deformity
Skin	Average	Average	Very thick/thin
Tip	Mild/moderate problems	Mild/moderate problems	Severe recession, drooping, width
Pyramid	Mild/moderate problems	Mild/moderate problems	Very wide, thin, deviation

Aspects related to surgical techniques

One of the most confusing dilemmas in rhinoplasty is deciding on what technique to use to obtain the best results: open vs. closed. The practical difference between the two techniques is small, but the results are important. The open technique uses an incision made in the columella that allows the nasal skin to be lifted off the tip of the nose, allowing a greater operating field with a direct view of the nasal structure, resulting in improved precision in modeling the cartilages (more precision for difficult noses and when altering the nasal structures for more complex cases). Without the columellar incision, the closed technique allows for faster operation and less swelling during the recovery period.

As sequence of the surgical steps, it is recommended to first correct the nasal septum and then the external skeleton, and osteotomies in the dorsum should be performed before lateral osteotomies (7).

A study published in 2005 based on a rhinoplasty questionnaire about open and closed rhinoplasty approaches, completed by 178 surgeons, shows that younger surgeons perform open rhinoplasty more frequently than older surgeons for all procedures. Also for residents, 20% primarily learned the closed approach, and 60% primarily learned the open one.8 The indications for open rhinoplasty are: difficult tip surgery, crooked nose deformity, saddle nose deformity, cleft-lip nasal deformity, secondary rhinoplasty requiring complex structural grafting, septal perforation repair, selected nasal tumors.The endonasal approach may be used for: conservative profile reduction, conservative tip modification, selected revision rhinoplasty patients (8),(9).

The minimum number of procedures required to achieve proficiency in open rhinoplasty ranged from 20 to 100 with mean of 76.66 and in closed rhinoplasty from 40 to 200 with mean of 106 shows a study published by Yeoleker A. and Qadri H (10).

A closed rhinoplasty surgery that allows to visualize the entire cartilage frame of the tip and nasal septum is the marginal technique or open rhinoplasty without transcolumellar incision described in 1990 by Guerrerosantos, together with the extramucous technique. Using the marginal incision technique, the surgeon could correct the alar cartilages with "ad hoc" suture stiches, for the cases where a better tip projection is needed or a bulbous tip requires accentuation of the dome's angle. Applications such as hump resection, cephalic

excision from the inferior cartilage, caudal septum excision, lateral osteotomy, thin- ning of the skin, graft taken from the septum, cartilage grafting to the inferior lateral cartilage, interdomal suture, and supradomal cartilage graft can be performed easily using this method (11),(12).

How can I be better?

According to Rollin Daniel, a few principles that can improve your learning curve are Pre-op Photo Analysis, Write Out the Op Plan, Nasal Aesthetics Analysis and Anatomy, Intraop Instruments and Photos, Op Diagrams and Questions, Frequent post op Visits and Photos, Revisions, Reading and Meetings, Visit other surgeons/find a mentor, and give a presentation/write a paper (13).

Pietro Palma recommends that the first step a novice surgeon should take is to take part in anatomical dissections, preferably on fresh, frozen specimens. The second stage of development should include attendance at a recognised training fellowship programme, possibly with qualifying examinations at the end of the apprenticeship. The long learning curve mandates ongoing attendance at conferences, revision of anatomical knowledge and, importantly, seeking the assistance of senior surgeons through various mentorship programmes (14).

CONCLUSIONS

Rhinoplasty is considered to be one of the most challenging procedures in otolaryngology head and neck surgery. Meticulous planning and excellent surgical skills are pre-requisites for reproducible good outcomes. Patient selection must be done very carefully to obviate not only physical, but also psychological postoperative complications.

In the first stages of practice, surgeons must select the patients who have obvious deformities that can be easily corrected using surgical techniques that the surgeon knows. Declining surgery for complex cases should not be seen as a sign of weakness.

Open rhinoplasty with transcolumellar incision is a more accessible technique that can be used in selected cases until the surgeon has obtained sufficient experience.

The learning curve is long, protracted, and not to be taken lightly.

Compliance with Ethics Requirements:

"The authors declare no conflict of interest regarding this article"

"The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law. Informed consent was obtained from the patients included in the study"

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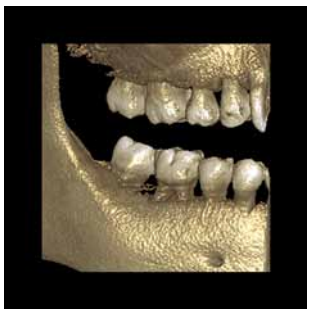

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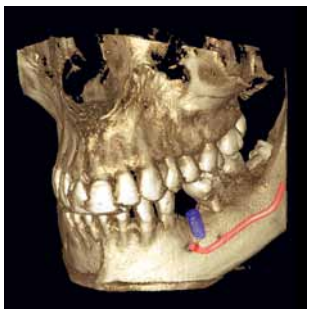

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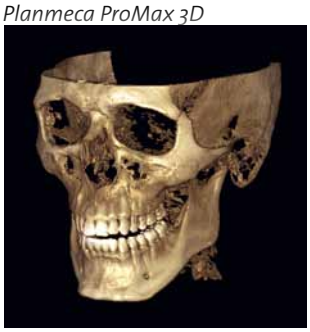

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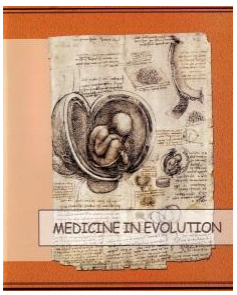
Evaluation of different education methods used in oral health education for adolescents



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Abstract

Background: Oral diseases are one of the most prevalent conditions in the world and are largely preventable. In recent years, attention has been drawn toward assessing the effectiveness of oral health education programs. The aim of study is **to** investigate the most effective method used in oral health education according to the Adolescents perception.

Material and methods: In the prospective cohort study the initial sample of 832 students was subdivided into 4 subgroups, each group being implemented an educational program Results: At the initial evaluation, for each study group, the following average value of the toothbrush frequency score was found: 1.54 students in group I, 1.59 for students in group II, 1.59 for students in group III and 1.50 for students in group IV, control. The average value of the initial score of the frequency of tooth brushing does not show statistically significant differences in the four study groups (p = 0.615). On reassessment, the average value of the toothbrush frequency score was as follows: 1.66 for students in group I, 1.65 for students in group II, 1.76 for students in group II and 1.55 for students in group IV, Control. The average value of the final toothbrush frequency score has a significant upward trend (p = 0.001)

Conclusion: Educational methods influence the knowledge about oral health, with individual demonstration proving to be the most effective method for acquiring knowledge. In the adolescents' view, the participatory activity was the preferred method.

Keywords: adolescents, oral health education, educational methods, oral health program

INTRODUCTION

Oral diseases are one of the most prevalent conditions in the world and are largely preventable. In recent years, attention has been drawn toward assessing the effectiveness of oral health education programs [1].

Prevention of disease, disability and suffering should be a primary goal of any society that hopes to provide a decent quality of life for its people [2, 3]. Prevention on the community or population-based level is the most cost-effective approach and has the greatest impact on a community or population, whether it is a school, neighborhood, or nation [4]. An effective community prevention program is a planned procedure that prevents the onset of a disease among a group of individuals. Many different approaches to preventing dental diseases exist and the most cost-effective method is health education [5, 6].

Health education is any combination of learning experiences designed to facilitate voluntary actions conducive to health. These actions or behaviors may be on the part of individuals, families, institutions, or communities. Thus, the scope of health education may include educational interventions for children, parents, policy makers, or health care providers [7]. It has been well-documented in dentistry and other health areas that correct health information or knowledge alone does not necessarily lead to desirable health behaviors [8]. However, knowledge gained may serve as a tool to empower population groups with accurate information about health and health care technologies, enabling them to take action to protect their health [9].

Aim and objectives

The aim of study was to investigate the most effective method used in oral health education according to the adolescent's perception.

MATERIAL AND METHODS

The initial sample of 832 students was subdivided into 4 subgroups, each group being implemented an educational program, which included the following stages:

Stage I - assessment of knowledge, attitudes and behavior towards oral health, using the questionnaire survey (with 22 questions and assertions);

Stage II - implementation of the health education method as follows:

• Sample I - interactive discussion, lasting 10 minutes and activities in small groups, with the practical demonstration of the correct brushing technique and the involvement of students through the subsequent practice of the technique on the didactic model. This method of education included information on the morphology, structure and functions of teeth, the role of microbial dental plaque and nutrition in the etiology of tooth decay, prevention of tooth decay by brushing and using adjuvants brushing and non-carious diet, increasing addressability to dental offices. The methods of health education, applied to this study group, will be hereinafter referred to as unitary, generic, method 1.

• Sample II - watching an animated educational film "Journey to the Tooth Kingdom" ("Dr. Rabbit and the Legend of the Tooth Kingdom"), and activities in small groups, with a practical demonstration of the method of correct brushing and student involvement by practicing the brushing technique on the didactic model. The methods of health education, applied to this group of students, will be hereinafter referred to as unitary, generic, method 2.

• Sample III - watching the educational animation film, interactive discussion and later activities in small groups, with the practical demonstration of the correct brushing method and the involvement of students by practicing the brushing technique on the didactic

model. The methods of health education, applied to this study group, will be hereinafter referred to as unitary, generic, method 3.

• Sample IV - constitutes the control group (control). For ethical reasons, this group benefited from the practical demonstration of the correct brushing method and the involvement of students by practicing the brushing technique, on the didactic macro-model. Given the fact that only the toothbrushing technique was implemented in this group of students, I will refer to method 4 during the study.

Stage III - conducted at an interval of 3 weeks from the previous stage, found in the reassessment of knowledge, attitudes and behavior towards oral health using the simplified initial questionnaire, consisting of 16 questions and assertions.

RESULTS

The oral hygiene status at the initial evaluation of the first stage of the educational program didn't differ significantly across the 4 groups. This criterion was partially met, but not for the microbial dental plaque index (hereinafter referred to as IP-initial) The distribution of the brushing frequency does not differ significantly in the 4 batches ($x^2 = 4,368$, DF = 6, p = 0.627).

When evaluating the phrase "Dental caries affects my physical appearance", the correct, expected answer is "yes". Typically, students who answered "yes" to the initial assessment before implementing each method of health education will also respond correctly to the reassessment. This can be verified, but not 100%. Thus, only 94.6% of the students in "Groups I, II, III" and 98.5% of the students in "Group IV" maintained the correct answer. The difference between these percentages is not significant ($x^2 = 3.784$, DF = 2, p = 0.151).

Also, regarding the students who had a different opinion and chose a different answer than the expected one, given that the method of health education was effective, some of the students from "Groups I, II , III "and to a lesser extent" Sample IV, should re-evaluate their opinion and give the correct answer in the re-evaluation. Indeed, analyzing the percentages corresponding to the students who initially answered "no", it is found that on reassessment 46.6% of the students in "Groups I, II, III" and 11.1% of the students in sample IV" and they corrected the answer. The difference between these percentages is significant ($x^2 = 13,132$, DF = 2, p = 0.001).

A similar finding is obtained in the case of students who initially answered, "I don't know". The reassessment shows that 77.8% of the students in "Groups I, II, III" and 43.5% of the students in "Group IV" corrected their opinion and gave the correct answer. The difference between these percentages is significant ($x^2 = 13,360$, DF = 2, p = 0.001).

When evaluating the phrase "Tooth brushing prevents tooth decay", the expected, correct answer is "yes". Among the students who answered ”yes” to the initial assessment, 95.09% of the students from samples I, II, III ” and 96.79% of the students Sample IV maintained their opinion during the re-evaluation. the difference between these percentages is not significant ($x^2 = 1.622$, DF = 2, p = 0.444).

Analyzing the percentages corresponding to the students who initially answered with ”no”, it is found that at the reassessment 63.92% of the students from samples I, II, III ” and 22.22% of the students from sample IV corrected their opinion, highlighting the fact that the health education methods applied to the study groups were effective. The difference between these percentages is significant ($x^2 = 18.919$, DF = 2, $p<0.01$).

The most interesting aspect is that, in the case of students who answered ”knowing” at the initial assessment, 60% of the students from samples I, II, III and 20% of the students from sample IV answered the opinion, choosing the correct answer, that is, the answer "yes". The difference between these percentages is significant (p = 0.038, linear association test).

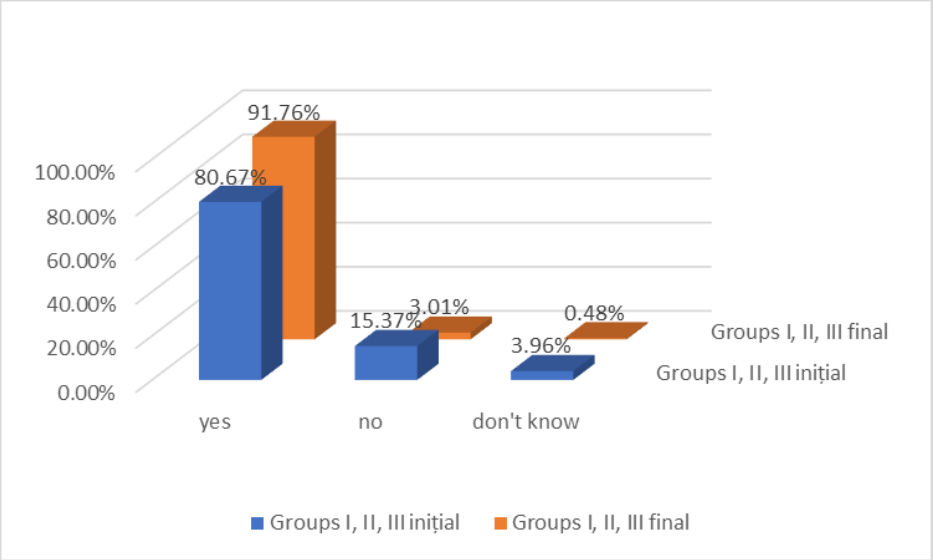

Figure 1. The evolution of the knowledge regarding the role of toothbrushing in the prevention of dental caries, at the evaluations within the educational program

When evaluating the phrase "Brushing your teeth prevents gum problems", the expected, correct answer is "yes". Among the students who answered ”yes” to the initial assessment, 91.95 % of the students from samples I, II, III and 96.95 %% of the students from sample IV maintained their opinion. The difference between these percentages is not significant ($x^2 = 3.352$, DF = 2, p = 0.187).

Analyzing the percentages corresponding to the students who initially answered ”no”, it is found that at the reassessment 57.37 % students from Samples I, II, III and 30% of the students from Sample IV corrected their opinion, highlighting that the methods of education for health applied to the study groups were effective. The difference between these percentages is significant ($x^2 = 9{,}294$, DF = 2, p = 0.010).

The most interesting aspect is found in the case of the students who answered ”I don't know” at the initial assessment, 63.77% of the students from Samples I, II, III and 23.53% of the students from Sample IV clarified their opinion, choosing the correct answer, meaning "yes". The difference between these percentages is significant ($x^2 = 12.724$, DF = 2, p = 0.002).

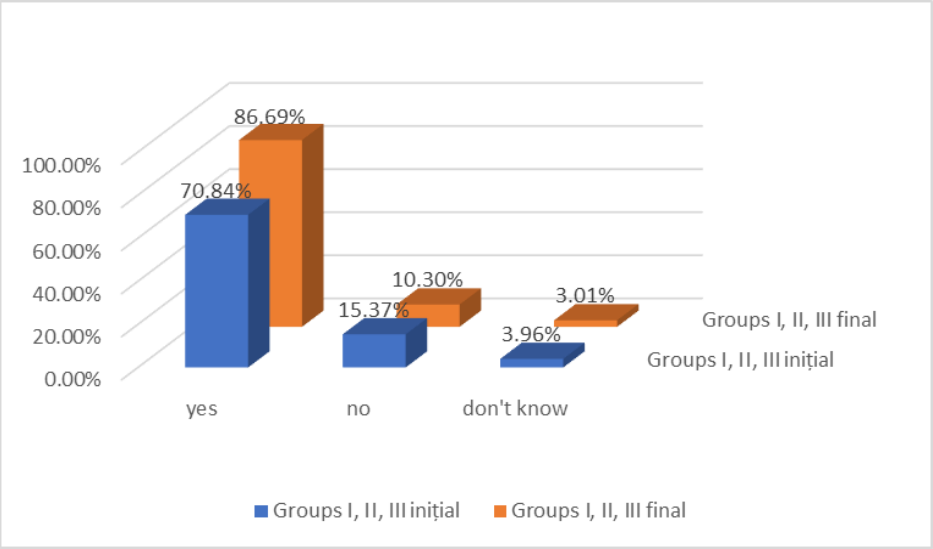

Figure 2. The evolution of the knowledge regarding the role of toothbrushing in the prophylaxis of periodontal diseases, at the evaluations within the educational program

When evaluating the phrase "I'm afraid to go to the dentist, due to possible pain", the expected, correct answer is "no". Of the students who answered "no" to the initial assessment, 95.44% of the students in "Groups I, II, III" maintained their opinion during the re-assessment and 96.53% of the students in sample IV" corrected their opinion.

In contrast, 85.71% of students in groups I, II, III and 78.95% of students in group IV maintained their initial answers, highlighting that the health education methods applied to the study groups did not reach the purpose of reducing the degree of anxiety about dental treatment. However, the difference between these percentages is not significant (x^2 = 2,583, DF = 2, p = 0.275).

In the case of students who answered "I don't know" at the initial assessment, the re-assessment shows that the answers were similar for both categories of groups.

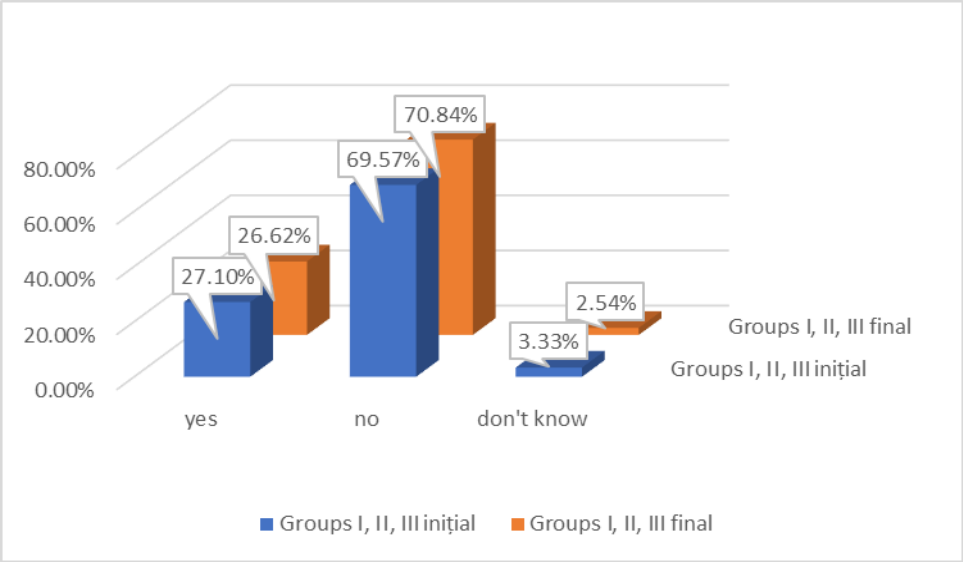

Figure 3. The evolution of the degree of anxiety of the students towards the dental treatment, at the evaluations within the educational program

Research aimed at evaluating the effectiveness of oral health education methods on knowledge, behavior and anxiety has reached the same conclusion: maintaining the degree of anxiety of patients at the same level, at the end of the educational process.

The impact of health education methods on students' eating behavior, in the evaluations within the educational program shows the following results.

In the case of the question ”At what time intervals do you consume one of the following foods? ”, the answer options allow the assessment of health on a numerical scale with 5 steps, as follows: 1 = several times a day; 2 = every day; 3 = 2-3 times a week, 4 = once a week and 5 = never. In order to analyze the results obtained by self-administering the questionnaire containing this question, before and after the implementation of health education methods, we calculated the averages of these scores, both for students in samples I, II, III and for those in sample IV. It should be noted that, on reassessment, the increase in the average score highlights the consequent reduction in the consumption of carbohydrate-rich foods.

In the case of students in group IV, the re-assessment found a significant evolution, from a statistical point of view, of the consumption of chewing gum (p = 0.002, milk sweetened with sugar (p <0.001) and at the limit, tea sweetened with sugar (p = 0.0532), as an expression of the obvious increase in food consumption. These differences can be attributed to random, unsystematic causes.

In contrast, in the case of students in "Groups I, II, III", the revaluation found an increase in the average score for all foods, except milk and fruit, which shows a reduction in the consumption of foods rich in sugars. The application of the Wilcoxon test shows the statistically significant evolution in the consumption of all foods ($p < 0.001$), except fruits.

At the initial assessment, for each study group, the following average value of the toothbrush frequency score was found: 1.54 for students in group I, 1.59 for students in group II, 1.59 for students in group III and 1, 50 for students in group IV, control. The mean value of the initial toothbrush frequency score did not show statistically significant differences in the four study groups ($p = 0.615$ for the ANOVA test).

On reassessment, the average value of the toothbrush frequency score was as follows: 1.66 for students in group I, 1.65 for students in group II, 1.76 for students in group II and 1.55 for students in group IV, Control. The average value of the final score of the toothbrushing frequency has a significant upward trend ($p = 0.001$, ANOVA test for linearity) as follows: the minimum value for group IV, the maximum value for group III; there is no significant difference between groups I and II.

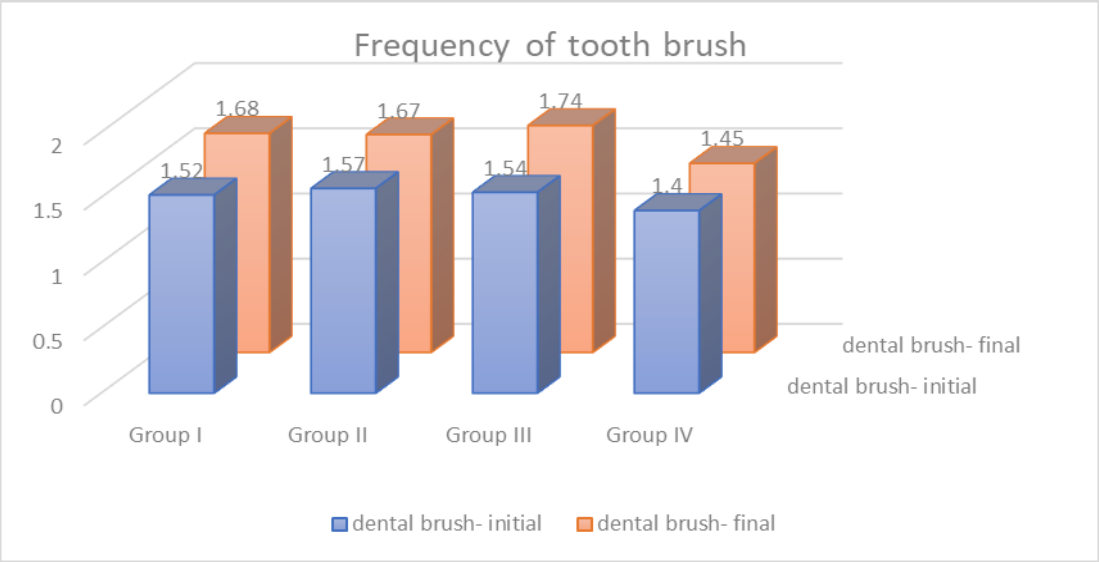

Figure 4. Evolution of the average value of the toothbrush frequency score

DISCUSSIONS

Given the conclusion regarding the reduction of the microbial plaque index, it can be stated that the main benefit of the educational program is not the frequency of brushing, but the quality of brushing.

A. The ascending order of the efficiency of the educational methods applied within the educational program is the following: method IV (tooth brushing technique), method 2 (animated educational film + tooth brushing technique), method 1 (interactive discussion + tooth brushing technique), method 3 (educational animation film + interactive discussion + toothbrushing technique).

B. The efficiency of the interactive discussion (method 1) is higher compared to that of the animated educational film (method 2) on the dental health and oral health behavior of students in the study groups, but the difference in favor of the interactive discussion is not is high: about 7% for IP. In the case of using another type of educational film and another structure of interactive discussion in an educational program, it is possible to reverse the order of effectiveness of these types of health education methods. What must be remembered is that the interactive discussion and the animated educational film had a comparable

efficiency on the state of dental health and behavior towards the oral health of students in the study groups, of over 30%.

C. The significant efficiency (12%) of the exclusive application of the toothbrushing technique (method 4) on the dental health condition and the behavior towards the oral health of the students, highlights the low level of health education in the students aged between 11 and 12 years and emphasizes the need for immediate implementation of oral health programs.

D. The highest efficiency on the dental health status and behavior towards the oral health of the students in the study groups was found in the case of the implementation, in the same session, of the educational animation film and the interactive discussion (method 3). This fact is not surprising from the point of view of psycho-pedagogical principles, but it should be noted the very high percentage of reduction in the average microbial dental plaque index, over 50%.

CONCLUSIONS

Organize conclusions which emerge from the study. In the end state: a) contributions to be acknowledged but which do not justify paternity right; b) thanks for technical support; c) thanks for financial or material support.

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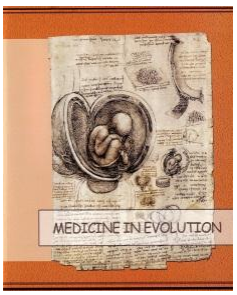
Anamnestic evaluation of the patient treated with bisphosphonated: A questionnaire based survey



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Abstract

The management of patients undergoing bisphosphonate treatment in the dental office has become a challenge for doctors since the discovery of the side effects of these substances in the oral cavity.The aim of the study was to evaluate the way in which the patient's anamnesis is performed in the dental office, in direct connection with the diseases treated with bisphosphonates (osteoporosis, Paget Disease and oncological pathology). The present study was conducted by applying a questionnaire (which included 11 closed questions) that assesses the importance given to the patient with these conditions and to estimate the level of information of the dentists about the management of these patients.Although the literature is rich in information abouy bisphosphonates and their side effects, the results obtained by applying the questionnaire showed that: 63.36% of dentists do not ask questions about osteoporosis during anamnesis, and 85% of them voluntarily discontinue the bisphosphonates treatment without consulting a specialist.

Keywords: bisphosphonates, anamnesis, osteonecrosis of the jaws

INTRODUCTION

Among the medical branches, dentistry occupies a well-defined place, with a significant importance in terms of workload, time and value of the obtained results, with a logical inclusion in the wider sphere of general health of patients, so it is normal and necessary to remove the specific therapeutic maneuvers from the area of random and empirical, and be followed by detailed and rigorous substantiation on modern scientific bases.

The dental treatment plan must be individualized, in relation to the general medical conditions of the patient, whose presence can be established using data that the doctor can obtain through a judicious anamnesis and a rigorous objective, complex and complete clinical examination. There is a need for a multidisciplinary therapeutic approach, working in a medical team, delegating certain responsibilities to specially trained and competent staff, collaborating with the general practitioner and other specialties (as appropriate), which manages the evolution of patients' general ailments. (1)

Bisphosphonates are the most commonly used therapeutic class in patients with postmenopausal osteoporosis. Their pharmacological and therapeutic effects at the bone level are due to the inhibitory action of resorption over the activity of osteoclasts and the induction of their apoptosis, which is why they are administered in other conditions such as Paget's disease, bone metastases in various neoplasms, malignant hypercalcemia.

The most important side effect of bisphosphonate treatment is osteonecrosis of the jaws. Knowledge of the pathogenesis of this new clinical entity requires a good collaboration between dentists, maxillofacial surgeons, oncologists (2,3) for the benefit of the patient. Moreover, as dentoalveolar surgery seems to precipitate the occurrence of osteonecrosis of the jaws related to bisphosphonate therapies, alternative attitudes to dental extractions are recommended for patients with a history of bisphosphonate treatment. Restorative dental procedures should be performed to treat caries and remove defective fillings. Routine restorative dental procedures that can cause continuity damage such as treating cavities and removing defective fillings can trigger side effects of the medication. For some of these patients, longer dental crowns and fixed restaurations are not an optimal solution. (4,5) Mobile dentures should be evaluated for stability and dental occlusion, making necessary adjustments as needed. In totally or partially edentulous patients, one of the aims is minimizing as much as possible the stress exerted by the dentures on the underlying oral mucosa.

The increasing frequency of cases of osteonecrosis of the jaws in patients undergoing bisphosphonate treatments requires obtaining more prospective data that helps in ranking the risk factors that contribute to the occurrence of necrotic maxillary lesions and allow the development of a valid universal standardized treatment protocol for this pathology. (6,7,8,9)

Aim and objectives

The aim of the study was to evaluate the way in which the patient's anamnesis is performed in the dental office, in direct connection with the diseases treated with bisphosphonates (osteoporosis, Paget Disease and oncological pathology).

MATERIAL AND METHODS

This study is a cross-sectional, correlational and observational study. It was made by applying a questionnaire to a number of 400 dentists participating in a conference in western Romania. Out of the total participants, 298 questionnaires were returned. 2% of the questionnaires were excluded due to partial completion or multiple ticking of the answers.

The questionnaire includes 11 closed questions assessing how dentists perform the patients anamnesis regarding bisphosphonates and how they manage these patients.

The questionnaire was validated by a study on a group of 35 dentists, the value of the Cronbach alfa index being 0.947 which is a good value in relation to the required threshold (0.700) to validate the application of this questionnaire. The questionnaire was distributed by a single person, and the subjects were not allowed to consult any information during its completion. Statistical analysis was performed with Microsoft Excel.

RESULTS

Only 63.4% of dentists during the anamnesis ask if the patient suffers from osteoporosis, 36.6% omit the importance of this condition.

Paget's disease, together with its treatment, involves a certain working protocol in patients with this condition, but only 38% of dentists ask questions about this disease. 61.5% omit to ask about it.

76.3% of dentists in this group assign a special section to oncology patients. 23.66% do not consider it necessary to ask questions about neoplastic diseases.

Bisphosphonates have many side effects in the oral cavity. 71.8% of dentists in the study group know data about these effects, while 28.2% of them were not informed.

The frequency of knowledge of complications after dental procedures in patients treated with bisphosphonates is 73.7%. 26.3% have no knowledge about dental procedures in patients treated with bisphosphonates.

Table 1. Results obtained in the evaluation questionnaire

Question	*Yes %*	*No%*
1.Does the history provide questions related to the treatment of osteoporosis?	36,64%	63,36%
2.Does the history provide questions regarding the treatment of Paget's Disease?	61,45%	38,55%
3.Does the anamnesis provide questions related to the treatment of oncological diseases?	23,66%	76,34%
4.Do you know the medical implications of bisphosphonate administration in patients involved in dental treatment?	28,24%	71,76%
5.Do you know the complications of extraction and other dental procedures in patients treated with bisphosphonates?	26,34%	73,66%
6.Do you know the trade names of bisphosphonates?	56,49%	43,51%
7.After the patient informs you that he is being treated with bisphosphonates, do you send him back to the specialist for discontinuation?	29,39 %	70,61%
8.If the patient has informed you that he is being treated with bisphosphonates, do you independently discontinue bisphosphonates during dental treatment (without consulting a specialist)?	14,50%	85,5%
9.If the patient has informed you that he is being treated with bisphosphonates, do you perform antibiotic prophylaxis treatment?	40,08%	59,92%
10.If the patient has informed you that he is being treated with bisphosphonates, do you refer the patient to the maxillofacial surgery service?	44,27%	55,73%
11.Did you know that bisphosphonates are found in the bones up to 10 years after treatment?	60,69%	39,31%

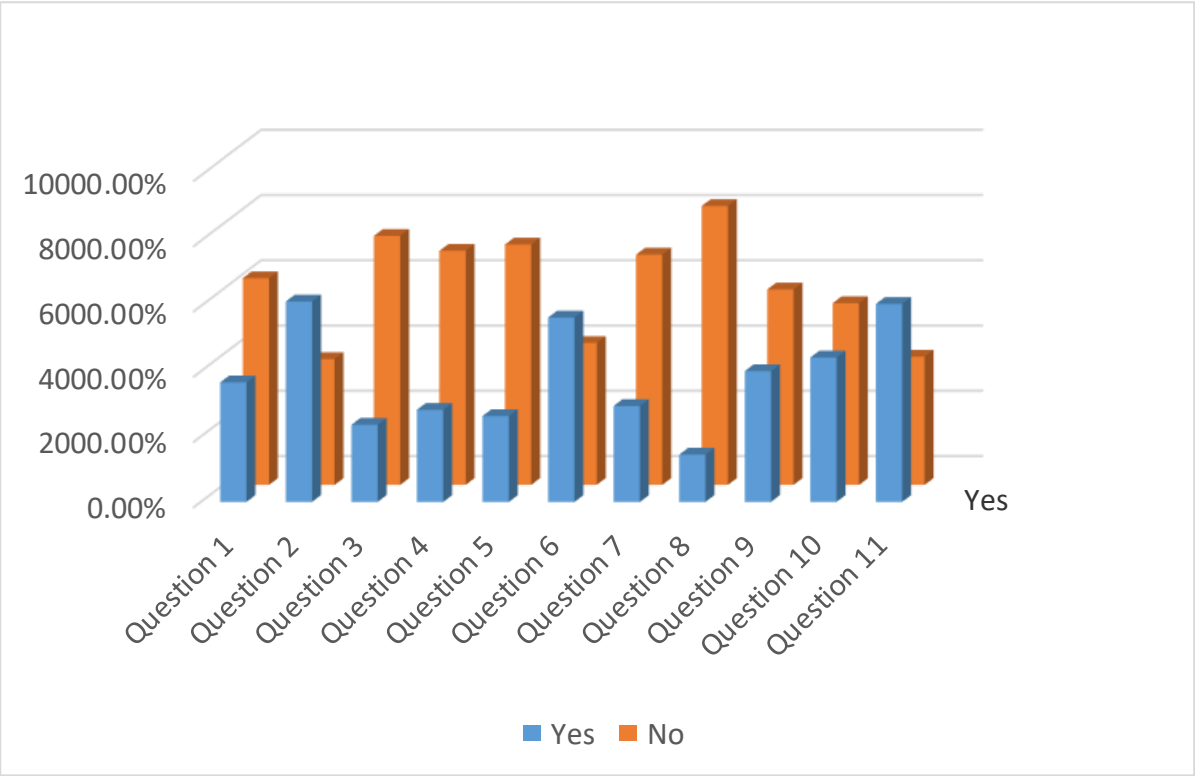

Figure 1. Results obtained in the evaluation questionnaire

The trade names of bisphosphonates are very important, especially the usual ones. 56.5% of dentists do not know the commercial name of bisphosphonates, but 43.5% are aware of them.

When the patients inform the dentists that they are being treated with bisphosphonates, 70.6% of the dentists send the patients to the specialist to stop the treatment.

The bisphosphonate treatment is prescribed by the specialist doctor and its administration should not be interrupted by the dentist, a fact performed by 85.5% of dentists included in the study group.

59.9% of the dentists studied perform antibiotic prophylaxis during dental treatment, a prophylaxis that is not indicated by a specialist. Instead, 40% perform the maneuvers without taking into account the patient's ailments.

When the doctor is informed by the patient that he is under treatment with bisphosphonates, 55.7% of the studied group redirect the patient to the maxillofacial surgery service.

The presence of bisphosphonates in the bone matrix up to 10 years after their administration is known only 39.3%. 60.7% have no knowledge of this fact.

DISCUSSIONS

The results obtained after analyzing the questionnaires applied to dentists in the western part of Romania draw attention to the frequency of the anamnesis and their knowledge about the oral effects of bisphosphonates and the management of patients undergoing this treatment.

Osteoporosis, Paget's disease of the bone, and oncological diseases are diseases that have included bisphosphonates in their treatment. Thus, targeted questions about these ailments are needed to find out whether patients are or have been treated with bisphosphonates. Of these three, the highest incidence is the question related to oncological

diseases (76.3%), followed by the question about osteoporosis (63.4%) and then about Paget's disease (38%).

Lerman MA. Et al, have highlighted the ambiguity of doctors in this country about how to manage this disease, especially in the effectiveness of surgical treatment, adjuvant therapies and the use of minimally invasive dental therapy for patients with bisphosphonates treatment (10,11), as evidenced in the present study there are some certain ambiguities in the management of patients treated with bisphosphonates(12).

The main adverse effect of bisphosphonates is osteonecrosis of the jaws, an effect that occurs in most cases after bleeding operations in the oral cavity. Thus, dentists must know very well the working protocol for these patients. The side effects of bisphosphonates are known by 71.8% of the studied doctors, while 28.2% have no knowledge of these manifestations in the oral cavity, and represent a risk of not providing proper treatment, performing some dental procedures which can cause osteonecrosis. The usual trade names for bisphosphonates should be known to dentists, as most patients only know them without knowledge of the name of the active substance. When the dentist informs the patients that they are being treated with bisphosphonates, 70.6% of them send the patient back to the specialist to stop the administration of bisphosphonates, a treatment that cannot be interrupted by the dentist. Surgical procedures in these patients must be done in the maxillofacial surgery service, which is performed by 55.7% of dentists, and not to be performed in regular offices under antibiotic prophylaxis. The presence of bisphosphonates in the bone matrix up to 10 years is very little known by dentists in this group, and by that, they risk producing osteonecrosis of the jaws even after stopping treatment. Although there are some limitations in understanding the etiology of osteonecrosis of the jaws secondary to bisphosphonate treatment and the risk factors are diverse, dentists need to know the side effects of the therapy and working protocol regarding these patients. (13, 14)

Lana El Osta, with collaborators, applied a questionnaire regarding osteonecrosis of the jaws secondary to the bisphosphonate treatment to a group of 137 doctors, and the results revealed poor knowledge regarding this complication. (15) Although the correlation between bisphosphonate therapy and osteonecrosis of the jaws has been discovered relatively recently, the severity of the complications leads to the need for a thorough knowledge of the implications of this treatment. (16) The risk factors are the type of bisphosphonate administered, the duration of treatment but also the method of administration, intravenously or orally. (17) Therefore, dentists need to know the classes of bisphosphonates and their side effects in order to achieve good management of patients undergoing this treatment. (15) The limitations of the study are the discrepancies between the answers, which indicates the existence of uncertainty in the patient management under bisphosphonate treatment. Bisphosphonate therapy is a major risk of developing jaw osteonecrosis. The detailed history of the patients and the communication with the doctors who prescribe this treatment must be as effective as possible during the dental treatment.

CONCLUSIONS

Despite the fact that the literature is abundant in information on bisphosphonates and their side effects, there are dentists who do not know the effects of these drugs.

In addition to ignoring the patient's bisphosphonate treatment, dentists perform maneuvers on the dentomaxillary apparatus, which can inevitably lead to a deterioration of the patient's entire clinical condition.

It is important that each dentist perform a detailed history and be aware of the medical management of patients undergoing bisphosphonate treatment. Therefore, all physicians need to be trained in how to approach patients following this treatment.

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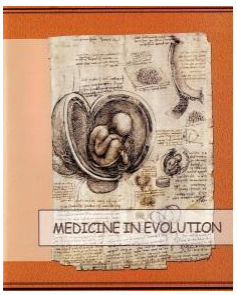
Loupes - the first step towards an enlarged image and optimal visibility in dentistry



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Abstract

Dentistry is a field that involves working on small structures, difficult to access and visualize. In order to perceive the details of finesse, it is necessary to enlarge the image with the help of specially designed systems, of which a first option are the loupes. The dentist who engages in the search for loupes suitable for his practical needs must know a specific optical terminology and deepen a series of technical details that characterize the different types of loupes on the market. Each of them has different degrees of magnification, possibilities of adaptation during work, different advantages and optical disadvantages, which can make the choice difficult. This article summarizes this information. In conclusion, it follows that currently available loupes are complex optical systems that can be of great help to the dentist, provided they are thoroughly known and assimilate a correct way of use.

Keywords: magnification, Galilean system, Keplerian system.

INTRODUCTION

Dentistry is about working on small tissue structures, their correct visual perception implies pushing the operator's visual capacity close to its natural limit. In general, increasing the size of the object image is useful for perceiving fine details. Therefore, in order to increase working precision and to obtain high quality practice, optical magnification systems are necessary [1]. The size of the image can be enlarged either by bringing the object closer to the eye or through the use of optical magnification systems. The use of optical magnification systems in dentistry enables the increase of the working distance and allows the external ocular muscles to remain relaxed and the physician's posture not to be affected [1].

The different specialties of dentistry have different challenges regarding technical execution, but the condition of optimal visibility remains generally valid. Several specialties of dentistry, which require increasing accuracy and precision of execution are the beneficiaries of the optical magnification systems. Thus, special challenges regarding visibility can be encountered in endodontics, prosthetics, periodontics, orthodontics and implantology.

Magnification systems enable the achievement of high levels of performance, otherwise impossible to achieve. To this matter dental loupes bring an important contribution, while the operating microscope excels. The use of magnification systems opens an era of "micro" interventions: micro-dentistry, micro-endodontics, micro-surgery, etc. Special endodontic interventions (perforation detection, location and removal of fractured instruments, etc.) or microsurgery are just a few convincing examples [1]. Modern endodontics also benefits from other tools designed for improving visibility - the endoscope and the orascope [2].

Aim and objectives

Ensuring optimal visibility of the operating field is a major problem in dentistry and a challenge from the ergonomic perspective. How to obtain optimal visibility, how to maintain it throughout the medical procedure and what are the limitations of this desideratum in current practice are questions that naturally arise to the dentists. The doctor's perception of the dimensions of the operating field, the degree of fidelity of the perception and the level of detail noticed in current practice influence the quality of the medical act and of the entire treatment in general.

The benefits of using magnification

The main benefits of using magnifying systems are:

a. improving visibility on fine details of the operating field;

b. compensating for presbyopia;

c. ensuring a correct posture of the operator.

a. Magnifying the image helps the practitioner not only to see more, but also to see better, to receive visual information that helps him diagnose and treat. With the naked eye, most practitioners cannot see an edge, a limit below 0.2 mm. At this level and below it there are details that must be perceived for accurate therapeutic interventions [3]. One can say that magnifying the image in dentistry brings us closer to the reality we want to see [4]. The human eye offers a magnification of 0.068 cm, considered a 1x magnification. Current magnifying systems offer a magnification of 2.5 x to 40 x. Magnifying the image with specific tools involves enlarging the image on the retina [2].

b. Visual acuity implies the ability to perceive details and to accomplish accommodation; it is affected when presbyopia is installed. Visual acuity is determined by the threshold to which fine details of an object are perceived, the perception being dependent on the angle of view. Details perception implies a linear dimension- it is the distance to which 2 visual elements are perceived separately. This value is directly dependent to the distance at

which the object is placed (the smaller the distance, the larger the image of the object) and the light intensity. Eye accommodation is the ability of the eyes to change their optical characteristics in order to focus on an object [5].

Presbyopia is characterized by the progressive loss of ocular accommodation due to sclerosis of the ocular lens, increased sensitivity to brightness and decreased sensitivity when perceiving contrasts. It occurs near the age of 40, but it is often discovered and corrected a few years later, when it limits daily activity.

Due to aging, it is recommended that dentists perform a periodic eye examination every 2 years by age of 50 and annually after this age. Working distance increases with age and with the appearance of presbyopia, but the use of corrective systems (glasses and loupes) brings the working distance back to a level convenient for the doctor's posture [6].

c. The ergonomic benefits of magnification systems vary depending on their type and the correctness of their use. Choosing the right magnification system, adjusting it properly and going through a period of learning and adaptation will allow the doctor to adopt a correct working posture and to avoid wear out of the neck and back. Dentists should be aware of how the use of magnification systems affects them on short or long term. For some doctors, the adjustment process can be quite difficult, but those who have managed to introduce the use of magnification systems into current practice appreciate the improved visibility and the benefits of correct posture [6].

Improved visibility also leads to a shorter working time, another significant ergonomic advantage [7].

There are two main types of optical magnification systems used in practice: loupes and operating microscope [1,8]. This article focuses on dental loupes and does not elaborate the operating microscope.

Loupes are an ideal first step in working with magnification systems because they allow the operator to adapt his vision and adjust to the changes in hand-eye coordination relatively easily. They are also the most frequently used magnification system in dentistry [2,8]. The efficient use of dental loupes requires a good knowledge of their characteristics, a correct type choice and the completion of the learning steps through which one reaches a good hand-eye coordination when using these systems [8].

Optical terminology

A specific optical terminology is used in literature to describe the components of eyesight and optical systems that provide various degrees of image magnification. I consider their general presentation necessary in order to understand the features, advantages and disadvantages of different types of loupes.

1. The working distance (WD) is the distance measured from the eye lens to the object being looked at or, in other words, from the eye-plane to the surface to be looked at. Dentists often suffer while trying to shorten the working distance in order to see better, generating unwanted effects on the back, neck or eyes. The ideal working distance is between 30-45 cm, varying with the height of the operator and the size of the body segments; taking these coordinates into account the doctor can obtain both a correct posture and eye comfort. [1,8]. Other authors provide lower values, averaging between 28-38 cm for the working distance [2].

2. The depth of field (DOF or working range-WD) is given by the interval in which the viewed object remains well focused or the interval in which the viewed object is clearly perceived at an appropriate working distance. For a normal vision, the depth of field of vision extends from the working distance to infinity [1,8].

The depth of the visual field determines how far the practitioner can approach or move away by moving his head from the operating field and still clearly perceiving the operating field. For example, for a depth of field of vision of 20 cm the practitioner can move

away or closer 10 cm and the object of sight is still clearly perceived (focused). Thus, a proper depth of field of vision reduces operator fatigue, it averages ideally around 10 cm [3].

Normally, the position of the eyes and the posture of the body have slight constant variations. The use of loupes modifies this geometry, the body posture and the activity of the extra ocular muscles being influenced to a greater or lesser extent, depending on the characteristics of the loupes. Regardless of the type of loupes and the manufacturer, the higher the magnification offered, the lower the depth of field of vision, possible to a point where only a small object remains well focused and the surrounding elements are not well perceived. At high magnification any movement of the patient or of the operator leads to the loss of image focus, which makes working quite difficult [1,6].

3. The convergence angle is the angle of alignment of the two oculars so that the axes meet at equal distances and identical angles. For a certain working distance the convergence angle varies with the pupillary distance [1,8].

4. The field of view (or width of field) is the size or the extent of the perceived area when loupes are used [1,8]. The higher the magnification, the smaller the field of view [1]. For example, the visual field may be reduced to the perception of a single tooth or wider to the perception of a group of teeth. A wider field of view is better when discussing instrument handling and reducing eye fatigue [3]. At a magnification of 2-2.5 x the operator can perceive several quadrants, so this is a degree of magnification frequently used in general practice and often used by beginners. At a magnification of 3.5 x the visual field is reduced to a single quadrant, and at a magnification greater than 3.5 x a single tooth can be perceived [6].

5. The pupillary distance (IPD) is a value that depends on the natural position of the eyes (the distance in millimeters between the pupils of the two eyes) and is the key to adjusting the magnification system used. It varies with each person, and it is a very important reference element for learning and correctly long-term using magnification systems [1,8]. Loupes that allow the adjustment of the pupillary distance can be used by more operators. The ideal adjustment of the oculars allows the creation of a single image, with a slightly oval shape [1].

6. The viewing angle is given by the position of the two oculars of the optical system, angled to the horizontal so as to allow the operator to adopt a comfortable working position. The smaller the angle of view, the greater the inclination of the head of the operator necessary to perceive the object [1,8]. Therefore, loupes designed for dentists must have a greater angulations than those for other workers. The viewing angle must be adjusted and has a specific value for each user [1].

7. The declination angle is the angle to which the loupes are positioned in relation to a reference line - the natural line of sight (drawn from the upper edge of the ear to the base of the nose). The greater the angle, the more bending of the head will be necessary in order to see. From an ergonomic point of view, it is important to evaluate and set this angle correctly for each operator [6].

8. The resolution is about the clarity of the given image, it includes the ability to identify small, close visual elements and it depends on the quality of the optical system used and on the accuracy of the lenses. Unfortunately, the only way to evaluate it is by using and comparing different optical systems [3,7].

Types of loupes

Depending on the number of lenses, the loupes can be simple loupes (single lens) or optical systems with multiple lenses (compound loupes): the Galilean optical system and the prismatic optical system (Keplerian).

a. Simple loupes are represented by a pair of positive simple lenses (meniscus lenses side-by-side), these are the simplest and cheapest loupes [1,5,7,8]. The main disadvantage of simple loupes is the limited magnification capacity [7, 8]. With simple loupes, image

magnification and clarity (focus) are obtained for a specific working distance, which can affect the doctor's posture, generating the installation of tension in the neck and back [1,2]. In addition, for a higher degree of magnification the required working distance decreases, which also leads to ergonomic problems (magnification over 2 x) [5,8].

Thus, in addition to the limited magnification capacity, other disadvantages of simple loupes add up: maintaining a fixed working distance, the increased risk of postural damage as well as spherical and chromatic alterations that distort the image, especially at its periphery [7,8].

Simple loupes can be presented as lenses mounted in spectacle frames or can be foldable, mounted on spectacle frames or on a device that sits on the head.

b. Compound loupes are represented by multi-lens or telescopic systems, with air between lenses, which allow the adjustment of magnification, working distance and depth of field without a major increase in size or weight [1,2,7,8]. They come in two types: the Galilean system and the prismatic-Keplerian system.

Galilean loupes are most often used in dentistry, and they are a combination of convex and concave lenses and have a typical conical shape. When compared to simple loupes, the system allows greater magnification, better resolution, adjustable working distance and greater depth of field. It is a relatively easy and inexpensive system [2]. The magnification offered is between 2 x and 4.5 x, but a maximum of 2.5 x magnification is usually used. A magnification greater than 2.5 x, comes with significant problems with the system's size and weight, image resolution, difficulty in focusing the image, and image distortion at the periphery of the field of view (spherical aberrations). All Galilean systems produce a peripheral halo that can be disturbing for the operator [2,5,7].

In conclusion, we can say that the Galilean system is a low magnification system, going generally up to 2.5 x, cheap, with several disadvantages, but easier to assimilate by the operator. It is useful in current universal practice, including for sanitation [3]. These loupes can be custom made for an operator [7]. Figure 1 illustrates a Galilean system.

Prismatic loupes or Keplerian loupes are the most advanced magnifiers. They represent a complex optical system, made up of lenses and prisms (5 lenses and 2 prisms) that allow the adjustment of the working distance and the degree of magnification. The prisms offer the light a long path through a series of reflections so that the final weight of the device is as low as possible. Prismatic loupes have a characteristic cylindrical shape [2,5].Their degree of magnification ranges between 1.5 x-6 x, but the magnification used in dentistry is generally over 3.5 x, limited so as to decrease the effect of the depth of field of vision reduction that comes with the increase of magnification. They offer a high magnification, a clear image of the entire field of view, a wider field of view, a greater depth of field and a greater working distance. Thus, this system is indicated for the perception of very fine details (eg. in endodontics). Prismatic loupes are the most advanced in terms of optical performance, but they are heavier and more expensive [2,3,5,6,8]. These systems can be custom made for the user [7]. Figure 2 illustrates a Keplerian (prismatic) system.

	
Figure 1. Techne-RX-Galilean, UNIVET	Figure 2. Techne-RX-Prismatic, UNIVET

In relation to the positioning of the optical system, the compound loupes (Galilean or Keplerian system) can be: flip-up loupes or through-the-lens (TTL) loupes.

a. Flip-up loupes have the optical system attached to a movable arm, mounted on the frame of the glasses and it is adjusted manually at every use. When not needed, the mobile element can be easily removed (eg. in order to communicate with the patient) and then reapplied. This option is advantageous due to the lower price and to the fact that it allows changes imposed by the change of the prescription from the ophthalmologist- if so, the necessary correction being included in the glasses. The disadvantages are given by the higher volume and weight of the system (compared to the TTL type) and the smaller size of the field of view offered, they are also more exposed to contamination due to frequent handling, and repeated movements can cause changes in the position of the mobile element which includes the loupes [3,6,7]. Figure 3 illustrates the flip-up loupes.

Figure 3. Air-X-Prismatic, UNIVET

b. Through-the-lens (TTL) loupes have the optical system mounted directly on the lenses of the glasses, according to operator-related specifications (eg. pupillary distance). The advantages are: lower weight, larger field of view (the optical system is closer to the eyes) and they ensure correct positioning. The disadvantages of the system are: they are used only by the practitioner for whom they were ordered, the significantly higher price and the fact that they must be completely removed when they are not needed (eg. for communication with the patient). The corrective indications from the ophthalmologist are included mainly in the optical system, not so much in the glasses, so that the changes of the medical-ophthalmological data of the operator (ophthalmological prescription) imply modifications of the optical system operated by the manufacturer. Any small error can cause eye strain when the system is used for more than 30 minutes [3,6,7]. Figure 1 and figure 2 illustrate TTL loupes.

Choice of loupes and personalization

Numerous types of dental loupes have appeared on the market from different manufacturers, each with a series of technical specifications which makes a good choice a difficult task. Choosing dental loupes involves a careful evaluation and weighing of the various optical features (magnification, image clarity, width of field, depth of field, etc.) and ergonomic aspects that derive from their use. It should be emphasized that a larger image does not necessarily mean better visibility. Usually, a clear and sufficiently enlarged image provided by high-performance optical systems implies a higher weight, a lower depth of field and a smaller field of view. This relationship is generated by the laws of physics and cannot be avoided. The best dental loupes offer in addition to magnification a good resolution, an ideal field of view and an appropriate depth of field [5,7]. The choice also depends on the frequently performed daily procedures and their degree of finesse [3].

The individualized dental loupes, custom made, must take into account the indications of the ophthalmologist and the essential data, such as the pupillary distance, must be correctly measured. Therefore, in order to choose the most suitable optical systems, it is

necessary that the dentist does a careful documentation, consults the ophthalmologist and asks for recommendation from the specialist representing the manufacturing company [7].

Ergonomic aspects of using dental loupes

There are many studies that draw attention to the medical problems of the dentists in relation to their profession, problems that tend to worsen in time. Most dentists claim at some point poor visibility in relation to decreased visual acuity and also a number of musculoskeletal problems due to poor posture. Musculoskeletal damage occurs mainly in the neck and lumbar region [9]. Insufficient visibility and illumination often lead to excessive bending of the head in order to approach the operating field. With the correct use of the dental loupes, the dentist can benefit from optimal visibility by the enlargement of the image at an increased working distance, which is ergonomically convenient. The dental loupes allow a safe and comfortable low head flexion of up to 20 degrees [1]. The weight of the optical system (higher for prismatic magnifiers and for the flip-up type) is added to the muscular stress of the neck and back of the head and it increases the risk of musculoskeletal damage.

If accommodating with the dental loupes lasts a week or more, this is a sign that the operator is making a significant unnatural effort to adjust considering that the dental loupes should serve him and make his work easier. In such conditions which require significant effort to accommodate the doctor becomes extremely vulnerable to eye strain and pain in the neck and back. Enlarging the image certainly brings benefits to the patient by increasing the quality of the operation, but it must also bring benefits to the comfort and health of the doctor [9].

There is no evidence so far that prolonged use of dental loupes is harmful to the eye. However, special attention should be paid to those who suffer from convergence insufficiency. When not detected before wearing dental loupes, it can occur as a reduction of the field of vision. After prolonged use of dental loupes a pathology quite difficult to treat may occur, its symptoms being headaches and blurred vision. This risk can be avoided by consulting the ophthalmologist before purchasing and using dental loupes and by ending the use of the optical system when symptoms occur [6].

CONCLUSIONS

An enlarged image of the operating field, especially when the details to be viewed are extremely fine, is a justified desire of general practitioners or specialists. Detailed knowledge of the different types of dental loupes, with their limitations, optical advantages and disadvantages, as well as the understanding of the ergonomics implications of their use can lead the doctor to make a choice in accordance to his needs. Careful documentation is necessary on this work tool that is interposed between the doctor's eyes and the work field for the expected result to become accessible and satisfying.

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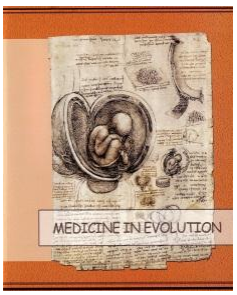
Perception and illusion in dental aesthetics



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Abstract

Aim and objectives: The objectives in performing fixed prosthetic restorations were the following: Replacing lost tissues, restoring the functions of the stomatognathic system: aesthetics, phonetics, functionality, mastication and creating illusion, using different techniques to make the tooth look younger, older or wider.

Material and methods: This part presents the materials and the different methods in the technological operations for the realization of three fixed metal-ceramic partial prostheses, with rejuvenated appearance, with aged appearance and the third with the illusion that the tooth looks wider, the differences that will be listed below.

Results: The metal-ceramic works are accepted relatively easily, offering special satisfactions to the patients, but also to the doctors, they transform the dentition into an aesthetic and functional, comfortable one, restoring the morphology and the masticatory functions.

Conclusions: Ceramics have a very wide range of colors, having the great advantage of the possibility of combining them. Thus, some parts of the tooth can be made in certain shades, others in other shades, giving the artificial tooth a very close apperance to the natural one.

Keywords: Illusion, perception, ceramics, frontal teeth, aesthetics.

INTRODUCTION

Dentistry involves a synergistic combination of biofunctional-mechanical-aesthetic principles and a permanent evolution in a direction influenced, more recently, by the wishes of patients. Thus, in the last decades, a younger, now mature specialty of Dentistry called Dental Aesthetics appeared. (1)

Dental aesthetics is a branch of modern dentistry that studies the laws and principles that underlie the appreciation and creation of beauty in dental medical practice.

The main purpose of this branch is the analysis, design and realization of the "perfect smile". Like any other science, or art, aesthetics has well-structured rules, based on scientific principles. In designing and implementing a treatment plan, compliance with these aesthetic criteria has an important role in obtaining the best and long-lasting result. (2)

The Hollywood smile is becoming more and more important, with a rigorous dental alignment, healthy white teeth, well-contoured lips and an increasingly sophisticated facial make-up. All this is due to the constant need of people to look better and to be more pleasing to their peers. (3)

Now by controlling the illusion the teeth can be cosmetized so that they look the way we want: narrower or wider; smaller or larger; short or long; old or young; male or female. The ultimate goal is to achieve aesthetic restorations with natural appearance.

In recent decades, R.E. Goldstein, S. Hobo, G. Chiche, S. Perelmuter, M. Magne, and many other clinicians have established aesthetic rules in fixed prosthesis, thus advancing both the theory and practice of aesthetic restorations.

Perception is "the image resulting from the full reflection of objects and phenomena that act directly on the sense organs" (DEX).

In a broad sense, aesthetics is a product of the intellect; when the term aesthetic or unsightly is used it produces an emotion with pleasant or unpleasant connotations.

In the case of dentistry we refer especially to visual perception. Aesthetic perception is a complex process that will allow the dental technician, who has sufficient knowledge in the field, to see certain things that an ordinary person does not notice.

The perception process is achieved through a sensory arousal, which intellectually develops a response in accordance with previous experiences, or which generates an unconscious interpretation. (4)

In visual perception, the physiological function of visual cells brings stimulus to the centers of vision where it causes a psychological response conditioned by a number of factors: personality, cultural, physical, physiological, sociological influences and the degree of cultivation of each individual's aesthetic sense. Therefore, the aesthetic appreciation is not purely objective, but is influenced by the inner feelings of each individual. In addition, the evaluation of aesthetics requires training to improve the perception from an artistic perspective and to allow the elaboration of judgments in accordance with objective criteria. (5)

The illusion "represents a false perception of an object present before the eyes, determined by the laws of formation of perceptions or by certain mental or nervous states" (DEX). From an artistic point of view, illusion is the art of changing perception it looks different from its actual appearance. "Our gaze is often deceived by the effects of optical illusion" (Goldstein).

Understanding the basic principles of perception must precede their use to control illusion. Many of the basic principles of illusion, such as shape, light, line, can be applied in dentistry. In the presence of excessive light or in the absence of light, the shapes cannot be distinguished because shadows are needed to emphasize the contour or curvature of the surface and depth.

Using the principles of perception in the control of illusion

A) The principle of enlightenment

The basic artistic influence presented in the principle of lighting can be manipulated to change the size and shape of the tooth by illusion. This influence is the key to the Girl's Law.

Face law is the most important concept used in conforming prosthetic restorations. His understanding and interaction with the concept of light and darkness will allow the dentist to properly conform to all aesthetic restorations.

The apparent face is that portion of a surface that is visible at a glance. The perimeter of the apparent face is dictated by the position of the observer in relation to the tooth.

In ceramic prosthetic restorations with the help of pigments, many illusions can be created based on the aesthetic principle of lighting. Each time only the "apparent face" will be manipulated and not the real face

B) The principle of the line

The relationships between the lines play an important role in creating illusions.

Horizontal lines in the form of cervical pigmentation, texturing, hypoplastic white lines or long, straight incisal edges create illusions of width. The widening of the face has the same effect. The vertical lines in the form of accentuated growth grooves, hypoplastic lines and vertical texture accentuate the height. The same illusion can be obtained by modifying the incisal edges and embrasures.

C) Conforming and contouring

The most common illusion is the creation of different contours. The eye is sensitive to the contours of the shape that projects against the background of the dark space of the oral cavity. It's easy, the modification of an incisal edge can create desired illusions

The objectives pursued in carrying out fixed prosthetic restorations were the following:

-Replacement of lost tissues

-Restoring the functions of the stomatognathic system: aesthetics, phonetics, functionality, mastication

-Creating the illusion, using different techniques to make the tooth look younger, older or wider. (6)

MATERIAL AND METHODS

This part presents the materials and the different methods in technological operations

for the realization of three fixed metal-ceramic partial prostheses with a rejuvenated appearance, with an aged appearance and the third with the illusion that the tooth looks wider, each prosthetic work having the characteristics and differences that will be listed below.

After establishing the prosthetic plan, the doctor prepared by grinding tooth 1.1 in order to perform the fixed metal - ceramic prosthetic restoration.

In the following are presented the technological stages and the materials used that led to the realization of the finished prosthetic parts.

The first step performed, which is the beginning in making a prosthesis is the impression of the maxillary prosthetic field by the dentist.

The working model used has a detachable abutment, with dowel pin offering a number of advantages. Due to the possibility of disengaging the abutment from the whole model, it was possible to model the proximal faces with optimal visibility.

The casting of the actual working model was made of class IV plaster reinforced with Pico Rock resin.

The model was made in order to obtain the exact shape and size of the final work. The actual packaging of the model of the future fixed partial denture. For the next step, the one-time packaging method was chosen. With the help of the Bego vibro-vacuum mixer, the Bellavest SH packaging table (Bego, Bremen, Germany) was prepared.

After packing, about an hour later, the mold was preheated in the preheating oven, where the temperature rise in 60 minutes to 400 °, in order to melt the model wax, evaporate the water from the packing table and to start the thermal expansion.

The second stage was the heating of the mold, through which the mold temperature was raised to 950 ° within 30 minutes, where the total drying of the mold, the complete burning of the impression material and bringing the mold temperature as close as possible to the thermal values of the alloy melted.

After pouring and slowly cooling the alloy, the casting was unpacked by mechanical means and sandblasted to remove the remnants of the packing mass and the oxide layer from the surface. The blasting was performed in a sandblaster, with Al2O3 granules with a diameter of 250 µm.

After preparing the metal component, we move on to the next stage, namely the burning of the ceramic. Before depositing the ceramic mass, the model was cleaned, after which it was insulated with a soapy solution to avoid the buffer effect of the plaster on the humidity of the ceramic mass.

When the ceramic layers were deposited between the metal component and the technician's fingers, filter paper was interposed, which has the role of absorbing the excess of diluent liquid.

The opaque was applied in 2 coats. Dentine was deposited over the opaque layer with the help of a brush, in large quantities, under vibration. The excess liquid was removed with the help of filter paper.

After applying the dentin and modeling according to the oversized dental morphology, the enamel was applied to obtain incisal transparency.

The dentine, at the incisal edge, was cut in the bevel tehnique with the help of a sharp tool. Then, the enamel was applied on the buccal, and on the palatal the transparent was applied.

After removing the work from the model, the dentin (na3B) was added on the mesial and distal faces of the tooth, obtaining an excess of 0.5-1 mm necessary for the contact points.

With a clean and damp brush, the inside of the crowns was brushed, removing any ceramic mass granules. The edges were also corrected by adding ceramic tableware. Thus, the prepared piece was placed on the refractory support and placed in front of the oven for 10 minutes for drying.

After this time, the piece together with the refractory support were introduced in the oven. The sintering was done in the temperature range 980 ° C, with vacuum, for 6-7 minutes.

Finally, the glaze (Vita 725) was applied to the entire porcelain surface, dissolved in a special liquid.

The package of teeth was individualized with one of the brown masses 713-717, and the incisal edge was brushed with a gray color.

After sintering in the presence of oxygen, at 930 °, for 2-3 min, the finished part resulted.

Aged-looking ceramic-metal crown

The cultural influence of age is a sensitive issue for patients who want cosmetic treatment and a number of features must be considered.

In order to make a fixed partial denture with an aged appearance, the following aspects were taken into account: the older teeth are smoother, darker in color, with a higher degree of saturation, with a lower incisal edge, longer towards the gingival, incisal edges are more worn and uniform, small incisal abrasions, more characterized, show cracks, show moroni spots. (Fig. 1)

Figure 1. Reproduction of the crown of the mature tooth

Rejuvenated metal-ceramic crown

Natural, beautiful teeth or artificial substitutes must be in harmony with the personality, age and sex of the patient.

In order to make the metal-ceramic crown with a rejuvenated appearance, the following characteristics were taken into account: young teeth are more textured, brighter, and we can notice the presence of translucency at the incisal edge, they have a lower degree of saturation, and the incisal edges present, which makes the sides shorter than the incisors and canines, they also have significant incisal abrasions, small gingival abrasions, few characterizations, often with white hypoplasia lines or spots. (Fig. 2)

Figure 2. Reproduction of young tooth appearance crown

Metal-ceramic crown with the illusion that the tooth looks wider

The upper central incisor reflects anterior, superior, inferior, and lateral light.

Using the modeling to better reflect the light in the gingival third and below the incisal curvature so appeared the effect of shortening and widening the tooth.

Horizontal lines in the form of cervical pigmentation, texturing, hypoplastic white lines or long, straight incisal edges create illusions of width.

In the case of misaligned teeth, it may be necessary to create the illusion of a wider tooth in a smaller space.

This can be done by bringing the contact points labially as far as possible and flattening the surfaces to reflect all the light.

RESULTS

Metal-ceramic crowns almost perfectly reconstitute the color and constitution of the enamel of neighboring teeth, compared to metal-acrylic works, in which the acrylate veneers blunt over time due to masticatory forces, turn yellow, deteriorating shortly after the prosthetic work.

The ceramic completely covers the metal support of the prosthetic work, so the natural and intact aspect of the dental arch will be restored.

The metal-ceramic works are accepted relatively easily, offering pleasant results to the patients, but also to the doctors, they transform the dentition into an aesthetic and functional, comfortable one, restoring the morphology and the masticatory functions.

The volume of mixed metal-ceramic works is less than or equal to that of natural teeth and is fixed to the abutment teeth (natural or implanted) by cementing, gluing or screwing.

DISCUSSIONS

Now by controlling the illusion the teeth can be cosmetized so that they look the way we want them: narrower or wider; smaller or larger; short or long; old or young; male or female. The final goal is to achieve aesthetic restorations with a natural look (Fig. 3)

Figure 3. Making three metal-ceramic crowns: young tooth, mature tooth, wide tooth

In recent decades, R.E. Goldstein, S. Hobo, G. Chiche, S. Perelmuter, M. Magne, and many other clinicians have established aesthetic rules in fixed prosthesis, thus advancing both the theory and practice of aesthetic restorations.

Underline new, important aspects of the study. Do not repeat in detail data which have been presented in previous sections. Include implications of revealed aspects and their limitations, including implications for future studies. Connect your observations to other relevant studies. Relate the results to the aim proposed for the study. [Book Antiqua, 11 point, normal, justified alignment].

CONCLUSIONS

Ceramics have a very wide range of colors, having the great advantage of the possibility of combining them. Thus, some parts of the tooth can be made in certain shades, others in other shades, giving the artificial tooth a very close apperance to the natural one.

Ceramics can restore various stains on the initial teeth, various defects in shape and color.

The front teeth, where no mastication is performed, can be covered by ceramic crowns without metal support, thus managing to restore the translucency of the initial teeth.

Ceramics imitate the natural in the highest form, it can be sanitized, and it is the best tolerated material in the oral cavity, but it is also the most expensive one.

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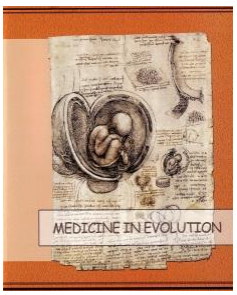
Treatment of maxillary odontogenic cysts by the method of marsupialization – review



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Abstract

Odontogenic cysts are the most frequent osseous destructive lesions of the jaws. As the volume increases, they cause significant bone resorption, cortical expansion and tooth displacement. Depending on the size, location of the cyst and the age of the patients, several treatment options are available: curettage, enucleation, radical treatment and marsupialization. The marsupialization (Partsch I) is a conservative technique used as curative treatment for the odontogenic cyst. Despite its disadvantages and controversies, remains an interesting therapeutic choice in the case of large cysts, or in old or very young patients.

Keywords: odontogenic cyst, marsupialization, Partsch I, curative treatment

INTRODUCTION

Odontogenic cysts of the jaws are pathological cavities partially or totally delimited by an epithelial membrane. These cysts arise in the thickness of the maxillary bones in the odontogenic epithelium and have a fluid or semifluid content [1,2].

According to data from the literature, maxillary cysts have a rate of 80-85% of all tumors and pseudotumors of the jaws. Maxillary cysts represent between 4.56% -14.4% of all maxillofacial pathology. An incidence of over 90% is due to radicular cysts [1,2]. According to some statistics, radicular and residual cysts represent 52.2% of maxillary cysts and approximately 62% of odontogenic cysts [3,4].

Odontogenic cysts are usually asymptomatic and accidentally discovered by routine radiographic examination. Pain can occur when they become infected. After a long period of evolution, it can cause bone resorption, cortical expansion and displacement of teeth, especially the tooth associated with the cyst [5].

Symptoms may be absent or the patient may have painful embarrassment, usually vestibular swelling, intraoral fistulas, and in the advanced stages, paresthesia, dental pain and signs of sinus damage.

Due to the predominant development inside the bone marrow or the extension in the maxillary sinuses without affecting the ostium, the cysts of the maxillary bones can reach remarkable dimensions without clinical expression for patients. Orthopantomography together with CBCT helps in rigorous planning of the intervention, with the reduction of postoperative morbidities for the patient.

Cystectomy is the intervention of choice in the treatment of small and medium maxillary dental cysts and is indicated when there is no risk of injury to important anatomical structures [1,2].

The treatment must be multidisciplinary, frequently preoperative endodontic treatments of the teeth with apexes that protrude in the cystic formation are needed. Treatment ranges from marsupialization, enucleation to surgical treatment or bone resections. Depending on the histopathological pattern, the recurrence rate is higher or lower. Patient monitoring, both clinical and radiological, must be long-term.

Aim and objectives

The purpose of this review is to sensitize dentists on the method of marsupialization, as an alternative for the treatment of large maxillary cysts.

METHODS

The minimally invasive treatment enjoys massive popularity in some surgical fields. It involves the removal of modified pathological tissue with minimal trauma to healthy tissues, especially the mucosa and skin, sparing the functional and defense mechanisms of the anatomical structure surgically approached.

Odontogenic cysts benefit as a method of marsupialization treatment [6]. Marsupialization is the making of an incision in the cyst, with an extension equal to or greater than its diameter, drainage of the contents, followed by suturing the edges of the cystic formation at the oral mucosa. This creates an adjacent cavity of the oral cavity [5-7]. It was first described by Partsch in the late 19th century for cystic lesions of the jaws. This treatment is a challenge for surgeons, especially in large tumors [7,8].

Reducing the size of the cyst would save vital teeth. The reduction in size of the cystic cavity occurs faster by marsupialization due to the centripetal healing of the maxillary bones [9].

Marsupialization is indicated in elderly patients, who cannot undergo general anesthesia due to systemic (respiratory, cardiac), or hematological (hemophilia) conditions. Preoperatively, the patient rinse with 2% chlorhexidine mouthwash. Surgery can be performed under local anesthesia [10].

By marsupialization the cystic lesion is decompressed, but exposes the cyst mucosa to the oral environment [11]. Mandibular cysts are normally marsupialized in oral cavity. Maxillary cysts can be marsupialized in the maxillary sinus or nasal cavity, as well as in the oral cavity [12] (Figure 1).

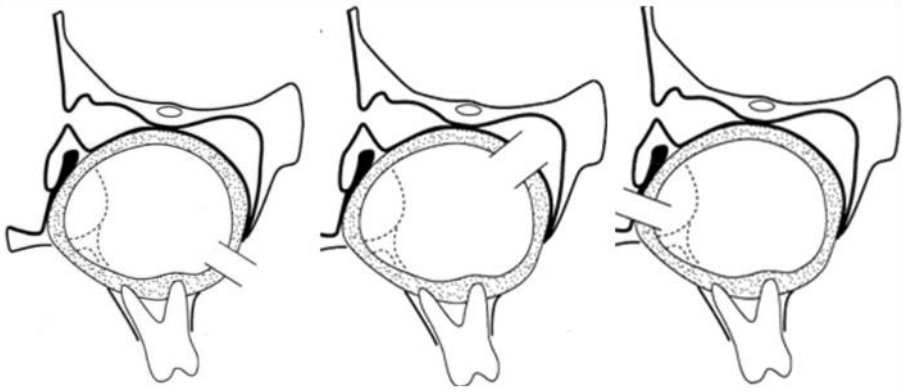

Figure 1. Diagrammatic representation of marsupialization of a maxillary cyst to the oral cavity, into the sinus or nasal cavity [13]

DISCUSSIONS AND CONCLUSIONS

Marsupialization has proven to be a conservative technique that has allowed the observance of neighboring anatomical structures, especially in the case of large cysts. This technique requires prolonged clinical and radiological monitoring [14,15].

Marsupialization aims to relieve pressure inside the cyst by decreasing the production of IL-1α (interleukin-1alpha) and other inflammatory cytokines, allowing the new bone to fill the defect [16].

Some authors consider marsupialization superior to cystectomy, due to the fact that the cystic envelope has a special tendency to contract due to myofibroblasts, after the expulsion of the cystic content, which allows the formation of endosteal bone. With the decrease of intracystic pressure occurs the shrinkage of the cavity and the proliferation of normal mucoperiosteum, which contributes as additional factors in osteogenesis [17,18].

This treatment requires a conscientious patient who will irrigate the cavity twice a day to prevent food accumulation and keep it open. The cyst mucosa is replaced with normal epithelium during this treatment [19,20].

Pogrel and Jordan in their study showed that marsupialization allows complete treatment of odontogenic keratocysts, both clinically and radiologically, over a period of 7-19 months [19].

Other authors give a longer marsupialization period of 6-80 months, with an average duration of 24 months, and about 18.5% of cystic lesions disappear completely without cystectomy [21].

Marsupialization is a controversial topic. Some authors consider it necessary to perform the cystectomy procedure after marsupialization, others consider that this procedure is contraindicated in case of other forms of cysts such as keratocysts. At the same time, many surgeons use risky cystectomy procedures for large odontogenic cysts due to a lack of confidence in the marsupialization surgical technique.

The literature mentions the existence of a new problem, related to the correct assessment of the degree of reduction of cystic cavities and the regeneration of post-cystic defects through conventional radiographic techniques. The use of spiral computed tomography (a type of 3D CT scan) is recommended [17]. It is a non-invasive diagnostic imaging procedure that uses a combination of special X-ray equipment and sophisticated computer technology to produce cross-sectional images (often called slices), both horizontally and vertically. The same author recommends a CT scan at 3 months postoperatively, then orthopantomography (OPG) is performed at 6-12 months postoperatively [17].

For postoperative monitoring it is recommended to use OPGs that are more sensitive to changes in the cystic cavity, also have the advantage of low cost and lower exposure to X-rays. However, CT is recommended to accurately determine the reduction in the size of cystic lesions [17].

Surgical treatment remains the therapeutic solution of choice for bone cysts of the maxillary bones. Performing cystectomy as a final step in the treatment of patients with odontogenic cysts is recommended to be performed at an increase in bone density by 46%, compared to the initial values seen on panoramic radiography [22].

Some authors consider marsupialization as an unnecessary step that delays final treatment, but when it is well indicated, it facilitates surgical treatment, promotes and preserves normal tissues, reduces costs, hospitalization time and the need for surgical reconstruction [23].

Marsupialization could be used as a single surgical procedure or combined with other treatment modalities for maxillary cysts [14].

In the literature, there is controversy regarding the indications and contraindications to the use of different methods of treatment of maxillary cysts. Eradication of the lesions remains the goal of any treatment that must be achieved for ensuring prevention of recurrence and minimum morbidity. The minimally invasive principle of surgical treatment of these pathologies is a motivation for studying alternative techniques, such as marsupialization, and postoperative bone regeneration.

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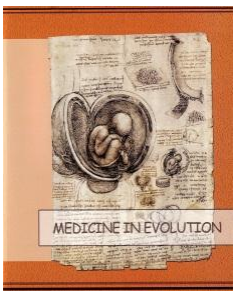
Oral Health Behaviour in Adolescents



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Abstract

Background: In adolescence, intense biopsychosocial modifications place adolescents in one of the groups that are most vulnerable for social and health problems. Habits acquired in this period have repercussions on future dimensions, such as diet, self-image, individual health, values, preferences, and psychosocial development. At this stage, times of neglect with health care become commonplace. While behaviors that contribute to oral health maintenance are reduced, the prevalence of alcohol and tobacco use becomes alarming and affects the health of these young people The aim of the research was to improve the oro-dental health of primary school children in Arad County and to assess the impact of oral health on their quality of life.

Material and Methods: We conducted a prospective cohort epidemiological study, conducted in Arad between 2017 and 2019 and included a sample of 832 subjects, middle school students aged 11 to 13 years whose behaviour was analyzed compared to the factors of risk to oro-dental health.

Results: It was observed that variations in the frequency of food consumption show statistically significant changes, depending on the sex of the subjects, in the case of consumption of refined fruits and sweets, so that 47.4% girls consume fruit daily compared to only 36.3% boys, and 27% even a few times a day (x^2=10,973, DF=4, p=0,014)

Discussion: The analysis of socio-behavioral factors showed an above average level of students' knowledge regarding the maintenance of oral health, but the degree of their application in practice is quite low. Thus, an aspect with a strong impact on the oral health of students is the sources of information on maintaining oral health.

Conclusions: Adolescents show a significantly increased degree of autonomy, with not exactly correct attitudes towards sanogenic behavior, although they know the data related to the cariogenic effect of certain foods or habits.

Keywords: adolescents, sanogenic behavior, quality of life, oral health.

INTRODUCTION

In adolescence, intense biopsychosocial modifications place adolescents in one of the groups that are most vulnerable for social and health problems [1, 2]. Habits acquired in this period have repercussions on future dimensions, such as diet, self-image, individual health, values, preferences, and psychosocial development [3, 4]. At this stage, times of neglect with health care become commonplace [5]. While behaviors that contribute to oral health maintenance are reduced, the prevalence of alcohol and tobacco use becomes alarming and affects the health of these young people [6, 7].

In Romania, the increase in the incidence of dental caries is undoubtedly due to a causal conjuncture represented by the combination of direct and indirect risk factors, manifested by economic, demographic and nutritional transitions, incorrect habits for oral care, limited use of fluoride and lack of oral health services. Differences in oral health and use of services exist for population groups of all ages, and among adolescents in particular [8].

In our country, a significant proportion of children are served, but are not adequately targeted by the prevention of oral diseases and health promotion in the context of public health programs [9; 10].

Oral health education is a key element in health promotion and requires strong planning based on theories of medical behavior [11- 13]. Oral health has been shown to be easily integrated into such school health activities. [14- 16]. A handbook on how to integrate oral health in schools, as well as recommendations on how to assess oral health promotion in the community and disease prevention were developed by WHO [17- 19].

Oral health education is offered in a variety of ways, using a wide range of techniques and materials that address oral health topics, ranging from nutrition, oral hygiene, tobacco, oral health benefits, oral piercings. Diet and oral hygiene and its impact on oral health are probably the most addressed. Oral health education must be based on the principles of active involvement and consolidation. Many studies show that orthodontic health education for children can have a limited impact [20; 21].

If oral health education is combined with additional activities and is provided on a regular basis, health education can have a positive impact on oral health behavior and adolescents' oral health. [22, 23].

The aim of the research was to improve the oro-dental health of primary school children in Arad County and to assess the impact of oral health on their quality of life.

MATERIAL AND METHODS

In order to achieve the proposed goal and objectives, we conducted a prospective cohort epidemiological study.

The study was conducted in Arad between 2017 and 2019 and included a sample of 832 subjects, middle school students aged between 11 and 13.

The sample was selected so as to ensure representativeness in terms of sex and the level of education of parents for the school population of 11-13 years in Arad. The sample used had a mixed, complex structure. The selection methodology was built in three stages, thus:

- The first stage: by the quota method [80], a representative sample of six school units was selected, from the ultra-central area to the peripheral areas of Arad County, middle schools and high schools;
- Step two: in each school a number of classes was randomly selected to be included in the sample;

Stage three: each selected class of students was randomly assigned (by drawing lots) one of the four educational programs.

Table 1. Distribution of parents' level of education according to students' gender

Upper Arch	Male	Female	*p*-value	Difference Significance
IC	8,57±0,52	8,45±0,55	>0,05	IS
IL	6,93±0,53	6,73±0,58	>0,05	IS
C	7,73±0,38	7,63±0,42	>0,05	IS
PM1	6,85±0,40	6,78±0,48	>0,05	IS
PM2	6,39±0,42	6,34±0,43	>0,05	IS
M1	10,47±0,53	10,35±0,52	>0,05	IS

The interdependence between gender, age, level of education of the families from which the students come (for example the distribution of the level of education of the parents does not differ significantly for the sub-samples of girls and boys x^2= 0,739, DF=2, p = 0,691, etc.)

RESULTS

Regarding the degree of anxiety about dental treatment, 76.25% of students say they go to the dentist, without fear of pain during treatment, but 21.3% of students say they are afraid of pain when performing dental treatment (Fig 1.).

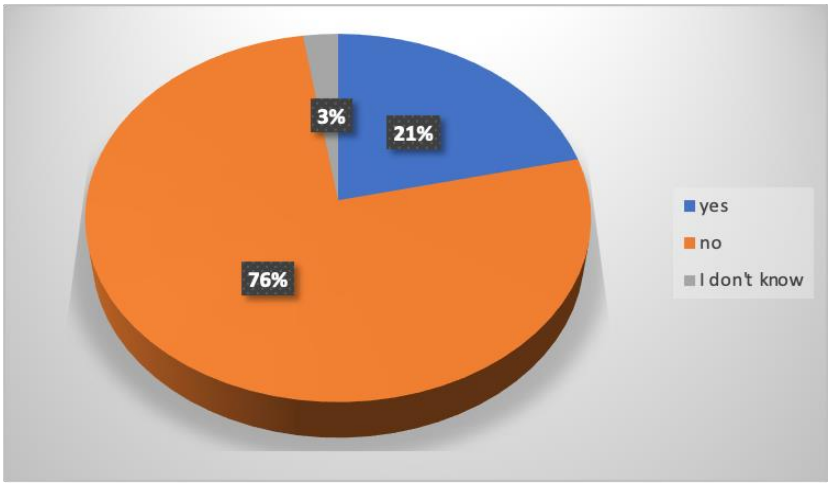

Figure 1. The distribution of the variant of answer to the assertion "I am afraid to go to the dentist due to the possible pain", for 832 students aged 10-13

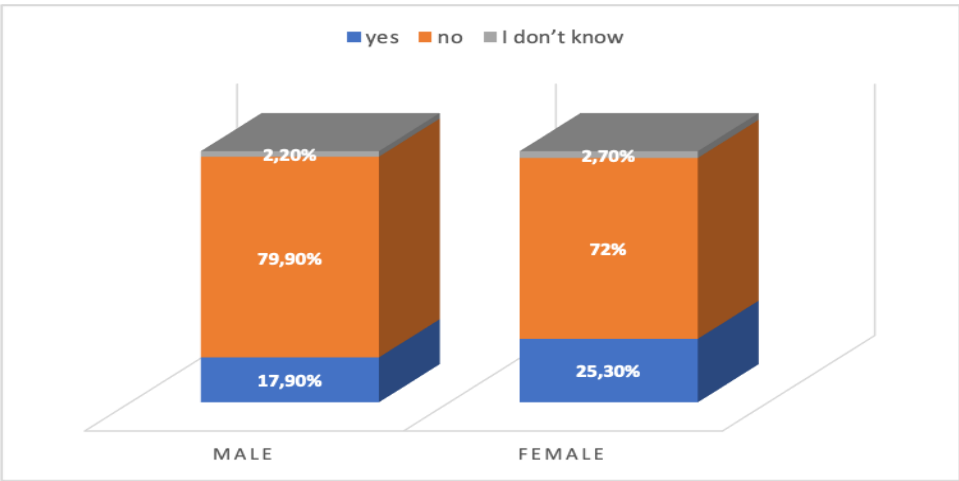

Figure 2. Distribution of answers to the assertion "I am afraid to go to the dentist due to possible pain", depending on gender

In conclusion, we can see that there are significantly more girls (25.30%) who have anxiety about dental treatment compared to boys (17.9%). Dental anxiety is constantly

encountered in children under 3 years of age, but it also manifests in older children, registering a maximum frequency at the age of 11 and gradually decreasing in adolescence. In northern Europe, the prevalence of dental anxiety in children and adolescents was estimated to be between 3-21%, being more common in girls [24]. As they get older, children develop methods of control [25]. In Sigapore, 14% of 10-14 year olds have a high level of anxiety about dental treatment, and girls were 2.64 times more anxious than boys. [26].

The parents of the students, in proportion of 66.80% are the ones who established the last visit to the dentist, a much lower percentage, of approximately 19.30% students state that the treatment sessions were established by the dentist himself, and 12.80% of students established the treatment sessions themselves, reflecting the low degree of autonomy of the child. All this is underlined by the fact that the mother (68.70%) is the one who accompanied the student at the last treatment session, the father only in proportion of 23.10% of cases, while the student goes to the doctor unaccompanied, in 8.2 % of situations, as an expression of the child's degree of autonomy.

Regarding the eating behavior, 27.52% students consume refined sweets daily, 23.13% consume carbonated juices daily and 14.34% students consume biscuits and pastries several times a day. Regarding the frequency of ingestion of sweetened beverages, 19% of students consume tea with sugar and 15.63% consume milk with sugar several times a day. On the other hand, 42% of students eat fruit daily and 21.06% eat fruit only two or three times a week, and 0.39% students do not eat fruit at all (Fig 3).

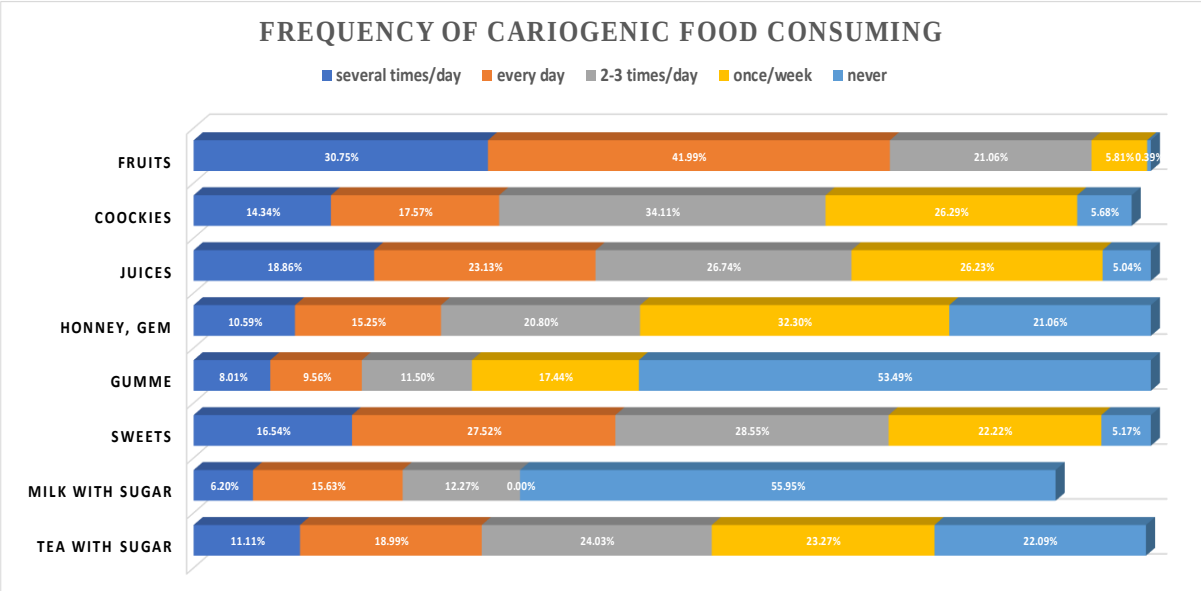

Figure 3. Distribution of answer options to the question "How often do you eat the following foods?", for 832 students aged 10-13

We note that variations in the frequency of food consumption show statistically significant changes, depending on the gender of the subjects, in the case of consumption of refined fruits and sweets, so that 47.4% girls consume fruit daily compared to only 36.3% boys, and 27 % even a few times a day ($\mathbf{x}^2$=10,973, DF=4, p=0,014)

The behavior towards risk factors involved in the etiology of oro-dental diseases, smoking was found that 95.45% of students are non-smokers, while 0.12% of students smoke daily, 2.13% several times a week and 2.10% several times a month. It should be noted that the percentages depend significantly on the gender of the subjects, so that 100% of girls are non-smokers and 97.9% of boys are non-smokers, 0.3% smoke several times a week, 1.3% smoke several times a month and 0.5% smoke on a daily basis ($\mathbf{x}^2$=8,601, DF=3, p=0,035).

DISCUSSIONS

The analysis of socio-behavioral factors showed an above average level of students' knowledge regarding the maintenance of oral health, but the degree of their application in practice is quite low. Thus, an aspect with a strong impact on the oral health of students is the sources of information on maintaining oral health. In the present study, the family is the main source of information on maintaining the oral health of students in the proportion of 84.10%, relatives provide this information in proportion of 29.20%, friends in proportion of 11%, and teachers in proportion of 8.3%. Also, the specialized medical staff are sources of information in proportion of 63% the dentist and only 6.3% the hygienic nurse, a similar proportion being in the case of the family doctor, 6.1%. Regarding the information sources in the media, the highest percentage is held by the audio-visual press, respectively TV, radio-10.10%, followed by the written press, newspapers and magazines, with 7.60%. As regards the addressability behaviour of students to the dentist, in the present study were highlighted aspects related to the frequency and reason for visits to the dental office. Thus, 24.55% of students went to the dentist only once, a similar proportion of 23.51 went to the dentist twice and a significant percentage, 21.83% of them went to the dentist more than four times. Also, a percentage of 7.25% of students did not go to the dentist in the last year, a proportion of about 60.6% of students went to the dentist for dental or gingival pain and only a percentage of about half of the first, 23.30% of students went to the dentist for prophylactic treatment. If we refer to sanogenic practices and habits, we notice that in the initial stage of this study, approximately 65% of students say they brush their teeth two or more times a day, 25.32% of students say they brush their teeth once a day, and 7.36% of students say they brush their teeth several times a week. Regarding eating behavior, in the present study 27.52% of students consume refined sweets daily, 23.13% consume carbonated juices daily and 14.34% students consume biscuits and pastries several times a day. Regarding the frequency of ingestion of sweetened beverages, 19% of students consume tea with sugar and 15.63% consume milk with sugar several times a day. On the other hand, 42% of students eat fruit daily and 21.06% eat fruit only two or three times a week, and 0.39% students do not eat fruit at all.

CONCLUSIONS

Adolescents show a significantly increased degree of autonomy, with not exactly correct attitudes towards sanogenic behavior, although they know the data related to the cariogenic effect of certain foods or habits. Understanding the adolescent profile in health education is essential, given the scope of interest in knowledge.

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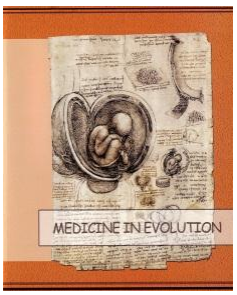
The role of scaling in dento-periodontal health



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Abstract

Periodontopathy is an infectious disease, most of the pathogens have already been identified. Prophylactic measures are based on the finding that continuous accumulation and successive changes in the composition of the supra and subgingival plaque is correlated with the transformation of gingivitis into periodontitis. Prophylaxis of gingivitis is based on plaque control. Prophylaxis of periodontitis is based on the treatment of gingivitis and prophylaxis of relapses. The aim of this paper is to highlight the importance of scaling and proper oral-dental Hygiene in periodontal health. Measures of primary or secondary prophylaxis of periodontal disease, correlated with methods of oral hygiene education contribute to the promotion, maintenance, and restoration of periodontal health. Periodontal prophylaxis and oral-dental prophylaxis generally play a particularly important role in the prevention of caries and periodontal diseases, with periodic control and scaling at the dentist being particularly useful.

Keywords: scaling, periodontal disease, tartar, bacterial plaque

INTRODUCTION

Periodontopathy is an infectious disease, most of the pathogens have already been identified. Bacteria are essential, but not enough to cause the disease. Host factors (heredity) and environmental factors (smoking) are equally important as determinants of the disease and its severity. The interaction of these factors has been demonstrated by recent research, which has shown the complexity of interactions in multifactorial diseases, with emphasis on the specific role of some bacteria and the influences of genetic, environmental and risk factors. Periodontal disease is a concept that meets the totality of the manifestations at the level of the covering periodontium, with a plurifactorial etiology, with chronic evolution and complex and long-term treatment. Currently, following in-depth research, it is specified the main determining role of the microbial factor in the production of periodontal disease in its destructive form, the other factors being favoring or predisposing.

Periodontal risk can be identified in terms of risk factors, risk indicators and periodontal risk predictors. Periodontal risk assessment aims to identify them for the purpose of avoiding, reducing, or controlling them. The risk factor is considered to be determinant for the onset of the disease: it presents biological plausibility as a causative agent (prospective clinical studies support its association with periodontal disease, e.g. smoking) The risk Indicator is considered to be partially determinant for the onset of the disease. The demonstration by prospective clinical studies of the association of a risk indicator with periodontal disease leads to its subsequent consideration (recognition) as a risk factor.

The etiological circumstances of diseases of marginal periodontium are local and general. Local factors are determining - bacterial plaque and facilitating - dental tartar, occlusal trauma, dental caries, edentation, dental-maxillary anomalies, parafunctions, vicious habits, iatrogenic factors, other local factors.

The first form of manifestation of periodontal disease in the oral cavity is gingivitis, which is a reversible inflammation in the marginal covering periodontium. The next stages of evolution of gingivitis go towards an irreversible character of marginal periodontitis with damage to the marginal covering and support periodontium.

Modern dentistry attaches great importance to the potential of periodontal disease to influence systemic evolution, the research conducted directing the purpose of periodontal treatments, in the sense of eliminating specific infections. It should be emphasized that proper oral hygiene accompanied by regular oral examinations contributes to the success of periodontal treatments. The thorough scaling performed, with the removal of granulation tissue and applications of antimicrobial agents remain the basic therapeutic workmanship in the eradication of periodontal infections.

Beyond the individual predisposition of patients, oral-dental diseases have, for the most part, a microbial etiology. However, lifestyle has an important favoring role in the occurrence of caries and pulp diseases, periodontal disease, and oral and maxillofacial cancers. It includes oral-dental hygiene habits, increased enamel resistance through fluoridation, carbohydrate-rich nutrition, alcohol and tobacco consumption, and the frequency of visits to the dentist.

Prevention is part of the initial therapy of periodontal disease and is aimed at eliminating etiological factors. Prophylaxis of periodontitis is based on prophylaxis of gingivitis and preventing the transition to periodontitis. Not all gingivitis becomes periodontitis, but all periodontitis begins as gingivitis.

Prophylaxis is the key to oral-dental health, it can be carried out correctly only by identifying the causes of the disease, and then eliminating them. The etiopathogenic concept of periodontal disease has directed periodontal therapy towards methods of diagnosing the disease, the possibilities of treatment and, what is more important, the need for prophylaxis of this chronic condition and with irreversible effects over time.

Prophylactic measures are based on the finding that continuous accumulation and successive changes in the composition of the supra and subgingival plaque is correlated with the transformation of gingivitis into periodontitis. Prophylaxis of gingivitis is based on plaque control. Prophylaxis of periodontitis is based on the treatment of gingivitis and prophylaxis of relapses.

Prevention is based on assessing risk factors, which increase susceptibility to the disease and ensuring measures to reduce them among the population. Measures to prevent periodontal disease include brushing and flossing daily to remove plaque from teeth and gums, regular visits to the dentist for professional prophylaxis, and a regular periodontal evaluation. The dentist should be informed about the history of diabetes and the current condition. Periodontal disease can affect patients with cardiovascular disease by harmful bacteria around the teeth. These harmful bacteria and inflammatory mediators they produce can contribute to clogging the blood vessels of the heart and other vital structures. The first stage of treatment of periodontal disease is usually a comprehensive prophylaxis that includes scaling to remove plaque and tartar deposits below the gingival line. The roots of the teeth will also be smoothed over the entire exposed surface (polishing) to remove bacterial toxins and allow the gum tissue to heal and reattach to the tooth.

Scaling is a therapeutic labor by which deposits of supra and subgingival tartar are removed from natural teeth and in some cases from prosthetic works, as well as the bacterial plaque with the delay of its appearance by removing roughness on the dental surface. In case of installation of periodontal disease, when the tartar is located on the root surface, in the depth of the periodontal pockets, the scaling is accompanied by a root smoothing that ensures the healing of the periodontium. In addition to prophylactic treatment, scaling is considered the first line of nonsurgical periodontal treatment. Scaling also has beneficial effects on an aesthetic level, by removing various extrinsic stains, at the same time providing a feeling of "cleanliness".

Supra and subgingival scaling at fairly frequent intervals to prevent appreciable build-up. In periodontal patients this procedure will be done every 3 months. Regular control for the detection of early signs of periodontal disease. Performing prosthetic restorations with contours compatible with gingival health. Orthodontic methods for correct dental alignments that are in accordance with the anatomy of the periodontium, ease plaque control and direct occlusal forces into the tooth axis. Assessment of the diet in terms of nutrient intake, diet consistency and frequency and form of carbohydrate intake.

It is recommended to carry out prophylactic scaling at least twice a year (at a minimum interval of 6 months). The presence of tartar does not help to "support the teeth" and does not have any beneficial effects, on the contrary, it maintains gingival inflammation and worsens the course of periodontal disease. In conclusion, we must pay great attention to scaling, not to postpone or neglect it, because along with brushing techniques and regular visits to the dentist, it is part of the absolutely necessary elements of proper oral hygiene.

Prophylactic and curative treatment of the acute and chronic diseases consists in performing scaling that ensures the healing of the marginal periodontium and the oral mucosa (gingivitis, periodontitis, gingival - stomatitis), these also taking place in order to prepare an operating field that allows performing dental procedures in good conditions by the antimicrobial effect of destroying bacterial cell walls by mixing water, air, powder (baking soda, glycine) and pressure (biokinetic energy) thus reducing the amount of endotoxins present in the gingival pockets.

Aim and objectives

The aim of this paper is to highlight the importance of scaling and proper oral-dental Hygiene in periodontal health. Measures of primary or secondary prophylaxis of periodontal

disease, correlated with methods of oral hygiene education contribute to the promotion, maintenance and restoration of periodontal health.

MATERIALS AND METHODS

In this study, a group of 20 patients with an average age of 43.7 years was analyzed, 56% male and 44% female, to which a questionnaire consisting of 25 questions was applied, an oral-dental evaluation was performed, followed by scaling.

The instruments used were clamp, mirror, dental probe, periodontal probe, ultrasonic scaling device, abrasive air scaling piece: Air Flow for the supragingival portion and Perio Flow for the subgingival portion; and a set of Gracey curettes.

The data collected in individual sheets were recorded, which helped in the statistical evaluations aimed at providing a general picture of the oral health status of the adult population selected from among the patients who addressed the dentist to be solved other dental emergencies, apart from periodontal diseases. These patients were asked to complete a questionnaire to see if the patients were aware of their oral problems or not.

RESULTS

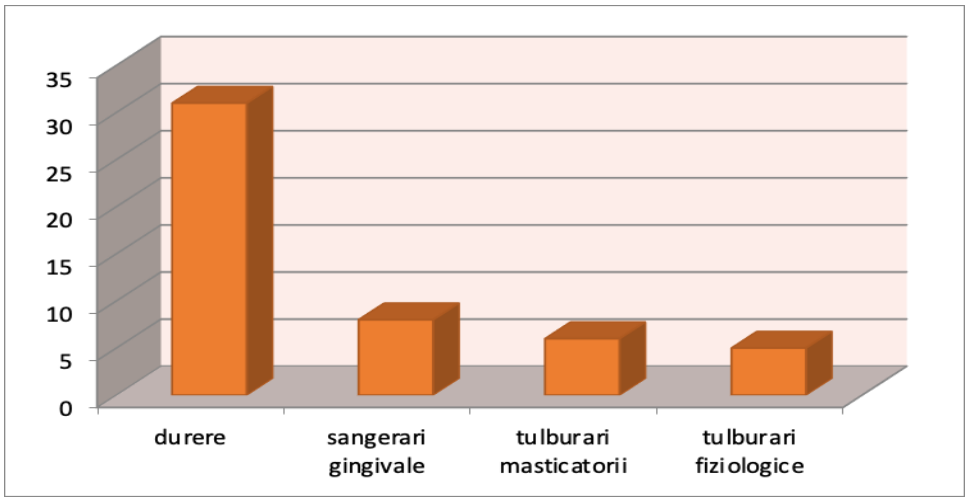

Figure 1. Reasons for presentation to the dentist

From the study, the reasons for presentation were different, 15 of the patients studied had pain as the reason for presentation, at a considerable distance following those with gingival bleeding, followed by those with masticatory and physiological disorders (Fig.1)

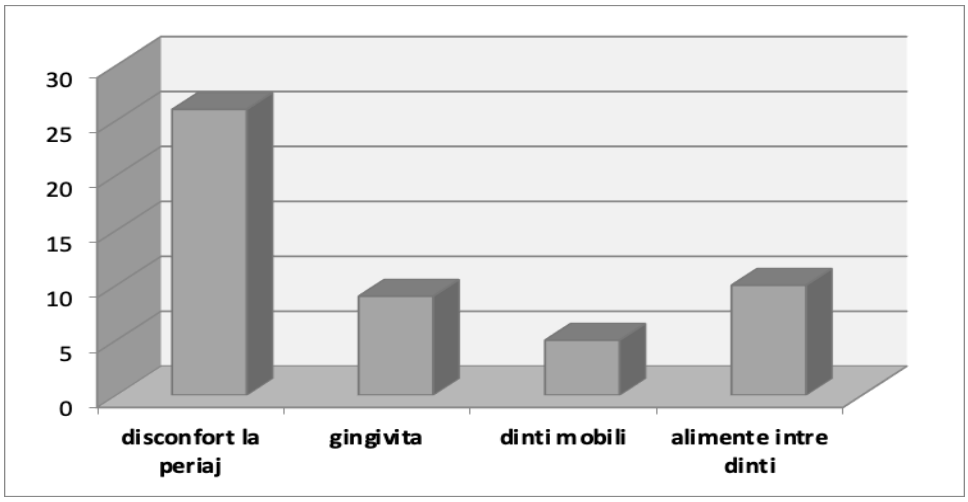

Figure 2. Symptoms in the personal history

From the study conducted, among the existing symptoms in the personal history, 11 of the people included in the study had as a symptom discomfort when brushing, at a considerable distance following those with food debris between the teeth and then those with gingivitis, followed by those with mobile teeth.

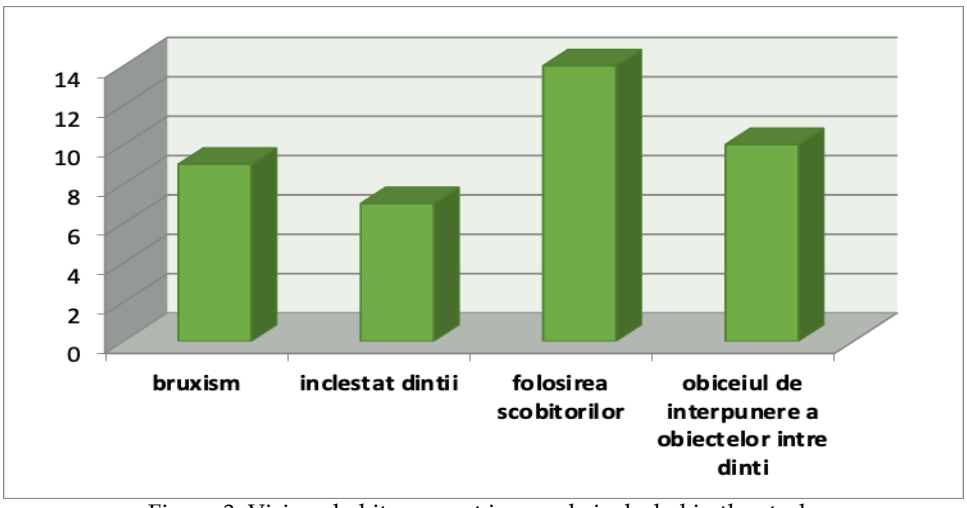

Figure 3. Vicious habits present in people included in the study

From the figure above we observe that among the most common vicious habits are the use of toothpicks followed by the habit of interposing objects between the teeth and at a considerable distance following those with bruxism and clenching of teeth.

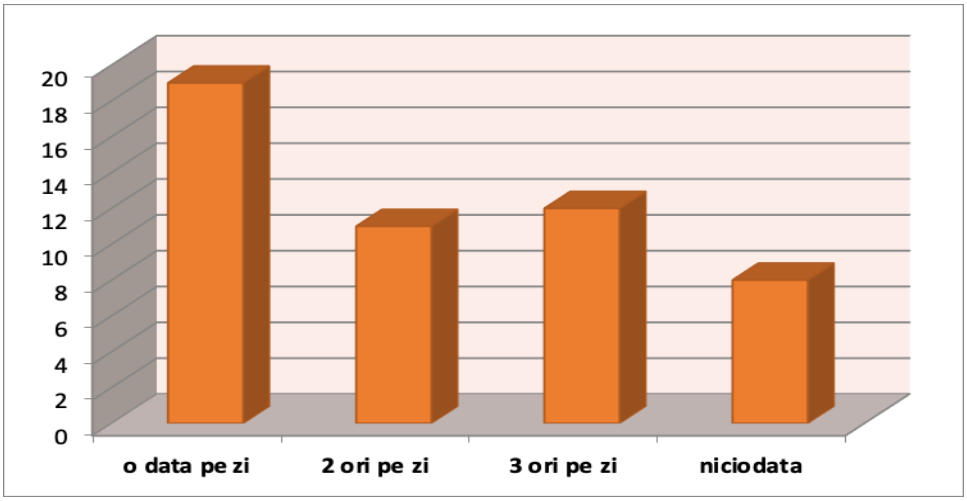

Figure 4. Frequency of tooth brushing

From the figure above we note that the frequency of tooth brushing is not one that denotes good oral hygiene, most people used to wash only once a day, followed by those who wash twice a day. The number of those who do not have the habit of having their teeth brushed at least once a day is worryingly high. Of those who wash only once a day, most of them brush their teeth when they wake up, followed by those who brush their teeth after lunch (Fig.4).

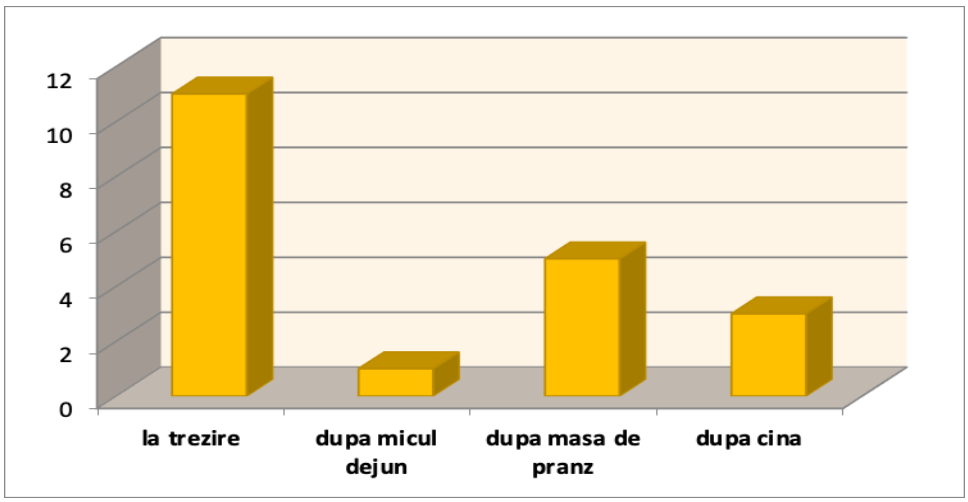

Figure 5. Period of performing tooth brushing

The average time given for tooth brushing is 1.1 minutes, most of them give one minute to this habit, and only 5 persons state that they brush their teeth for 3 minutes.

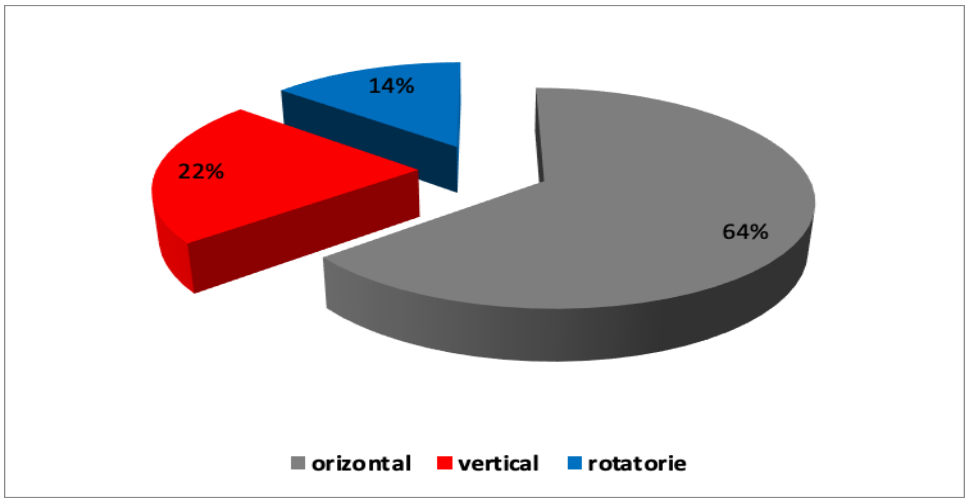

Figure 6. How to perform tooth brushing

64% of the adults in the study use the horizontal direction of tooth brushing, followed by those who wash correctly, using the vertical technique and 14 wash rotationally.

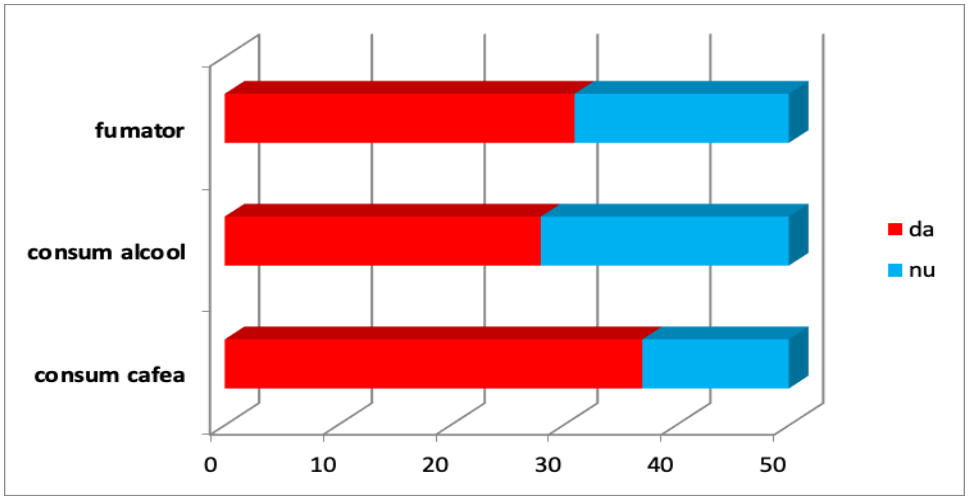

Figure 7. Consumption of vices in the studied sample

Coffee consumption is the most common vice encountered in the studied batch, followed by those who smoke and then alcohol consumption. Very often there is a combination of the three vices, or between the consumption of coffee and those who smoke.

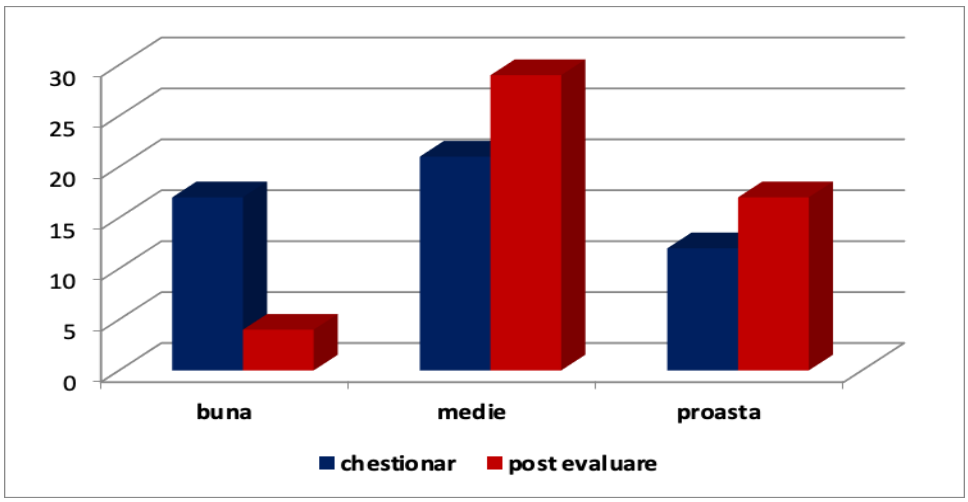

Figure 8. The oral-dental health status felt by the interviewees compared to the oral-dental assessment performed

Most of the interviewees stated that they had an average state of health, followed by those who stated that they had a good state of health, but the evaluation carried out found that the oral-dental health state was average, followed by those with bad condition and the least having a good health state. 64% of those in the study had never had a professional dental cleaning or scaling in their personal history. At the evaluation it was observed that 40% of those examined had periodontal disease.

Figure 9. Various stages of periodontal disease

The use of abrasive air descaling device in the treatment of periodontal disease has sparked many contradictory discussions. The treatment by abrasive air scaling is intended to be self-contained although at present it is considered only complementary to the conventional SRP. Studies showing very good results in the removal of plaque from the pockets with a decrease in their depth of up to 1.22 mm in 4-6 weeks, although microbiologically it is inferior to the conventional SRP.

From the patients to which we did the abrasive air scaling, 7 had plaque gingivitis, at reassessment (after 2 weeks) five of them had good oral hygiene, normal gum coloration, disappearance of gingival edema, firm consistency of the gum and absence of tartar, and the

other two had failed to acquire a correct brushing technique, so gingival inflammation persisted in them.

We also had satisfactory results also from patients in whom periodontal disease was installed at the time of presentation, after three weeks these ten no longer presented gingival edema, they presented moderate pockets, no bleeding at probing, with satisfactory oral hygiene. Of course, there were also patients who needed corrective therapy and we directed them to the specialist.

Prophylaxis of periodontal disease with the help of abrasive air scaling can be carried out with great ease, with very good results. It completely removes the supra and subgingival plaque, delays its deposition by the moderate abrasive effect it has, removing roughness on the dental surface.

Removes extrinsic coloration with great ease, in a short time, the aesthetic effect is clearly superior to that given by ultrasonic scaling, patients being very satisfied with this aspect, but also of how smooth the teeth are and of the freshness they feel after scaling.

CONCLUSIONS

Performing abrasive air scaling in patients with periodontal disease has many net advantages over conventional methods, reducing the degree of periodontitis and even healing in early periodontal disease. Among the many advantages that scaling brings in dental-periodontal health we recall special aesthetic effect, reduces or completely eliminates tartar and bacterial plaque, leaving the place clean; access to proximal areas, ditches, pits, cracks, periodontal pockets, it is much easier to make, very useful also in the identification of caries. It is not an unpleasant procedure for patients, sodium bicarbonate is biocompatible and the device being portable is very easy to use. Scaling is ideal for the prevention of periodontal disease, but in its treatment, it has been proven that at the microbiological level the conventional SRP is the treatment of choice, scaling being complementary.

From this study we observed that most patients have poor dental hygiene, brushing once a day (9 people), there are also 11 people who brush their teeth 2 / day and twelve who wash 3 / times a day. The vast majority brush their teeth upon awakening and only 4 after lunch.

The presentation to the doctor is not for aesthetic reasons, most patients with periodontal disease being smokers and or not alcoholics, neglecting their physical appearance, so that 15 of the people included in the study had pain as the reason for the presentation, at a considerable distance being followed by those with gingival bleeding in number of 5.

Periodontal prophylaxis and oral-dental prophylaxis in general play a particularly important role in the prevention of caries and periodontal diseases, periodic control and carrying out

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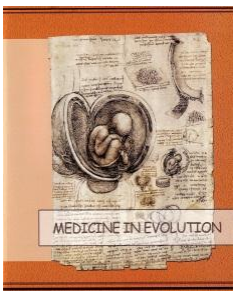
Incidence of carious pathology of the permanent primary molar



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Abstract

From a dental point of view, the man carries out his masticatory activity during all types of dentition: temporary, mixed and permanent. Temporary dentition fulfills multiple important roles for the period in which it is present in the oral cavity: biological, psycho-social, general somatic and psychic development of the child, conservation of space for the normal eruption of permanent teeth. Also, due to the exercise of the functions of the temporary teeth, a lot of stimuls are produced that lead to the modeling and development of the structures of the dento-maxillary apparatus.

Keywords: permanent primary molar, fillings, edentulousness.

INTRODUCTION

The aim of this study is to assess the treatment needs of permanent first molars in a group of subjects from the University of Medicine and Pharmacy "Victor Babeş" in Timişoara, Faculty of Dentistry, Pedodontics Discipline.

Dental caries is a condition with a multifactorial etiology that involves the interaction of the following factors: host, oral microflora, diet and a sufficiently long period in which the three previous factors coexist. For the formation of a caries it is necessary the interaction in time of all the factors, the destructive process is interrupted if one of these three factors disappears [1].

Retentive dental morphology and crowded dento-alveolar incongruence may contribute to patients' increased susceptibility to caries. The quality of the dental tissues as well as the low level of oral hygiene favor the appearance of caries. Among the general factors related to the host can be listed: host predisposition, age, sex, unfavorable socio-economic factors acting through cariogenic diets, reduced oral hygiene, reduced or absent fluoridation, lack of financial resources, and certain general diseases [2, 3].

During the mixed dentition, the young permanent teeth have a rugged occlusal relief, which favors the accumulation of plaque. In addition to the fact that the apical region of the root is not fully developed, the dental hard tissues are incompletely mineralized, more vulnerable to acid attacks. All these characteristics make them extremely susceptible to caries. That is why the use of prevention methods during this period, such as fluoridation, dental sealing, etc. they are extremely beneficial [4].

The permanent first molar is located in the lateral area of the arch and occupies the sixth position from the midline. Erupe around the age of 6, over a long period of time. From its submucosal stage to its eruption in the oral cavity and the establishment of occlusion ratios with antagonistic teeth, six months to a year pass. This period is devoid of functionality.

Its formation and mineralization take place, for the most part, in difficult moments of development. In the first year of life, imbalances frequently occur, which can cause disturbances in the mineralization of dental structures [5].

The posteruptive maturation of the enamel is done by: living on the arch with temporary teeth that are affected by carious lesions and have mobility, thus favoring food and bacterial plaque retention, disfavoring self-cleaning.

The eruption of the first molar represents a special morphological event, because by its appearance the distal limit of the canine-premolar corridor and the mesial limit of the molar corridor are established. It controls all dental movements in the occlusal field and is the only stable element during mixed dentition.

The first molars have a major importance in the further development of the dento-maxillary apparatus, a fact first observed by Angle who called them "the key to occlusion". The gearing mode of the upper first molar with the lower molar is used to classify certain abnormalities of the dento-maxillary apparatus [6,7].

On the occlusal surface of the pluriradicular teeth, at the level of the pits and dimples, coalescence defects can be observed which contribute to a much faster evolution of the caries process. The existence of wide dentinal canals will also lead to an increased dentinal permeability for both germs and materials used in sealing processes, respectively dental treatment. The large volume of the pulp chamber, the proximity of the pulpal horns to the cusps and an increased dentinal permeability lead to a rapid pulpal damage in the deep caries [8].

For this reason, pedodontists will use methods to preserve vitality, using the ability to defend the leg. Permanent first molars play several roles in the dento-maxillary apparatus and represent a key dental group within the dentition. Let's not forget that these teeth can also be the support of orthodontic devices that promote plaque retention [9,10,11].

Aim and objectives

Romania's socio-economic development is constantly growing. Although at the national level there are only a few pilot prevention educational programs, initiated by prevention teams within the Faculty of Dentistry and some associations of private clubs, and on the dental market are present professional dental hygiene products, tooth decay in children it has grown a lot lately. According to studies, it has been shown that cariogenic activity has three developmental trends (group with intense carious activity about 17.3% of the population, group with average carious activity about 55.7% of the population, group with average carious activity about 25% of the population). These become evident during the period of mixed dentition at 6-7 years and remain in the same proportions until 13-14 years.

The aim of this study is to evaluate the optimal methods of treatment performed on the permanent first molars, erupted in the oral cavity in different stages of root development and with a different degree of dental damage. The text included in the sections or subsections must begin one line after the section or subsection title. Do not use hard tabs and limit the use of hard returns to one return at the end of a paragraph. Please, do not number manually the sections and subsections; the template will do it automatically.

MATERIALS AND METHODS

This study was conducted on a group of 697 randomly selected subjects: 318 are female and 379 male, 385 are from rural areas and 312 are from urban areas.

The group was divided into 3 age groups. The first group consists of 241 subjects aged 6-8 years (34.6%), the second group consists of 296 subjects aged 9-11 years (42.5%), and the third group is consisting of 160 subjects aged 12-14 years (23%).

The inclusion criteria for the study were:

- Subjects who presented the first permanent molar completely erupted
- Subjects from urban and rural areas
- Subjects aged between 6 and 14 years
- Subjects who required dental treatments at the level of the permanent first molar

Exclusion criteria for the study included:

- Subjects who do not have a fully erupted permanent first molar
- Subjects who do not have a permanent primary molar due to early loss
- Subjects under the age of 6 to 14 years
- Subjects who did not agree with the proposed treatment plan

The legal representatives of the subjects completed the patient's consent and the medical questionnaire. They were also informed that the answers provided by them will be used in a study, and all personal data are protected by signing the GDPR.

The anamnesis included personal data (age, origin), personal pathological history, dental history, information on current suffering. All these were recorded in the patient's file.

The clinical examination of the patients was performed both exobuccally and endobuccally with specific instruments or with the help of the Diagnodent. All information was recorded in the patient's file. Subjects who subsequently required complex dental treatment performed a complementary examination - dental radiography.

Before starting the dental treatments, the subjects underwent professional tooth brushing, using a professional paste that does not contain fluorides or oily constituents in order not to diminish the adhesion of the restoration materials.

For dental seals the following protocol was used: professional toothbrushing, saliva and roller insulation, acid gravel (1 minute), water jet washing for 30 seconds, air drying, sealant application, light curing of the material. sealing with the light curing lamp (30 seconds), checking the sealing with the help of the articulation paper.

The following protocol was used for dental fillings: professional toothbrushing, dam insulation, selective acid etching (15 dentin -30 seconds enamel), water jet washing for 30 seconds, air drying, adhesive application and light curing (30 seconds). seconds), application and modeling of RDC, polymerization of RDC material with light curing lamp (20 seconds), verification of the filling with the help of articulation paper, finishing, polishing.

Subjects who required endodontic treatment, tooth extraction, orthodontic treatment at the level of permanent first molars were referred to doctors specializing in endodontics, dento-alveolar surgery and orthodontics.

The collected data were statistically analyzed using the Chi2 test.

RESULTS

A total of over 96% of the subjects required dental treatment at the level of permanent first molars. The operations consisted of sealing, preventive fillings, fillings, endodontic treatment, dental crowns, dental extractions and orthodontic treatments.

Of the 697 subjects examined: 97 dental units required sealing of the first permanent molars, 141 dental units required preventive fillings, 317 dental units required fillings, 248 dental units required endodontic treatments, 72 dental units had indication for prosthetic restoration, 108 dental units required extractions, 96 dental units required orthodontic treatment.

Subjects from rural areas had a higher degree of carious lesions (55.2%) than patients from urban areas (44.8%).

Following the analysis of the data collected with the help of the Chi2 test, the following conclusions were reached.

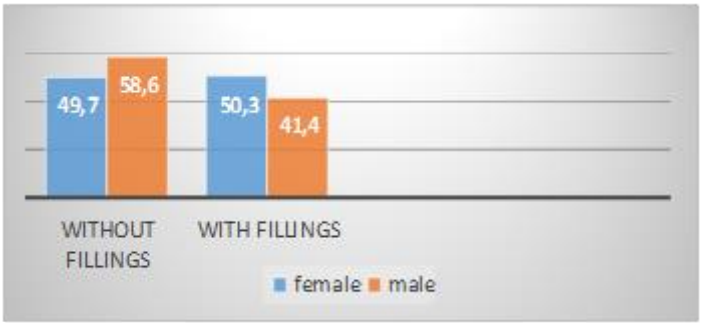

Figure 1. Proportion of subjects with fillings

The proportion of subjects who have fillings is significantly increased among females (Chi2 test, p = 0.019).

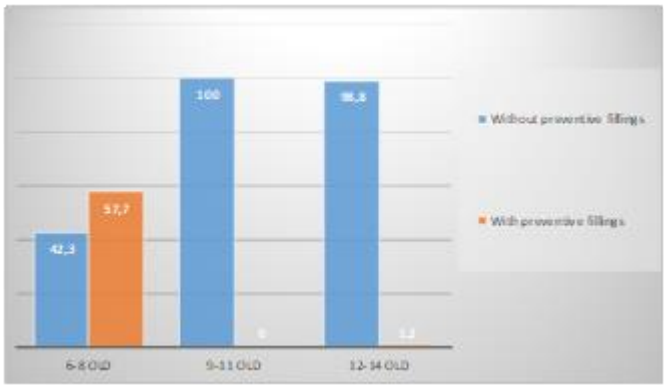

Figure 2. Proportion of subjects with preventive fillings

The proportion of subjects who have preventive fillings is significantly increased among those in the 6-8 years category (Chi2 test, p<0.001).

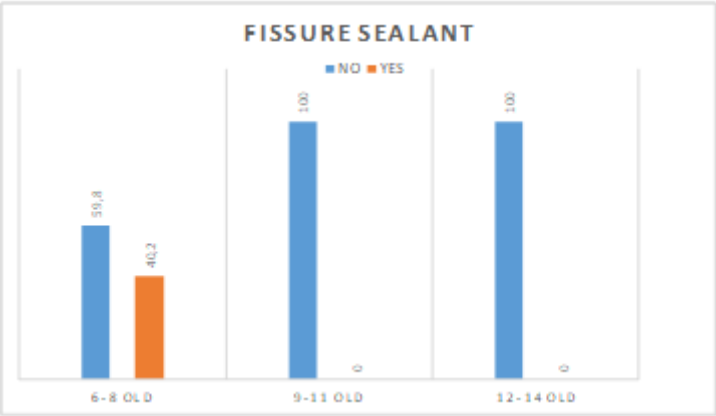

Figure 3. Proportion of subjects with fissure sealant

The proportion of subjects who have seals is significantly increased among patients in the 6-8 years category (Chi2 test, p <0.001).

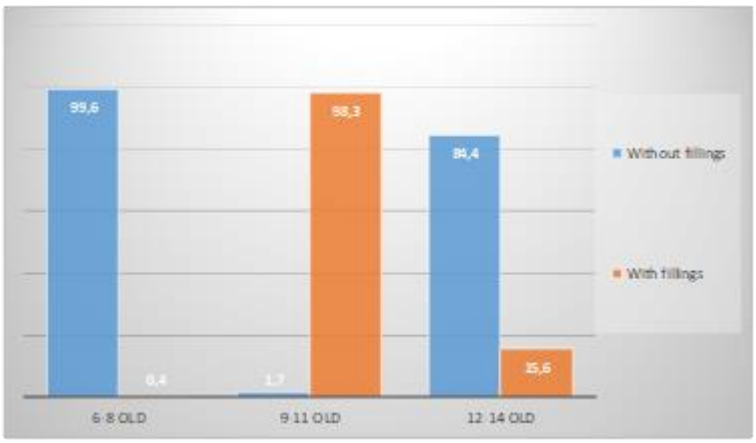

Figure 4. Proportion of subjects with fillings

The proportion of subjects who have fillings is significantly increased among those in the 9-11 years category (Chi2 test, p<0.001)

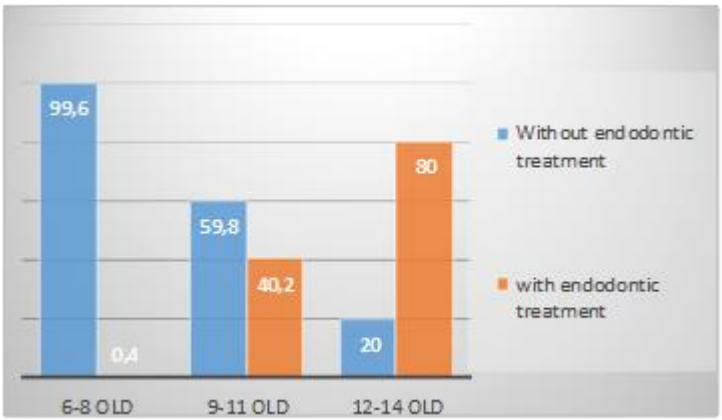

Figure 5. Proportion of subjects with endodontic treatment

The proportion of subjects who have endodontic treatments is significantly increased among those in the 12-14 years category (Chi2 test, p<0.001)

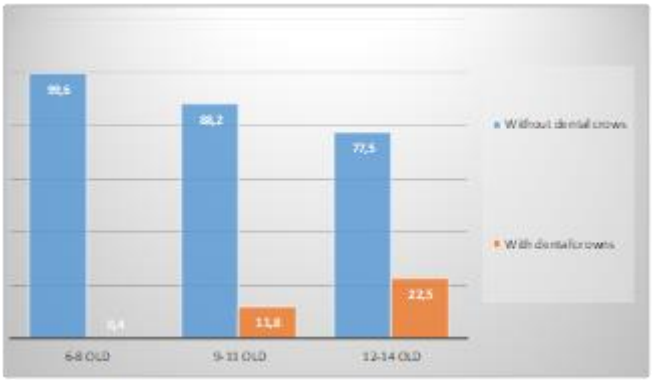

Figure 6. Proportion of subjects with dental crown

The proportion of subjects who have dental crowns is significantly increased among those in the 12-14 years category (Chi2 test, p<0.001)

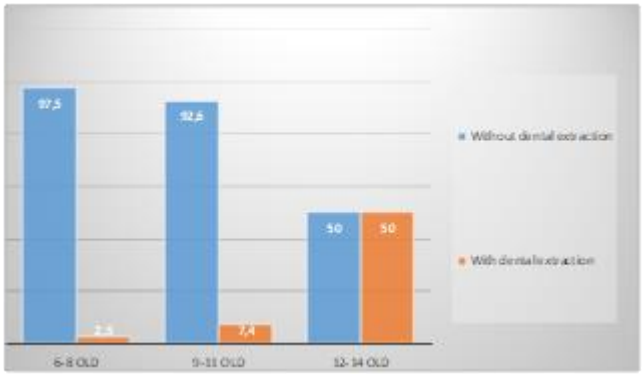

Figure 7. Proportion of subjects with tooth extraction

The proportion of subjects who have tooth extractions is significantly increased among those in the 12-14 years category (p<0.001)

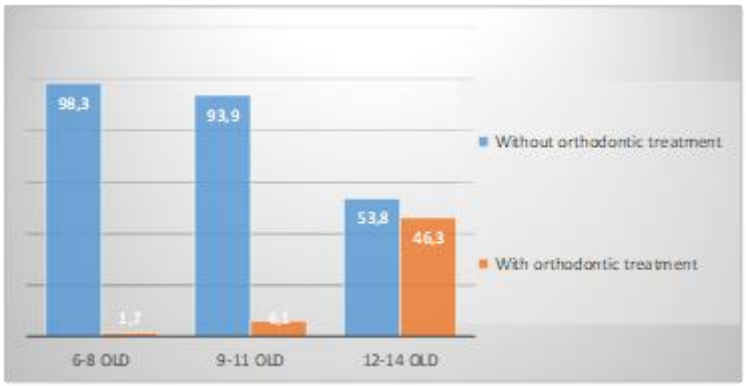

Figure 8. Proportion of subjects with orthodontic treatment

The proportion of patients who have orthodontic treatments is significantly increased among those in the 12-14 years category (p<0.001)

CONCLUSIONS

Due to the accentuated morphology at the level of the grooves and dimples at the level of the permanent first molar, the diagnosis of caries is difficult to make by direct examination. It is also difficult to specify the rate of progression of the lesion.

That's why patients with murmurs need regular checkups. The interval between controls is established according to several criteria (age, its cooperation for a proper brushing, as well as for the compliance of dental treatments, lesions present / absent in other dental units, high carioactivity in temporary dentition is likely to provide a susceptibility high permanent tooth decay, frequent sugar intake).

The need for dental treatments was due to the increased incidence of caries in the permanent first molars. Any combination would have the level of oral bacteria, oral hygiene habits, diet, the use of flowers or salivary contents and if they protected them from caries, it is not certain that it would protect them in the future. If pathogens or caries protectors change significantly, they may become susceptible to these conditions.

The management strategy proposed for the patients in this study is to maintain the balance in favor of protective factors and to be aware of the possibility of changing the risk of caries over time.

Periodically, at each control session, it is necessary to re-evaluate the caries risk due to a possible change in oral hygiene, bacterial levels, diet, salivary flow, use of flowers.

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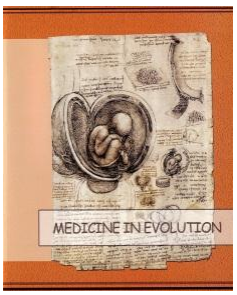
Fixed prosthetic treatment of patients with periodontitis – case report



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Abstract

Oral health as an integral part of general health. Prosthetic rehabilitation of patients with periodontal disease is often challenging and difficult. Restoring periodontal health is essential for successful prosthodontic rehabilitation.

Patients present to the dentist's office at different stages of periodontal disease: gingival retractions, periodontal abscesses, dental mobility. The relationship between the patient's periodontal situation and prosthetic treatment should be correlated with oral hygiene [1]. Treatment objectives for periodontal disease include control of infections, stopping disease progression, replacing missing teeth, correcting anatomic defects and maintaining periodontal health. Advances in technology and biomaterials have expanded the possibilities for aesthetic optimization in restorative dentistry.

A correct diagnosis and an appropriate treatment plan are key factors in prosthetic treatment in patients with periodontal disease.

Keywords: periodontal disease, prosthetic treatment, missing teeth.

INTRODUCTION

Periodontal disease is a major cause of pain, physiognomic and masticatory disorders and even tooth loss in adults. Also, representing a bacterial outbreak, it increases the risk of developing heart, kidney, digestive, respiratory diseases, etc. Without dental and periodontal health, general health is often compromised. Many systemic diseases give specific reactions in the oral cavity.

Periodontitis is an inflammatory disease caused by specific bacteria located in the oral cavity [2,3]. It has been classified in aggressive periodontitis and chronic periodontitis. It is one of the most serious dental diseases, affecting all age groups. It is also found in children and adolescents, at which it manifests as gingivitis, localized or generalized prepubertal periodontitis, juvenile periodontitis and periodontal diseases associated with systemic disorders [4].

The edentulous patient with periodontal disease is best managed by consulting a team of prosthodontist, periodontist and frequently includes endodontist, orthodontist and oral surgeon. Communication with the patient is also required for better treatment result.

In the case of patients with chronic marginal periodontitis, the treatment is complex and some precautions are needed regarding the pre- and pro-prosthetic, definitive prosthetic treatment and the materials used for prostheses. Pre-prosthetic periodontal preparation is essential for the success of prosthetic treatment using fixed prostheses [5,6]. In modern dentistry, this can easily be achieved when an interdisciplinary approach is applied [7,8].

Any patient whose periodontium has been affected will require rehabilitation of both periodontium and affected tooth structure. These patients present in different stages of evolution of periodontal disease depending on the physiognomic requirements, the socio-cultural situation, but especially the socio-economic conditions.

CLINICAL CASE REPORT

A 51-year-old woman addressed to the dental office, complaining of dental mobility, bleeding gums and chewing disabilities.

On radiological examination, orthopantomography reveals the appearance of generalized, vertical, uneven alveolar bone destruction, with approximate septal defects (Figure 1). Individual periodontal prognosis is bad for teeth 11, 12 and 21 because insertion loss has reached the root apex.

Figure 1. Orthopantomography of the patient

Several clinical procedures were performed during the hygienic phase in order to stop periodontal infection and to teach the patient how to maintain good oral hygiene. This included: patient's motivation and education on oral health, supragingival periodontal preparation with scalers and curettes, dental prophylaxis with toothbrush and prophylactic paste. It was also done subgingival periodontal preparation to entire mouth which included: non-surgical scaling and root planning with curettes and sonic-scaler machine to remove

subgingival irritants and disorganize adhered and non-adhered bacterial flora. A decontaminated root surface must be obtained to achieve new attachment. Once the plaque situation is firmly under control, even teeth with advanced destruction of the supporting tissues may be used as abutments. We prescribed Amoxicillin 500mg three times a day during seven days, as a complement to periodontal therapy.

We used a protocol for full mouth disinfection which consists of instrumentation of all periodontal pockets in two visits within 24 hours in combination with the adjunctive use of chlorhexidine mouthwash (Corsodyl) and gel (Glucosite) to disinfect any bacterial reservoirs in the oral cavity.

Before performing tooth extraction with poor periodontal prognosis, the teeth adjacent to the future frontal edentulous area were prepared, in order to achieve a temporary acrylic prosthesis (Figure 2). Temporary restoration is necessary during prosthetic treatment in patients with periodontal disease, by immobilizing the remaining teeth and ensuring dento-facial aesthetics (Figure 3).

Figure 2. Preparation of adjacent teeth for temporary prosthesis, and extraction of frontals with bad periodontal prognosis

Figure 3. Temporary fixed acrylic partial denture

After the reassessment period of two months, clinical parameters such as probing depth, clinical junction level, bleeding at probing, and the inflammatory clinical signs showed improvement.

As a definitive prosthetic treatment, it was decided to make a fixed metal-ceramic prosthesis (Figure 4). For the defect of excessive hard and soft tissue we used gingival-colored porcelain (Figure 5).

Figure 4. Partial fixed metal-ceramic prosthesis, front and occlusal view

DISCUSSIONS

The use of a systemic antibiotic as a complement to periodontal therapy has been extensively studied. Many studies demonstrated that patients treated this way present better clinical results than the ones who did not receive a systemic antibiotic [9-12]. Other studies indicates that the adjuvant use of systemic antibiotics to treat chronic periodontitis does not result in clinically significant improvements to patient outcomes compared with those achieved by root surface instrumentation alone [13-18]. Systemic antibiotics may be appropriate in the management of aggressive periodontitis as an adjunct to full-mouth scaling and root planning, and in conditions of rigorous hygiene [19].

During the initial therapy the aim is: the removal and temporary replacement of restorations that do not lead to good oral hygiene, the temporary replacement of teeth with a poor prognosis and temporary prosthetic planning [1].

For situations where subgingival margin is required, certain principles must be taken into account: sufficient width of keratinized gingiva, smooth restorative surfaces [20].

Another goal is to create or maintain a high standard of oral hygiene. It is necessary to explain to patients the oral hygiene techniques and the need for regular professional maintenance [1,20].

CONCLUSIONS

From a periodontal point of view, the SVI (stability, vitality, and integrity) rule of a tooth, are indications to keep it on the arch and to start regenerative therapy, even in a very compromised clinical situation.

Due to dental loss suffered by most patients with periodontitis, it is necessary to perform a prosthetic treatment to restore the functionality and aesthetics, thus improving quality of life. The complexity of the rehabilitation treatment depends on the effects produced by the periodontal disease.

The success in the treatment of this patient is the result of several elements: the patient's education and active participation in the treatment, the planning of a comprehensive treatment plan and its implementation by an interdisciplinary team: prosthetist and periodontist.

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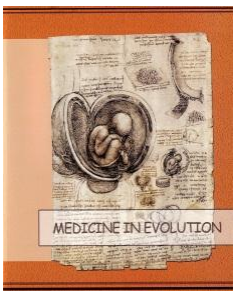
ERRATA - Geographic tongue in adults and children



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Abstract

Geographic tongue is a benign oral condition with a migratory pattern of the dorsal tongue. Aim and objectives: This paper aims to emphasize the etiology, epidemiology, pathogenesis and associated factors of geographic tongue, in an effort to improve the means of misdiagnosed and overtreated cases in adults and children. The variable clinical features of this condition are described. Moreover, geographic tongue can be an oral manifestation of psoriasis, thus further investigations are necessary. Recent data on oral microbiota, salivary changes and treatment strategy are also presented.

Keywords: Geographic tongue, migratory glossitis, oral psoriasis.

Note! This errata refers to the title of the article published in no. 2/2020 of the journal.

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Manuscripts will not exceed:

- general reviews: 6-8 pages
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The paper will be edited according to international editing rules for manuscripts. The title will be written in capital characters and it will be followed by the name and surname of the author (authors), followed by their place of work (place where the paper has been elaborated). Studies and researches will be followed by a brief abstract, followed by 3-4 key-words.

The body of the paper will be structured on the following chapters: introduction, aim, objectives, material and method, results and discussions, conclusions. The references will be presented alphabetically and in conformity to the Vancouver Convention, including:

- for articles: name of the authors and surname initials, title of the article in the original language, title of the journal according to the international abreviation system, year of issue, volume, number, pages;
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Citation of references inside the body of the paper will be put between brackets, Harward style (author, year) or Vancouver style (number in square brackets or superscript). Cited reference titles will be selected, maximum 6 for studies and case presentations and 12 for general reviews. Acceptance, rejection or the need of alterations in sent materials, or in inconography, will be comunicated to the authors in due time. For this, the authors will indicate the person and address for corespondence (phone number, e-mail address). Given the less pleasant experience of the editorial board with some articles being rejected because they did not meet publishing criteria, we decided to support those who intend to publish in this journal by detailing the way such a paper should be elaborated, as well as our requirements.

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Paternity must reflect the common decision of the coauthors. Each author must have participated enough to take public responsability for the content. A paper with collective paternity must have a key person responsable for the article.

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Do not use name of patients, initials or hospital observation charts numbers. If a photograph of a body part which could allow direct or deductive recognition of the patient needs publishing, then the paper must be accompanied by the written consent of the patient and clinician, as well.

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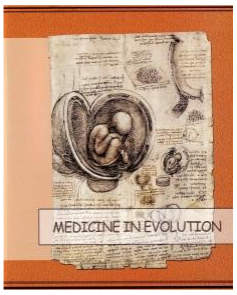
6.1. CONTENT OF THE PAPER - INDICATIONS FOR ORIGINAL ARTICLES

Paper title [Book Antiqua 20, bold, left alignment]



Surname N.[1], Surname N.[2] [Book Antiqua, 14, bold]

[1] *Author Affiliation (DEPARTMENT, FACULTY, UNIVERSITY, CITY/COMPANY) [10, italic]*
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Abstract [Book Antiqua, 12, bold, justify alignment]

Recommendations for original studies

Original studies must include a structured abstarct of maximum 150 words, containing the following titles and informations: Aim and objectives; Material and methods; Results; Conclusions; Key words: give 3-5 key words; The abstract will be translated into an international circulation language.

Keywords: Innovation, technology, research projects, etc. [Book Antiqua 9].

INTRODUCTION [Book Antiqua, 11, bold, left alignment]

Introduction presentation of general aspects, in the context of the approached theme.

Introduction include **Aim and objectives –** Define the aim of the article. Briefly expose the rationale of the presented study or observation. Make strictly pertinent referals and do not exhaustively review the subject. Do not include data or conclusions from the paper.

There is a limitation of 4/6 pages. All pages size should be A4 (21 x 29,7cm). The top margins should be 2 cm, the bottom, right, margins should be 2cm and left margins should be 2,85 cm. All the text must be in one column and Book Antiqua font, including figures and tables, with single-spaced 10-point interline spacing.

***Aim and objectives* [Book Antiqua 11, bold italic, left alignment]**

The text included in the sections or subsections must begin one line after the section or subsection title. Do not use hard tabs and limit the use of hard returns to one return at the end of a paragraph. Please, do not number manually the sections and subsections; the template will do it automatically.

[Book Antiqua, 11 point, normal, justified alignment].

MATERIAL AND METHODS [Book Antiqua, 11, bold, left alignment]

Describe the selection of observations or subjects for the experiment (including controls). Identify methods, equipments (with the name and address of the manufacturer in brackets) and give sufficient details on procedures. Give references for the selected methods, including statistical methods; offer details and brief descriptions for previously published methods which are not well known; describe new or substantially modified methods, justify their use and assess their limitations. Precisely identify all used drugs and chemicals, including generic names, dosage and administration ways. Describe statistical methods with sufficient details for reported results to be verified. Whenever possible, quantify discovered aspects and present them with appropriate measurement indicators for the uncertainty or error of measurement (such as confidence intervals). [Book Antiqua, 11 point, normal, justified alignment].

RESULTS [Book Antiqua, 11, bold, left alignment]

Present results in a logical succession as text, tables and illustrations. Emphasize or briefly describe only important observations. [Book Antiqua, 11 point, normal, justified alignment].

DISCUSSIONS [Book Antiqua, 11, bold, left alignment]

Underline new, important aspects of the study. Do not repeat in detail data which have been presented in previous sections. Include implications of revealed aspects and their limitations, including implications for future studies. Connect your observations to other relevant studies. Relate the results to the aim proposed for the study. [Book Antiqua, 11 point, normal, justified alignment].

CONCLUSIONS [Book Antiqua, 11, bold, left alignment]

Organize conclusions which emerge from the study. In the end state: a) contributions to be acknowledged but which do not justify paternity right; b) thanks for technical support;

c) thanks for financial or material support. [Book Antiqua, 11 point, normal, justified alignment].

REFERENCES [Book Antiqua, 11, bold, left alignment]

A numbered list of references must be provided at the end of the paper. The list should be arranged in the order of citation in the text of the publication, assignment or essay, not in alphabetical order(according to the Vancouver rules). List only one reference per reference number. It is very important that you use the correct punctuation and that the order of details in the references is also correct.

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6.2. CONTENT OF THE PAPER - INDICATIONS FOR CASE REPORTS

Content of the paper for case report will respect indications for original articles.

Themes may be selected from all medical fields. Manuscripts which offer a special gain for daily activity will have priority. The title must be clearly, precisely stated. It may be completed by a subtitle. It is advisable to include in the key words of the title the main message, the special element which may be observed from the case evolution. The content of a case report must be divided into three parts:

Introduction – It must include a maximum of 15 typed rows (half page). Here, the main medical problem is summarized in order to place the case in a specific domain.

Case report – It contains essential specific information on the case. In order to make a logical, chronological and didactical case report the following 5 chapters are needed:

I. Anamnesis;
II. Clinical examination data;
III. Laboratory data;
IV. Additional paraclinical investigations;
V. Treatment and evolution.

Discussions – The reason for the case report must be stated. The report must be patient-centered. Occasional deviations from typical (characteristic) evolutions, nosologically important facts must be presented in such a manner to expose the clinical picture as completely as possible. The case report must not appear as an appendix of a general review. Dimensions of a case report: maximum 6-8 typed pages, 30 rows of 60 characters/page.

6.3. MEASUREMENT UNITS, SYMBOLS, ABREVIATIONS

All measurements must be expressed in International System (IS) units. Abreviations must be fully explained when first used.

6.4. TABLES

Tables are noted with Roman figures and they will have a brief and concise title, concordant with their content.

6.5. ILLUSTRATIONS

Number all illustrations in Arabic figures in a single succession. Apply a label on the back side of every illustration, containing its number and an arrow indicating the upper side. Coloured illustrations may be accepted but it is the choice of the editors, according to particular technical abilities of each journal issue, or it may involve a fee in special cases.

6.6. EXPLANATIONS FOR DRAWINGS AND GRAPHS

Explanation for drawings and graphs must be clear and in readable dimensions, considering the necessary publishing shrinkage.

6.7. PHOTOGRAPHS

Offer glossy, good quality photographs. Any annotation, inscription, etc. must contrast with the ground. Microphotographs must include a scale marker.

6.8. ILLUSTRATION LEGENDS

Include explanations for each used symbol, etc. Identify the printing method for microphotographs.

7. COPIES FOR PUBLISHING

In order to accelerate publishing, the main author will send a set of printed sheets presenting the final version of the paper, as it will appear in the journal. It is really helpful that texts to be also sent on electronic support, diacritic characters mandatory.

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If a paper does not meet publishing conditions, whatever these may be, the editors will notify the first author on this fact, without the obligation of returning the material. Original photographs or the whole material will be returned only if the author comes to the editor and takes them.

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