International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2015): 6.391

Xerostomia in Denture Patients

Aishwaryah Ravisankar[1], Dr Anand[2]

Abstract: ***Aim: To establish facts about Xerostomia in denture patients. Objective: The main purpose of this review article is to find the local and systemic factors causing. Xerostomia and methods to manage Xerostomia in complete denture patients. Background: Decrease in salivary secretion is clinically referred to as Xerostomia .There are extreme discomforts in wearing dentures with Xerostomia. Absence of saliva in the interface of denture and mucosa not only causes denture sores due to lack of lubrication it also decreases the denture retention. Reason: Xerostomia posses a major threat in denture wearing patients because it might result in sores in mouth and causes failure in retention of denture .Hence the clinicians must be aware of this condition to prevent Xerostomia in denture patients. Conclusion: Dry mouth can happen to anyone amidst there are some factors which accelerates the xerostomic conditions like increased age , gender , personnel hygiene .This condition can be overcome by following various strategies like drinking plenty of water, chewing sugarless gum, and avoiding tobacco and alcohol .There are also medications available which will help to recover the patients from the xerostomic condition.***

Keywords: denture wearers, low salivary flow, aged persons, dry mouth

1. Introduction

Saliva is a clear liquid secreted in the mouth of all the animals by the salivary glands. Everyday our body produces fifty ounces of saliva. [1] It is composed of 98% water. The rest 2% is composed of mucus, glycoproteins, enzymes, antibacterial and bacterial compounds such as secretory IgA and lyzoenzyme.[2]Xerostomia is defined as the dryness of the mouth which is due to the changes in the composition of saliva or reduced salivary flow. Patients may have increased susceptibility to periodontal diseases, opportunistic infections like oral candidiasis, chemical, mechanical and biological injuries. The lack of adequate saliva may have negative impact in denture wearing patients resulting in difficulty during mastication and swallowing of food. Reduced retention of dentures may also drive the patients to compromised emotional wellbeing and reduced quality of life.[3]

Incorporation of artificial salivary reservoir in dentures has been proposed in patients suffering from Xerostomia which makes denture wearing a successful one to affected individuals.[4] This modified dentures provides good lubrication of oral tissues in denture wearing patients. The purpose of this review is to outline for clinicians the common etiologies, clinical identification, and routine therapeutic modalities available for individuals with xerostomia.

2. Etiological Factors

Xerostomia is often related with aging process but it is mostly a problem of systemic or extrinsic origin. Saliva seems to undergo chemical changes with aging. As the amount of ptyalin decreases and mucin increases, saliva can become thick and viscous. Thus, this makes the elderly at a greater risk of developing Xerostomia. Anticholinergics, such as psychotropic agents and antihistamines and diuretics, used as medication can also be the reason for dryness of the mouth.

Salivation can be diminished by

- Chronic mouth breathing
- Radiation therapy
- Dehydration
- Auto-immune disease(e.g.:- Sjogren's disease)
- Systemic illness(e.g.:-Diabetes mellitus, Nephritis, Thyroid dysfunction)[5]

3. Signs and Symptoms

Hypo salivation is a clinical diagnosis which expresses the following symptoms,[6],[7]and[8],

- Dental caries may involve tooth surfaces that are normally spared which is normally seen in patients who have had radiotherapy involving the major salivary glands.
- Mouth soreness and oral mucositis.
- Food may stick to the teeth.
- A urge to drink water during eating.
- Dry, sore, cracked lips and angles of mouth.
- Thirst.
- Difficulty in wearing dentures, especially while swallowing or speaking and there may be generalized mucosal soreness and ulceration of the areas covered by the denture.
- Saliva will be thick and stringy.
- Bad breath and foul smelling mouth.
- Difficulty in chewing and swallowing food.
- Gum irritation and other periodontal health issues.
- Mucosa that appears dry.
- Saliva that appears thick or ropey.

Xerostomia can lead to dysgeusia, glossodynia, sialadenitis, cracking and fissuring of the oral mucosa, and halitosis. Oral dryness can affect denture retention, mastication, and swallowing. [5] Individuals with xerostomia also complain of problems with eating, speaking, swallowing, and wearing dentures.[9] Some people also complain of salivary gland enlargement or changes in taste. Lack of saliva may predispose one to oral infections, such as candidacies, and increase the risk of dental caries, because patients are at risk for dental caries, they should be referred to a dentist for preventive care.[3]

Xerostomia in Complete Denture Wearers:

A study by John Wiley and sons reveals that denture wearers are more suspected to dry mouth which leads to oral infection.[10]xerostomia can be diagnosed by various tests like measurement of the unstimulated saliva , stimulated saliva , level of salivary secretion of endocrine gland and he palatal salivary glands[4] .Denture wearers with dry mouth are more prone to fungal infections by opportunistic fungi like Candida albicans. It can also lead to mouth ulcer, bleeding gums, gingivitis,periodontitis and tooth decay especially around the gum line. The most common side effect of dry mouth is bad breath along with sore throat. It might rarely lead to diabetics ketoacidosis, burning mouth syndrome, taste disorders and dehydration.

Majority of xerostomic participants with different sets of complete dentures were dissatisfied with oral infection. Most of the studies suggest that there is significant relation with dry mouth age,female gender and smoking status. Dental adhesive noticeably improved retention and stabilization of dentures but is also necessary for the treatment of the cause and symptoms of xerostomia. It has been stated that excess of zinc from denture adhesives leads to bone marrow suppression.[11]

4. Management of Xerostomia

There are four steps in management of xerostomia.
Saliva preservation.
Saliva substitution.
Saliva stimulation.
Prevention of caries.[12]
Saliva reservoirs.

Saliva preservation
Patients suffering from xerostomia must first identify the underlying cause which is the first step in the treatment. Avoid drinking liquids which will cause dryness of mouth like alcohol, tobacco and drinks.[4]

Saliva substitution:
There are many saliva substitute products which can keep the mouth moist and more
lubricated which include tooth paste, rinses, gels and sprays.

Saliva stimulation:
Using drugs which will stimulate saliva secretion might be used. Drugs like pilocaprine or salagen, evoxac can stimulate saliva secretion.[11] Dry mouth symptom can be treated with hydration and sialagogues or with artificial saliva substitutes(e.g.:-Biotene). In patients with Sjogren's syndrome and in those who have undergone radiation therapy, pilocaprine has been used recently with good results.[5] Management of the individual patient with Xerostomia includes assessment of salivary gland function, replacement therapy, and prevention of caries and oral candidiasis. Early recognition and management of Xerostomia may prevent devastating dental disease and help to improve the quality of life.[9]

Prevention of caries:
Cavities, gingivitis, periodontal infection and fungal infection are common complications of a dry mouth. Dentures often harbor fungal infection, so they should be soaked in 1% bleach or cholorhexidine .They may require proper antifungal treatment.[12]. Products containing sodium lauryly sulphate must be avoided as they can contribute to aphthous ulcer or canker sores. Dentures should be own only during day and not during night. Xerostomic patients are recommended to floss and brush regularly.[4]

Saliva reservoirs
To help overcome the xerostomic problem, a number of techniques have been proposed for incorporating salivary reservoir which contains salivary substitutes, into dentures. Reservoir dentures are in the ready access to the reservoirs, both to the patient as well as for professional attention further helping the patients overcome the xerostomic condition.[13]

5. Conclusion

Significant association of the perception of dry mouth among denture wearers with oral symptoms and function. Xerostomia is significantly associated with increased age and smoking. Xerostomia adversely affects oral functions and overall satisfaction with dentures. Dry mouth [Xerostomia] may lead to loose dentures, irritations, sores and possible infection for denture wearers. Clinician needs to identify the possible cause for the xerostomia condition and provide the patient with appropriate treatment.

References

[1] Saliva: An emerging bio fluid for early detection of diseases ,Dr Yu-Hsiang lee ,Phdand Dr.David T. Womg, DMD, American journal of dentistry,2009 Aug; 22(4),241-248
[2] Xerostomia and hypo salivation: causes, consequences and treatment in the elderly, 2. NarhiTO, Meurman JH, Ainamo A.. Drugs Aging 1999;15:103-116.
[3] Xerostomia: Clinical Aspects and Treatment.,Cassolato SF1, Turnbull RS,gerdontology, 2003 Dec;20(2):64-77.
[4] Clinical evaluation denture adhesives used by denture wearers, Zhang, Xiao-Mei; Lv, Fang; Wang, Pin February 2015 - Volume 94 - Issue 7; medicine journal.
[5] Xerostomia: a prevalent condition in the elderly Astor FC , Hanft KL , Ciocon JO ;Ear, Nose, & Throat Journal [1999, 78(7):476-479];
[6] Oral & maxillofacial pathology, Bouquot, Brad W. Neville , Douglas D. Damm, Carl M.Allen, Jerry E. (2002). (2. ed.). Philadelphia: W.B. Saunders. pp. 398–399. ISBN 0721690033.
[7] Sialorrhea: a review of a vexing, often unrecognized sign of oropharyngeal and esophageal disease ,Boyce, HW; Bakheet, MR (February 2005). "". Journal of Clinical Gastroenterology 39 (2): 89–97. PMID 15681902.
[8] Oral and Maxillofacial Surgery, Radiology, Pathology and Oral Medicine (2nd ed.). Coulthard, Paul; et al. (2008). Edinburgh: Churchill Livingstone/Elsevier. pp. 210, 212 213. ISBN 9780443068966.

[9] Xerostomia: diagnosis and management.(PMID:8723427) Greenspan D;Department of Stomatology, University of California at San Francisco, USA. Oncology (Williston Park, N.Y.) [1996, 10(3 Supply):7-11],Type**:** Journal Article, Review.
[10] Study of xerostomia in complete denture wearers, J John Wiley & Sons, gerandontology, September 7, 2012; doi: 10.1111/jcpe.12000; 2012 A/S)
[11] Prosthodontic treatment for edentulous patients. John Hobrink, George A. Zarb, Charles L. Bolender, Steven Eckert, Rhonda Jacob, Aaron Fenton, Regina Mericske-Stern;Volume -3;pg (10-15)
[12] Dry mouth xerostomia, Wilkinson JM, Thomas J. Salinas, D.D.S; journal of advanced prosthetic research ,pg 1-6;;Feb. 10, 2014.issue-3
[13] The split denture: A new technique for artificial saliva reservoirs in mandibular dentures; AR Mendoza, MJ Tomlinson; Australian Dental Journal 2003;48:(3):190-194.