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ORIGINAL

Behavior of Denture Stomatitis in Adults Over 45 Years of Age

Comportamiento de la estomatitis subprotésica en adultos mayores de 45 años

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ABSTRACT

Introduction: denture stomatitis is a commonly used term to refer to mucosal alterations in the oral cavity of denture-wearing patients.
Objective: to describe the behavior of denture stomatitis in adults over 45 years of age.
Method: an observational, descriptive, cross-sectional study was conducted on patients belonging to Medical Office 131 of the "Abel Santamaría Cuadrado" Hospital, Pinar del Río, from January 2022 to December 2023. The population consisted of 479 patients, and the sample included 85 patients selected by non-probabilistic expert criteria sampling. An interview and clinical examination were conducted for all patients. Absolute and percentage frequencies, Chi-square, and Odds ratio were used as summary statistical measures.
Results: type II stomatitis predominated in female patients over 60 years old. All grade III patients had been using dentures for 8 years or more. Incorrect use of dentures, ill-fitting dentures, and poor oral hygiene were the predominant risk factors. Inadequate knowledge levels were most common in patients aged 77 and older.
Conclusions: in the studied population, type II denture stomatitis predominated in female patients over 60 years old, which was associated with incorrect use of the prosthetic device, poor oral hygiene, ill-fitting dentures, lack of replacement for more than 4 years, continuous use, and insufficient knowledge about their care and management, which worsens with age.

Keywords: Adults; Denture Stomatitis; Dental Prosthesis; Oral Candidiasis; Oral Lesions; Risk Factors.

RESUMEN

Introducción: la estomatitis subprótesis es un término comúnmente empleado para referirse a las alteraciones mucosas de la cavidad bucal de pacientes portadores de prótesis.
Objetivo: describir el comportamiento de la estomatitis subprotésica en adultos mayores de 45 años.
Método: estudio observacional, descriptivo de corte transversal en pacientes pertenecientes al Consultorio Médico 131 del Hospital "Abel Santamaría Cuadrado", Pinar del Río en el período enero/2022 –diciembre/2023. El universo estuvo conformado por 479 pacientes y la muestra por 85, seleccionados por muestreo no probabilístico de tipo a criterio de expertos. Se realizó interrogatorio y examen clínico a todos los pacientes. Como medidas estadísticas de resumen se emplearon frecuencias absolutas y porcentuales, Chi-cuadrado y Odds ratio.
Resultados: predominó la estomatitis tipo II, sexo femenino y edades mayores de 60. La totalidad de los pacientes grado III tenían 8 años y más usando las prótesis. El uso incorrecto de las prótesis, prótesis desajustadas y mala higiene bucal, fueron los factores de riesgo predominantes. El nivel de conocimientos inadecuado predominó en pacientes de 77 y más años.
Conclusiones: en la población estudiada, predominó la estomatitis subprótesis del tipo II en pacientes femeninas, mayores de 60 años; lo que se asoció al uso incorrecto del aparato protésico, deficiente higiene bucal, prótesis desajustadas, sin reemplazo por más de 4 años, uso continuo, e insuficiente nivel de conocimientos sobre el cuidado y manejo de los mismos, que empeora con la edad.

Palabras clave: Adultos; Estomatitis Subprótesis; Prótesis Dental; Candidiasis Bucal; Lesiones Orales; Factores de Riesgo.

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INTRODUCCIÓN

The act of covering the masticatory mucosa with a prosthesis, as well as the traction, thrust, and pressure produced, creates a non-physiological mechanical invasion of the tissues. This can irritate the mucous membranes.[1]

When these effects intensify, they constitute a pathogenic stimulus that alters this balance and causes tissue irritation with subsequent inflammatory reactions. Of these, the most common is subprosthetic stomatitis, which has been described as a mucosal lesion of the hard palate in wearers of mismatched acrylic and metal prosthetic appliances, which has been linked to pathogens, including Candida albicans, staphylococci, and streptococci, located on the oral lesions and internal surfaces of the prostheses.[2,3]

This is the most common condition in prosthetic services, so prosthetic rehabilitation cannot be started immediately. It is commonly believed that two-thirds of denture wearers suffer from this condition to some degree.[4]

Lesions are usually located on the maxillary mucosa, less frequently on the mandibular mucosa; they are usually asymptomatic but occasionally present with burning, tingling, discomfort, and pain.[4]

There are several ways to classify them. However, the classification provided by Newton is one of the most used for its simplicity and usefulness; taking into account their clinical appearance, they are grouped into three types (I, II, III) that express the different stages suffered by the carriers of subprosthetic stomatitis according to the severity of the lesions.[2,3]

Type I: Simple localized inflammation. Characterized by the presence of petechiae, small inflammation in delimited areas on the palatal surface is caused by poor fit of the dental prosthesis.

Type II: Generalized simple inflammation. The inflammation extends over the entire mucosal surface that supports the prosthesis. It is the most common type of prosthetic stomatitis and is delimited by the margins of the prosthesis.

Type III: Granular or papillary hyperplastic inflammation. Characterized by presenting a granular inflammatory aspect in the palatal mucosa. This inflammation can be present in all the mucosa or only in the central part of the palate.[4]

The disease is detected upon interrogation and clinical and oral examination of the patient. Its diagnosis and treatment are established in primary care institutions; in cases of type three stomatitis, these should be referred to the maxillofacial surgery service.[2]

Both in the study and prognosis of the disease, it is associated with various triggering factors or mechanical causes such as maladjusted prosthetic appliances, the material used in its manufacture, duration, and form of use of the appliance, hygienic causes, smoking; biological causes such as stress and endogenous factors associated with systemic diseases, microbial and allergic causes, dietary and nutritional factors, age, sex, xerostomia, among others. It has been observed in clinical practice and scientific studies that these lesions are usually superinfected with the fungus Candida albicans, appearing in 75 % of the cases.[3,5]

Subprosthetic stomatitis is a common disease in the world, so there are additional factors that aggravate the possibility of progression to precancerous lesions, requiring early diagnosis and appropriate treatment.[5]

The prevalence of subprosthetic stomatitis is between 25 and 65 %; it involves patients between 25 and 90 years of age. These are inflammatory lesions with tissue hyperplasia and edema associated with the biological support zone of the prosthesis, accompanied in some cases by angular cheilitis and inflammatory gingival hyperplasia.[6]

Worldwide, the prevalence of the disease ranges from 25 to 65 % in adult denture wearers. Epidemiological studies carried out in countries with a high level of development show higher values (40-70 %). In Cuba, the reported levels of affectation are also high, ranging from 11 to 67 %.[6,7]

In the province of Pinar del Río, studies on oral lesions in older adults report increased incidence, severity, and risk of malignant subprosthetic stomatitis, with greater presence in the female sex and patients aged 60-69 years.[8,9]

Due to the relevance of the subject, it was decided to carry out a study to describe the behavior of subprosthetic stomatitis in adults older than 45 years belonging to the Medical Clinic 131 of the "Abel Santamaría Cuadrado" Hospital, Pinar de Río municipality.

METHOD

The study was descriptive, observational, and cross-sectional in patients over 45 years of age, belonging to the Medical Clinic 131 of the "Abel Santamaría Cuadrado" Hospital of Pinar del Río during the period January 2022 to December 2023.

The universe consisted of 479 patients over 45 years of age belonging to the CMF 131.

The non-probabilistic sample of expert criteria type included 85 patients older than 45 years old, carriers of stomatological prosthesis, with the presence of subprosthetic stomatitis, who accepted to participate in the research. Psychologically and emotionally affected patients were excluded. Empirical methods included documentary analysis, observation, and a survey conducted by the researchers and validated by a committee of experts to determine the level of knowledge about risk factors and clinical characteristics of subprosthetic stomatitis. Absolute and percentage frequencies were applied to the processing and tabulation of the information. Inferential Chi-square test and Odds ratio calculation were performed. In all analyses, differences with $p < 0,05$ % were considered statistically significant. The analyses were performed using SPSS version 2.1.

Ethical Aspects

Fundamental aspects, such as the reliability of the information and protection of the identity of the participants, established in the Helsinki Declaration for medical research on individuals, were considered.

RESULTS

Table 1 shows the distribution of patients according to age, sex, and type of stomatitis. It could be seen that the group from 61 to 76 years old presented the highest frequency of affectation with 51,8 %, female sex with 57,6 %, and subprosthetic stomatitis grade II (62,4 %).

Table 1. Distribution of patients according to age, sex and type of subprosthetic stomatitis. Abel Santamaría Cuadrado" Hospital. January/2022 - December/2023

Age	Type of stomatitis							
	Type I		Type II		Type III		Total	
	No	%	No	%	No	%	No	%
45-60	0	0	11	20,8	2	66,7	13	15,3
61-76	17	58,6	26	49,1	1	33,3	44	51,8
77 and more	12	41,4	16	30,2	0	0	28	32,9
Sex								
Male	12	41,4	24	45,3	0	0	36	42,4
Female	17	58,6	29	54,7	3	100	49	57,6
Total	29	34,1	53	62,4	3	3,5	85	100

In the distribution of risk factors, described in table 2, incorrect use of dentures (92,9 %), maladjusted dentures (80 %) and poor denture hygiene (64,7 %) prevailed.

Table 2. Risk factors present in patients with subprosthetic stomatitis

Risk factors (n=85)	No	%
Smoking	41	48,2
Consumption of hot food	24	28,2
Incorrect use of prosthesis	79	92,9
Use of irritating substances	10	11,8
Poor oral hygiene	52	61,1
Poor hygiene of the prosthesis	55	64,7
Denture maladjustment	68	80,0

In the description of the time of use of the prosthesis according to the type of stomatitis (table 3), the use of prosthesis was more frequent between 4 and 7 years (63,5 %) and stomatitis type II (73,6 %). All patients with type III stomatitis had eight years or more of prosthesis use. Through the non-parametric Chi-square test performed to determine the association between the variables analyzed, a significant statistical association was found between the time of use of the prosthetic appliance and types of stomatitis ($p=0,001$, $p<\alpha= 0,05$).

Table 3. Time of use of the prosthetic appliance according to types of subprosthetic stomatitis

Time of use	Type of stomatitis							
	Type I		Type II		Type III		Total	
	No	%	No	%	No	%	No	%
1-3 years old	14	48,3	12	22,6	0	0,0	26	30,6
4-7 years old	15	51,7	39	73,6	0	0,0	54	63,5
8 years and older	0	0,0	2	3,8	3	100	5	5,9
Total	29	34,1	53	62,4	3	3,5	85	100

p*=0,001 *Test of χ^2; Significance level: p <0,05.

Table 4. Type of subprosthetic stomatitis and frequency of prosthesis use

Frequency of use	Type of stomatitis							
	Type I		Type II		Type III		Total	
	No	%	No	%	No	%	No	%
Continuo	19	65,5	39	73,6	3	100	61	71,8
Discontinuous	10	34,5	14	26,4	0	0,0	24	28,2
Total	29	34,1	53	62,4	3	3,5	85	100

p*=0,001 * Test of χ^2; Significance level: p <0,05.

The frequency of use of the prosthesis according to the type of stomatitis (table 4) showed a predominance of continuous

use of the prosthesis, with 71,8 % in all types of stomatitis. The non-parametric Chi-square test showed a statistically significant association between frequency of prosthesis use and types of stomatitis (p=0,001, p<α= 0,05).

The level of knowledge of the patients with prostheses regarding the handling of the prostheses according to age (table 5) showed a predominance of inadequate knowledge, with 85,9 % in all age groups. It stands out that all the patients aged 77 years and older had inadequate knowledge.

Table 5. Level of knowledge of prosthesis handling according to age

Knowledge	Age group							
	45 – 60		61 – 76		77 and more		Total	
	No	%	No	%	No	%	No	%
Adequate	8	10,5	4	9,1	0	0,0	12	14,1
Inadequate	5	38,5	40	90,9	28	100	73	85,9
Total	13	15,3	44	51,8	28	32,9	85	100

DISCUSSION

The results of the present investigation, in terms of age, sex, and type of stomatitis, coincide with Ramírez Barrios et al.[9], who registered a majority of female patients.

Women are concerned about esthetic issues, so they frequently go to the stomatology office and keep their dentures in place for as long as possible to avoid being seen without them.[9]

In addition, tooth loss usually occurs earlier. Women are more interested in prosthetic rehabilitation, which has been associated with psychological events related to stress and hormonal changes that occur around menopause that affect oral tissues by changing irrigation, saliva flow, and the circulation of antibodies.[9]

Similar results were obtained by Cruz Sixto et al.[10] in their research on oral lesions where stomatitis predominated, and they showed that 54,8 % were women and the predominant age group was 60 to 69 years old (43,7 %). Yero Mier et al.[11] reported a higher representation of women (66 %) and the age group 60-69 years (49,5 %).

Regarding the type of stomatitis, with results similar to the present study, grade II subprosthetic stomatitis predominated in investigations carried out by García Rodríguez[3], García Oñate[4] and Coste Reyes[8], who reported 52,9 %, 60,6 %, and 62,5 % respectively.

According to the degree of severity of stomatitis, changes and clinical characteristics of the disease are presented. Depending on its development, in more severe stages, they can cause precancerous or malignant changes and, with it, the appearance of different symptoms.[3]

It differs, however, from what was reported by Castañeda Saavedra[12] and Utria Labaceno[13], where it was obtained that type I stomatitis was the most common, with 59,6 % and 60 %, respectively.

Chávez Taset et al.[14], in their study, showed the presence of the disease in 94,4 % of the patients who used the prosthesis incorrectly, with deficient oral hygiene (59,7 %) and maladjusted prosthesis (43,1 %). Similar results were recorded in the present study.

Coste Reyes et al.[8] reported that a majority of subjects with poor oral hygiene (54,1 %), permanent use of the appliance (76,1 %), and maladjusted prostheses (73,9 %) were all similar to the present results.

On the other hand, Ramírez Barrios et al.[9] obtained partially similar results: smoking (74,1 %), followed by poor oral hygiene (71,7 %) and antibacterial plaque (69,3 %) predominated in the patients studied as the main predisposing factors for oral periprosthetic lesions.

García Rodríguez et al.[3] identified as prevalent risk factors the constant use of prosthetic appliances (76,2 %) and time of use of more than five years (40,1 %), in agreement with the data of this study.

In the literature consulted[8,9,14], there is evidence of an association between subprosthetic stomatitis and poor oral hygiene, which reflects a lack of understanding about the frequency and proper cleaning of the mouth and the prosthetic appliance. Poor prosthetic hygiene contributes to the accumulation of dental plaque at the base of the prosthesis, especially in poorly adapted prostheses.

The results in Table 3, which show the relationship between subprosthetic stomatitis and time of use of the appliance, show that, with the years of use, the fit of the prosthesis decreases significantly. This bad habit induces alterations in saliva, spontaneous closure of excretory ducts, and the buffering action of saliva. Also, it produces hypostatic changes due to an acidic and anaerobic environment due to the reduction of blood circulation caused by the pressure of the dentures, causing subprosthetic stomatitis.

Six to eight hours of rest per day is recommended to allow oxygenation, regeneration, and self-cleaning of the tissues through the tongue to reduce inflammatory lesions by reducing the time of exposure to bacterial proliferation. To avoid or limit damage to the oral cavity, it is also recommended to stimulate the mucosa by means of massages.[9,10,11]

In the research of Chávez Taset et al.[14], it was found that the most affected were patients with type I stomatitis, with prosthesis use time greater than eight years (73,6 %), which differs from this work. All patients with stomatitis grade II used their dental prosthesis for more than four years. This is similar to the study of Campo Prince et al.[15], where an association between the period using the appliance and the manifestation of the disease is proposed.

Similar results are shown by García Rodríguez et al.[3], who recorded 40,1 % of patients with more than 5 years of use of

their prosthesis. These authors state that prostheses should have a limited time of use because, as their time of use increases, their biomechanical principles decrease, which conditions the appearance of dissimilar injuries and discomfort.

Similarly, Coste Reyes et al.[8] report that oral lesions increase with the years of use of the prosthetic appliance, which is considered a significant risk in the affectation of the mucous membranes.

Cruz Sixto et al.[10] show that subprosthetic stomatitis appears mainly (38 %) in individuals using prostheses between six to ten years, similar to the present study.

Vázquez de León et al.[16] found that subprosthetic stomatitis appears more frequently in prosthesis wearers without replacement between 11 to 20 years (35,56 %), superior results compared to this research.

Similar results were obtained by Leon Gilart et al.[17], who stated that, among patients who used dentures incorrectly, the highest rate of stomatitis was type II, with 28 %. Continuous use reveals a statistically significant association with a higher risk of disease.

Chávez Taset et al.[14] found lesions in 62,5 % of individuals who used their dentures permanently, which resulted statistically in a highly significant relationship ($p<0,001$) between use and the presence of lesions.

In the authors' opinion, although subprosthetic stomatitis is a frequently investigated lesion, it remains one of the main oral health problems affecting the adult community of denture wearers. In spite of the intervention strategies that health institutions continuously carry out, the need to assume healthy behaviors, such as maintaining adequate oral and appliance hygiene and removing dentures during sleep, is still not assimilated. Similar results were obtained by Rodríguez Betancourt et al.[18], who observed that 60 % of the patients had a low level of knowledge about correct oral and denture brushing at the beginning of the study, and this increased in more than half of the patients after an intervention program was applied.

In the analysis of the patient's opinion on the importance and frequency of oral brushing and prostheses, according to the study by García Oñate et al.[19], an inadequate level of knowledge on this subject was observed, with significant differences with respect to those who had an adequate level of knowledge. The respondents did not know that dentures are cleaned with a toothbrush and toothpaste, nor how to clean their prostheses before going to bed; the majority expressed that it was not necessary to wash their mouths if they did not have teeth. Promotion and prevention allow the individual to have better control of his or her health through a series of measures designed to improve health and quality of life by preventing and eliminating the root causes of health problems rather than focusing solely on treatment.[19] As part of their daily educational work, health professionals train their patients on issues related to the use, care, hygiene, and maintenance of dental prostheses. In addition, they recommend visiting the stomatologist at least once a year and frequently checking the condition of the prosthetic appliances.

The authors express the need to implement intervention strategies to recognize the active role of each patient in promoting changes in their lifestyles, to develop in prosthesis wearers the practice of self-care, and thereby minimize or prevent the risk factors that affect this population and cause the appearance of oral diseases.

Therefore, it is concluded that in the population studied, type II subprosthetic stomatitis predominated in female patients older than 60 years, which was associated with the incorrect use of the prosthetic appliance, deficient oral hygiene, maladjusted prosthesis, without replacement for more than four years, continuous use, and insufficient level of knowledge about the care and management of the same, which worsens with age.

FINANCING

No funding was required.

CONFLICT OF INTEREST

There was no conflict of interest in this research.

AUTHORSHIP CONTRIBUTION

Conceptualization, research, content curation, formal analysis, supervision, visualization, writing-revision and editing: Ismey Márquez Lozano.

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Research, formal analysis, methodology, material resources, software, original draft-writing: Ivet Fra Santos, Laura Nieves Ordaz Galván.

Research, software, visualization, writing-revision and editing, material resources: Amanda Pérez Pérez, Carlos Ernesto Caro Becerra.

REFERENCES

1. Espasandín González S, Reyes Suarez VO, Martínez Borges Ad, Martínez Núñez Y. Urgencias por agresión al órgano paraprotésico según características de las prótesis estomatológicas. Medimay 2020; 27(2): e14. http://www.medimay.sld.cu/index.php/rcmh/article/view/1655

2. Escanaverino Oliva M, Bermúdez Alemán R, Fumero Manzanas M. Factores predictivos en la aparición de la estomatitis subprótesis. Medicentro Electrónica 2020; 24(3): e14.http://www.medicentro.sld.cu/index.php/medicentro/article/view/2917

3. García Rodríguez B, Rodríguez Cuellar Y, González Cardona Y. Estomatitis subprótesis en desdentados totales y parciales. Revista Latinoamericana de Hipertensión. 2022; 17(4): e5.https://www.saber.ucv.ve/ojs/index.php/rev_lh/article/view/25640

4. García Oñate B, Sabugueiro Mesa A. Estomatitis subprótesis en pacientes portadores de prótesis estomatológica. Medimay. 2023; 30(1): e7.https://revcmhabana.sld.cu/index.php/rcmh/article/view/2101/pdf

5. Barreiro Mendoza N, Díaz Pérez CA, Martin Moya LA, Martínez Rodríguez M, Santos Zambrano TB. Caracterización de la estomatitis subprotésica en portadores de prótesis removible en clínicas de la Universidad San Gregorio de Portoviejo, Ecuador. Rev. inf. cient. 2020 Abr; 99(2): 107-14.http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1028-99332020000200107&lng=es

6. Arias Pérez Y, Díaz Couso Y, Álvarez Bandera LC. Efectividad del extracto fluido de Vimang® en estomatitis subprótesis en pacientes mayores de 50 años. Opuntia Brava. 2022; 14(1): 115-23.https://opuntiabrava.ult.edu.cu/index.php/opuntiabrava/article/view/1155

7. Valencia Duche NP, Medina Benítez PG, Muñoz Duche DE, Escudero Medina CA. Estudio comparativo entre aloe vera y oleozón, en el tratamiento de estomatitis subprotésica: una revisión sistemática. Polo del Conocimiento: Revista científico-profesional.. 2022; 7(10): 370-90.http://dialnet.unirioja.es/servlet/articulo?codigo=9438967

8. Coste Reyes J, Carmona Concepción JA, Guerra Pando JA, López Rodríguez B, Labrador Falero DM. Caracterización de la estomatitis subprótesis en adultos mayores. Rev Ciencias Médicas. 2023; 27(3): e12.http://scielo.sld.cu/pdf/rpr/v27n3/1561-3194-rpr-27-03-e5672.pdf

9. Ramírez Barrios A, González Méndez FR. Afecciones bucales y factores de riesgo en adultos mayores portadores de prótesis dental. Rev Ciencias Médicas. 2022; 26(4): e11.http://scielo.sld.cu/pdf/rpr/v26n4/1561-3194-rpr-26-04-e5412.pdf

10. Cruz Sixto D, Palacios Sixto AJ, Perdomo Acosta AD, González Camejo DC, Arencibia García E. Factores causales en la aparición de lesiones bucales en adultos mayores. Universidad Médica Pinareña 2020; 16(2): [aprox. 8 p.].https://www.medigraphic.com/pdfs/revunimedpin/ump-2020/ump202k.pdf

11. Yero Mier IM, Pérez García LM, Fernández Serrano JM. Lesiones paraprotésicas en pacientes geriátricos portadores de prótesis removibles. Revista Información Científica.. 2021; 100(4): 1-8.http://www.medigraphic.com/pdfs/revinfcie/ric-2021/ric214b.pdf

12. Castañeda Saavedra S, Garrido Suárez G. Criocirugía en estomatitis subprótesis de adultos mayores. Clínica Estomatológica Docente H y 21. 2020. La Habana: Congreso Internacional Estomatología 2020. 2020. e11.http://www..estomatologia2020.sld.cu/index.php/estomatologia/2020/paper/view/50/56

13. Utria Labaceno EE, Matos Laffita D, Matos Cantillo DM. Efectividad del Oleozón tópico en la Estomatitis subprótesis. Policlínico Universitario "Fermín Valdés Domínguez". Baracoa, 2022-2023. La Habana: Jorcienciapdcl 2024. 2024. e13.https://jorcienciapdcl.sld.cu/index.php/jorgecienciapdcl2024/2024/paper/viewFile/663/1016

14. Chávez Taset I, Zamora Torres OI, Rodríguez Labrada MB. La estomatitis subprótesis en pacientes mayores de 60 años. Granma: Segundo Congreso Virtual de Ciencias Biomédicas. 2021: e14.https://cibamanz2021.sld.cu/index.php/cibamanz/cibamanz2021/paper/viewFile/715/464

15. Campo Prince OA, Hernández Hernández G, Paz Latorre E. Efectividad de la electroacupuntura en el tratamiento de la estomatitis subprótesis grado II. Prog 2020; 3(3): e11.https://revprogaleno.sld.cu/index.php/progaleno/article/view/250

16. Vázquez De León A, Palenque Guillemí A, Morales Montes de Oca T, Bermúdez Morales D, Barrio Pedraza T. Caracterización de pacientes portadores de estomatitis subprótesis. Medisur 2019; 17(1): 792-9.http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-897X2017000600007&lng=es

17. León Gilart A, León Gilart AA, Fernández Rosales F, García Blanco S. Estomatitis subprotésica en adultos mayores pertenecientes al Policlínico José Martí. Primer Congreso Virtual de Ciencias Biomédicas en Granma. Manzanillo. Cibamanz 2020[citado 07/07/2024].http://morfovirtual2020.sld.cu/index.php/morfovirtual/morfovirtual2020/paper/download/313/245

18. Rodríguez Betancourt MC, Yero Mier IM, Fernández Rodríguez CA, Álvarez Morgado A, Castro Yero JL, Acosta Cabezas M. Intervención educativa para mejorar la salud bucal de pacientes portadores de prótesis estomatológicas parciales. Gac Méd Espirit. 2022; 24(2): e12.http://scielo.sld.cu/pdf/gme/v24n2/1608-8921-gme-24-02-2324.pdf

19. García Oñate B, Hernández Otaño R, Martínez Castañeda I. Intervención educativa sobre el uso de prótesis dental en el adulto mayor. La Habana: I Convención Internacional de Odontología.. 2023; 24(2): e12.https://odontologiagranma.sld.cu/index.php/odontogran/2023/paper/viewFile/52/21