

Use of aloe in the treatment of stomatitis subprosthesis

Summary

Basis: Subprosthetic stomatitis is a frequent inflammatory lesion in patients rehabilitated with removable acrylic appliances caused by the interaction of multiple factors such as microflora, systemic factors and the prosthesis itself. Aloe Vera is a phytopharmaceutical of proven effectiveness in various oral conditions of inflammatory origin, whose pharmacological activity lies in the active compounds it contains.

Objective: To evaluate the efficacy of the topical application of aloe crystals in the treatment of stomatitis subprotheses as anti-inflammatory therapy, in patients carrying prostheses with acrylic bases in the "Leonardo Fernández" Clinic.

Methods: Quasi-experimental study developed in the prosthetics clinic of the Stomatology Clinic "Leonardo Fernández" of the Cienfuegos municipality, during the period from November 2015 to February 2016. The universe consisted of 40 patients, carriers of dysfunctional prostheses, who attended the consultation to begin prosthetic rehabilitation and that the initial clinical examination showed inflammatory conditions.

Results: The female sex and the age group of 60 years and older were more affected; Most of them carried misaligned prostheses and with more than 20 years of use. 100% of the population examined healed with the topical application of aloe vera. The treatment took effect in an average of 7 days with the removal of the prosthesis. There were no adverse reactions during the study.

Conclusion: Aloe vera in its natural state is an accessible and economical method to be used for curing the sub-prosthesis stomatitis that gives satisfactory results in a shorter time.

Keywords: Stomatitis subprosthesis, treatment, aloe, economical method, female sex, age group, careful medical attention, mucous membrane, disorders, hyperplastic lesion, high prevalence, biopsychosocial complex, patients, injuries inflates matorias, prostheses

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Introduction

The oral cavity, due to the multiple functions that it has in the life of man and its permanent exposure to physical, chemical and biological agents, has a peculiar significance, for which it deserves a more careful medical attention, both in the prevention and in the diagnosis early of any condition. It must be remembered that oral health is necessary to enjoy a high degree of general health.¹ The prosthesis dental suppose a solution esthetic Y functional to the waste of teeth Y, without doubts are one from the elements that contribute most to the quality of life of those who use them.² However, the biopsychosocial complex of patients with dental prostheses is relatively frequently affected, as it ceases to be a stimulus for supporting tissues and becomes a physical aggression to the oral environment.^{2,3} In this sense, several investigations have shown that prostheses, especially when they are old, misadjusted, incorrectly made or in poor condition, produce damage that together with inadequate lifestyles, contribute even more to the poor condition of the oral cavity and affect, in all aspects, the health of people, mainly that of the elderly.⁴ The injuries inflates matorias from the mucous membrane of the palate associates to use from prosthesis dental removable, They are disorders what by his high prevalence each time plus worrying for the professionals

managers to preserve the Health oral from the community, already what Besides from the own problems from the disease in his therapy, should contemplate here placement of the dentures Y by consequent the planning Y job from additional resources. Great part from the population what dwell in the countries subdesarrollado or l s or in pathways development is edent total or partial Y is carrier from a prosthesis.⁵

Stomatitis Subprosthesis is one of the most frequently diagnosed alterations in Oral Pathologies associated with the use of stomatological prostheses and is defined as an inflammatory type alteration, which can degenerate into a hyperplastic lesion if not treated in a timely manner. It usually occurs in the supporting mucosa, in totally or partially edentulous patients with removable mucosa-supported or dento-mucosal-supported prostheses, which are almost always in poor condition. That is why sample a high prevalence both in our country and in the rest of the world.¹ Traditionally there has been a great controversy regarding the most correct denomination for this disease. The first was made by Cahn in 1936 who called it "Denture soy mouth" "that translated into Spanish is sore or wounded." In this same year, Prior uses "Chronic denture palatitis", "referring for the first time to the chronicity of the process and its anatomical

location.” In 1956 Fisher called it “Stomatitis venerata”, which recalls the not very encouraging medieval terminologies, and means in the Latin sense poisonous or haunted. It is not until 1963 that Cawson suggests “Denture Stomatitis”, the most accepted definition in the English language, other terms such as Papillomatosis or Hiperplasia papillary pseudoepiteliomatous, where it is defined as a proliferation fibroepithelial.⁵ In a study accomplished in Cuba in 2002, this disease HE presented with a frequency from 46.1%, figure what match with the found in developed countries as Japan, Bélgica, Finland and England. The most affected sex was the female, coinciding with this with the reports of others countries.⁵ Initially the stomatitis subprosthesis was considered an allergic reaction to the base materials of the prostheses.

Later, it was argued that poorly adjusted prosthesis traumas (due to irritation due to rubbing of maladaptive bases to the maxilla, unbalanced central occlusion, unbalanced joint and premature contacts) were those that caused degeneration in the palatal salivary glands and microbial infection. *Candida albicans*, stress, and endogenous factors related to systemic and cardiovascular diseases have now been given importance. Like diabetes, anemia, among others.^{6,7} It begins with a congestion in some points of the mucosa and extends until it merges, being able to reach all the plated mucosa. In the beginning, it is characterized by an asymptomatic picture with minimal structural modifications that do not alert the affected individual, but experience indicates that although it is one of the benign alterations that is diagnosed the most, if it is not treated it can become pre malignant.³⁻⁵ Newton classifies the subprosthetic stomatitis depending on the degree of affection and the sign-symptomatological picture that occurs in the oral tissue adjacent to the prosthesis.⁶

Grade I: minimal, general and asymptomatic inflammatory signs. Hyperemic areas can be localized or in the form of small erythematous spots.

Grade II: The drawing of the contours of the prosthesis can be observed, the mucosal surface is bright red, diffuse erythematous areas appear that can be completely or partially covered by a gray-white exudates. Usually the patient expresses some subjective sensation.

Grade III: Lesion consisting of a thick mucosa, with irregular granules that sometimes take papillary aspects with maximum alteration in the central part of the palatine mucosa. The magnitude of the inflammatory signs is variable.⁶

The treatment to mitigate the effect involves a combination of the elimination of the risk factors and the use of local measures to the elimination of the conditions or biological factors from the site or foci to address.⁸ Taking into account that prosthetic stomatitis is an entity with a multi-causal etiology, its management consists in improving the hygiene and / or the patient's habits and dietary habits in order to allow the resolution of the pathology before the elaboration of a new prosthesis.^{8,9} In addition, the removal of the prosthetic device and the use of drugs that favor the resolution of the symptomatic picture should be considered, such as: antifungals, disinfectants used in mouthwashes, conditioners that contribute to the proper distribution of loads and surgical therapy in the most advanced.³ Allopathic treatment is aimed at the eradication of *Candida albicans*, generally associated with topical antifungals (initial phases) or systemic antifungals in those more severe cases that do not respond to previous methods or in patients with severe systemic diseases. The most used are:¹⁰

- I. Nystatin, topical, in rinses (5 minutes 3 times a day) or ointment (2-4 times a day) for 14 days.
- II. Ketoconazole, topical, 2%, (3 times a day for 15 days)
- III. Miconazole: 4 times a day, after hygiene of the prosthesis, for 30 days.
- IV. Fluconazole for systemic use (50 mg / day for 14 days), very effective for stomatitis that does not respond to local treatments, or in immunosuppressed patients.
- V. Amphotericin B: Presented in tablets, creams or rinses. Of systemic use.
- VI. However, this treatment scheme has not been effective in all cases; factors such as microbial resistance to antifungals and the toxicity of the drug have led to the search for alternative treatments.

Among the phytodrugs of proven effectiveness in various conditions of the oral cavity of inflammatory origin, we find aloe vera or Aloe vera whose therapeutic action is to promote the granulation, epithelization and regeneration of tissues, which produces a stimulating effect, weakening the secondary inflammatory phenomena; its biological effect on mucosal lesions is given by the active ingredients that enter into its composition, of which the most important are the glycosides anthraquinones (eleven) Based on the biological effects of Aloe vera Linne, and the intention to contribute to the solution of the problem of the economic situation in the cure of inflammatory oral diseases, It is intended to carry out the present study which will allow us to know the efficacy of aloe as anti-inflammatory therapy in the treatment of this disease.

Scientific problem

What will be the effectiveness of aloe as an anti-inflammatory therapy in the treatment of sub-prosthesis stomatitis in patients carrying prostheses with acrylic bases in the This Matológica “Leonardo Fernández” Clinic?

Objective

To evaluate the efficacy of the topical application of aloe crystals in the treatment of stomatitis subprosthesis as an anti-inflammatory therapy in patients carrying prostheses with acrylic bases in the “Leonardo Fernández” Stomatology Clinic.

Methodological design

A quasi-experimental non-observational study of the therapeutic effect of aloe crystals was performed in the dental prosthesis consultation of the Stomatological Clinic “Leonardo Fernández”, belonging to Area III of Cienfuegos municipality, during the period from November 2015 until February 2016.

The universe consisted of 40 patients, carriers of total dysfunctional and partial removable acrylic-based prosthetics, who came to the consultation to receive treatment and begin their prosthetic rehabilitation, and in which the initial clinical examination showed inflammatory conditions of the palatal mucosa.

Inclusion criteria: patients of both sexes, carriers of total and partial

prostheses with grade I and II subprosthesis stomatitis, aged 40 years and over, who do not have a known hypersensitivity reaction to aloe vera and are willing to participate in the study.

Practical procedure

Clinical observations were made in the classification consultation for dental prosthesis, where all patients underwent a thorough examination using the basic instruments and with the help of artificial light. By the exam clinical Y he espec t o macroscopic from the injuries they were diagnosed the patients what they presented stomatitis sub-prosthesis grade I and grade II. Grade III was not considered in this study since the severity of the injuries usually requires surgical therapy. Previously they were interrogated in the consultation about the time of use of the prosthesis and the cause of the masticatory dysfunction that motivated their visit, as well as if they removed the apparatus to sleep. In the same way the prostheses were examined to check the technical condition. Those who were diagnosed with the disease were instructed to rub cube-shaped crystals of aloe in the affected areas 4 times a day for 5 to 10 minutes. They were also instructed not to drink water or any other type of food for one hour after application, not receive or combine with another treatment, maintain a careful oral hygiene and immediate removal of the prosthesis. To observe the evolution of the lesions, the patients were cited once a week where they were examined again and they were questioned about compliance with the indications given at the beginning of the same. The efficacy of the treatment was evaluated following the response criterion: cured and uncured. All patients who eliminated the signs and symptoms for which they were included were considered cured, in the second case, when they presented signs of inflammation or lower grade with the passing of days.

Ethical considerations: prior to the clinical examination, patients were explained the completion of this investigation, which would not lead to aggression or injury to their integrity, and then informed consent was requested for inclusion in the study.

Results

Table 1 shows the demographic distribution of the population studied according to sex and age. In the analysis of the results, a predominance of the represented female sex was found with 57.5%

over the male sex with 42.5%. Regarding the age groups most represented in this population of individuals aged 60 and over to 70% it was observed. When the cause of the masticatory dysfunction was related to the time of use of the prostheses (Table 2), it was found that the main reason why the patients attended the consultation was the mismatch of their prosthetic devices, representing 47.5% of the total. Regarding the time of use, it was found that the largest number of patients carried prostheses of 21 years and more of use (37.5%). Table 3 reflects the efficacy of the topical application of aloe according to the degree to which the lesions were found at the start of treatment; the most common form was grade II subprosthesis stomatitis (67.5%). E 100% of the patients healed regardless of the degree of the subprosthesis stomatitis. Table 4, referring to the healing time of the stomatitis sub-prosthesis associated with the use or not of the prosthesis during the treatment, is the difference between the number of patients who healed in only 7 days of treatment (52.5%) with respect to the rest. Table 5 reveals the manifestations referred by patients with the use of aloe on the lesions according to the time of appearance of these effects. Everybody the patients reflected refreshing sensation immediately (65%) and they manifested a sense of recollection from shape mediate.

Table 1 Demographic distribution of the population studied by sex Y groups from age

Group setarios	Female		Male		Total	
	Do not.	%	Do not.	%	Do not.	%
40-49	3	7.5	1	2.5	4	10
50-59	5	12.5	3	7.5	8	twenty
60 and more	fifteen	37.5	13	32.5	28	70
Total	2.3	57.5	17	42.5	40	100

Source: Prosthetics Clinical History

Table 2 Cause of masticatory dysfunction according to the time of use of the prosthesis

Masticatory Dysfunction	Time of use of the prosthesis (years)								Total	
	Up to 5	%	10-Jun	%	20-Nov	%	21 and more	%		
Maladjustment	0	0	5	12.5	6	fifteen	8	twenty	19	47.5
Deterioration	0	0	3	7.5	4	10	6	fifteen	13	32.5
Increased tooth loss	2	5	3	7.5	2	5	1	2.5	8	twenty
Total	2	5	eleven	27.5	12	30	fifteen	37.5	40	100

Source: Prosthetics Clinical History

Table 3 Efficacy of the treatment according to the degree of the injury

Degree of injury	Efficacy of the treatment					
	Cured		No cured		Total	
	Do not.	%	Do not.	%	Do not.	%
I	13	32.5	0	0	13	32.5
II	27	67.5	0	0	27	67.5
Total	40	100	0	0	100	100

Table 4 Distribution of the population according to the healing time of the injuries and the way of using the prostheses

How to use the prosthesis	Curing time					
	7 days		15 days		+ 21 days	
	Do not.	%	Do not.	%	Do not.	%
I do not use	fifteen	37.5	6	fifteen	0	0
Continuous use	0	0	0	0	2	5
Discontinuous use	6	fifteen	9	22.5	2	5
total	twenty-one	52.5	fifteen	37.5	4	10

Table 5 Effects produced according weather from appearance

Manifestations	Immediate (in 24 hours)		Mediata (more than 24 hours)	
	Do not.	%	Do not.	%
Irritation	0	0	0	0
Halitosis (bad breath)	0	0	0	0
Acides	0	0	0	0
Refreshing	40	100	0	0
Recollection (Disappearance of inflammation)	8	twenty	26	65

Discussion

The universe of work in this investigation consisted of 23 women and 17 men, which evidenced the predominance of the female over the male sex with 57.5% , coinciding with the results obtained by Casamayor et al.,² in the study carried out in the Hospital general teacher "Dr. Agostinho Net" from Guantánamo, between 2008 and 2009, where females represented 68.5% of the total number of patients examined, this HE It also corresponds with the what pose, classics

as, Shout , JC and Newton.⁵ Several studies made 1-5 pose what the mucosa oral is plus fine in the women what in the mens, by the what he rub off the bases prosthetic can trigger plus easily the irritation from the zones chapeables Y give place to the injury, appearing the fragility capillary in the woman to split from the third eda d , according the I consider Dechaume.² In general, women are most affected by the greater number of psychological events associated with hormonal changes that influence them such as pregnancy, menopause and also due to their greater concern for aesthetics makes them come more often to request rehabilitative treatments. With regard to age, the age group with the highest representation corresponds to individuals aged 60 and over in both sexes for 70%, similar to that proposed by Silva Contreras et al.¹ L subprosthesis stomatitis occurs more frequently as the age of the person advances, which is related to normal degenerative changes which occur with increasing age; throughout life. The individual is suffering both the action of the environment on him and the action of years, which leads to the aging of his body, the weakening of its functions and metabolic deficiencies such as: hypovitaminosis, hypoproteinemias and anemias; all this reduces their reserves and resistance to infections and traumas.

Díaz Martell et al.,¹² in their research point out that oral tissues undergo alterations of collagen and it is likely that their capacity for regeneration will decrease as the person ages, thus decreasing the area of support necessary for the prosthesis, due to the destruction alveolar and decreased salivary secretion. This is because in the third age, involutive phenomena of disintegration occur physiological and morphological that tend to compromise the functional coherence of the organism, so that the adaptive capacity of most organs and systems is gradually reduced, which is why they are more prone to get sick than younger people.⁵⁻³ Referring to the cause of masticatory dysfunction, this research found that the main reason why patients came to the consultation was the mismatch of their prostheses, representing 47.5%, which corroborates what was raised by Díaz Martell et al.¹² and Alpízar¹³ about the irritation produced by the rubbing of acrylic bases mismatched to the maxilla as one of the main responsible for the appearance of these lesions. Similar results obtained by Hidalgo SH¹⁴ in a study conducted in the city of Camagüey who state that the greatest number of oral lesions seen corresponded with technical conditions of misalignment of prosthetic devices. It also coincides with Francisco Local et al.¹⁵ in their study carried out in Miranda state, Venezuela, from November 2005 to March 2006 showing that most patients with subprosthetic stomatitis carried poorly fitted prostheses. E n this study, 37.5% were over 20 years installed the prosthesis. Authors such as Francisco Local et al.,¹⁵ state that no HE should to have plus from four years, already what the tissues suffer transformations.

The p r literature make the assumption s e goes mismatching to m edida what pass he weather, by changes in the mucosa oral Y force chewing what they exercise the tissues. Casamayor et al.,² refer that the prosthesis dental should be renov to da to the 5 years, since a from the Causes most frequent of stomatitis is the mismatched prosthesis. This shows that it is important to let the population know that misaligned prostheses due to the bone reabsorption of the alveolar ridges can irritate the oral mucosa causing alterations of different types. The clinical examination showed that grade II subprosthesis stomatitis was the most frequent in patients, coinciding with Sagué et al.¹⁶ The results obtained with the topical application of aloe showed the efficacy a t a m i e n t o i n l o r s g r a t u o I Y I I d e l a l e s i o n e s , curing all patients. The same results showed Nápoles González et al.,⁸ in his research with the application of an *Aloe* mouthwash in the treatment of

stomatitis subprosthesis in a clinical Estomatológica. Dent "The Vigía", delaciudad from Camagüey. Ahorabien, esdestacarla granac cingntiin flamtort of Aloeorbt en one way enesta investing to or ci. What ses your di or shech os p by Nápoles González et al.,⁸ as or c ian the acc inantiniflmt o rt de ta ta nta to susconen mp or t is antiontics and quio t as astocys and sterol is that s nc ap aces eb dlquarlasprostandi gl to as d n the srie II or pactiondees cough constituents so b re the cixiclo or g and n a s. For its part Santana Fernández et al.,¹⁷ refer in their study that the therapeutic action of the plant consists in promoting the granulation, epithelization and regeneration of the tissues, which produces a stimulating effect and weakens the secondary inflammatory phenomena; its biological effect on mucosal lesions is given by the active ingredients that enter into its composition, of which the most important are the glycosides anthraquinones. In relation to the healing time, it is relevant that 52.5% of the patients healed in only 7 days of treatment. This is in correspondence with the studies of Casamayo et al.,² who assure that 45.7% of their patients healed in a week with the application of aloe vera. When comparing our results with those of Plana Domínguez et al.,⁵ who used Nistatina in suspension in shape from mouthwashes, three times to the day getting the improvement to the 5 days Y proving satisfactory, already what He disappeared the injury to the 10 days; we observe the effectiveness of the medicine traditional what HE achieve in a time plus short co stopped to the treatment conventional. Abuná Flowers⁶ ensures that treatment with Aloe vera in patients with grades I and II need less time to cure, since Aloe contains components such as milk magnesium capable of improving the immune status of individuals.

Regarding the use of the prosthesis during the treatment, those patients who reported using the prosthesis continuously or most of the time coincided with the cases that took more than 21 days to heal (10%); concluding that the non-withdrawal of the appliances interferes with the healing process despite performing the applications of the aloe systematically and meet the rest of the treatment guidelines. Numerous authors⁶⁻¹⁰ state that it is essential to remove the dental prosthesis during the treatment of subprosthesis stomatitis, either by allopathic or alternative methods. The continued use of the prosthesis may favor the subprosthesis stomatitis for several reasons. On the one hand it will cause an increase in local lesions and, on the other hand, increases the time of exposure of the mucosa to the denture plate (hygienic-infectious factor). According to Menéndez Vázquez¹⁸ it is good that the patient has rest periods to avoid continuous and prolonged actions and to favor the body's reaction. During the application of the treatment there were no adverse reactions; in terms of the refreshing sensation and the effects achieved; in all the patients who manifested a sensation of recollection, it was due precisely to the anti-inflammatory and curative effect of the plant. This is comparable with the results achieved by Casamayo et al.,² with the use of aloe naturally, as well as by Naples Gonzalez et al.,⁸ who used it in the form of a mouthwash manufactured in the Medicine Production Laboratory of Camagüey. Regarding studies of irritability of aloe, this plant is classified as non-irritant by oral, topical, rectal, vaginal and ocular, and has been shown to have no appreciable toxic effects.¹⁹ In this work, aloe in the form of crystals is used, a form that is not widely used for this type of injury. It is considered that the treatment was effective, since all the patients healed and could be rehabilitated in the shortest time, so we recommend increasing their use to treat subprosthesis stomatitis.

Conclusion

The realization of this investigation allowed to conclude that p o r l a s p o p o l a c i o n e s b e n e f i c i o s q u e n o r s b r i n d a t h e s a t i t e c o m o m e d i c a l m e n t e l b a r r i o. It is an effective method, easy accessibility and more economic or ular tip a r a t h e c u r a t h e o m t e s t i s y o u

your b p t e r o s i s since it offers results u n t i e m p o m o s t b r every does not produce adverse reactions. The continuous use of the prosthesis is a factor that favors the appearance of the lesions and makes the treatment more difficult, therefore it is necessary to create new promotion and prevention programs aimed at prosthetic patients who promote self-care.

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Conflict of interest

The author declares there is no conflict of interest.

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