EVIDENCE BASED DENTISTRY ROUNDS

GERIATRIC DENTISTRY

GROUP 7A-2

OCT 14 2020

ROUNDS TEAM

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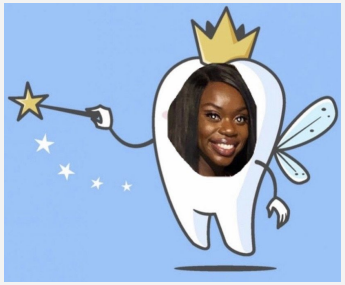


PATIENT: MYRTE

- Age: 63 years old
- Gender: Female
- Ethnicity: African American
- Medical History: No medications, Allergic to dust and household cleaners

CHIEF COMPLAINT

- “I think I’m due for some new dentures because it’s been a long time. My dentures were made here at Marquette probably 20 years ago and I’ve come back because the service here was always good.”

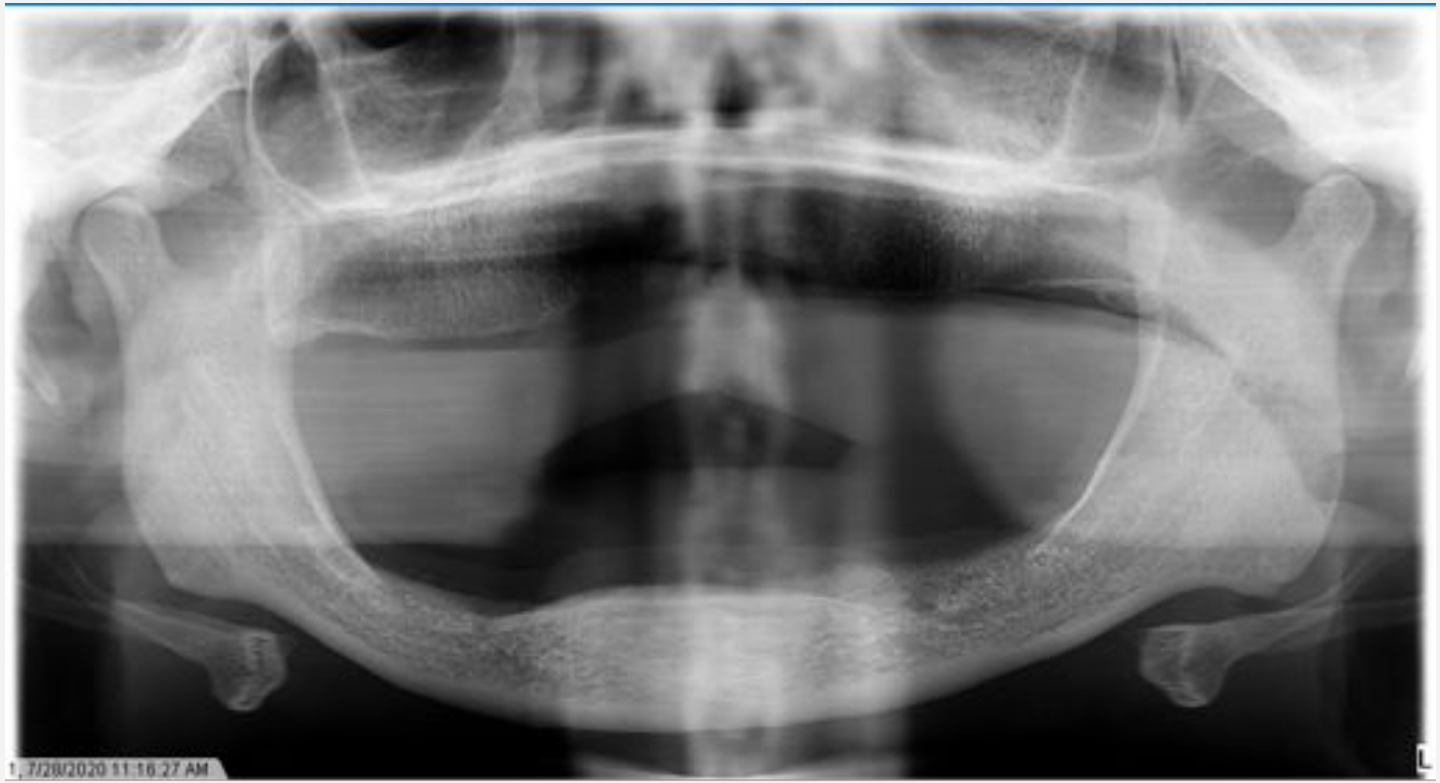
MEDICAL HISTORY

- Last visit to PCP was 2 years ago
- Conditions: Osteoarthritis, Snoring, Wears reading glasses
- Supplements: Collagen powder every once in a while
- Allergies: Dust and household cleaners (reaction: sneezing)
- Medical Consults: Advised patient to see PCP for high blood pressure readings during first 2 dental appointments (~170/100)

DENTAL HISTORY

- Dentures were made at Marquette in 2002
- Fully edentulated due to caries
- Has not had any follow up visits since denture delivery in 2002
- “Clean dentures everyday with hydrogen peroxide and toothpaste”
- Sometimes sleeps with dentures

RADIOGRAPHS



RADIOGRAPHIC FINDINGS

- Alveolar bone resorption
- Mental foramen near crest of ridge

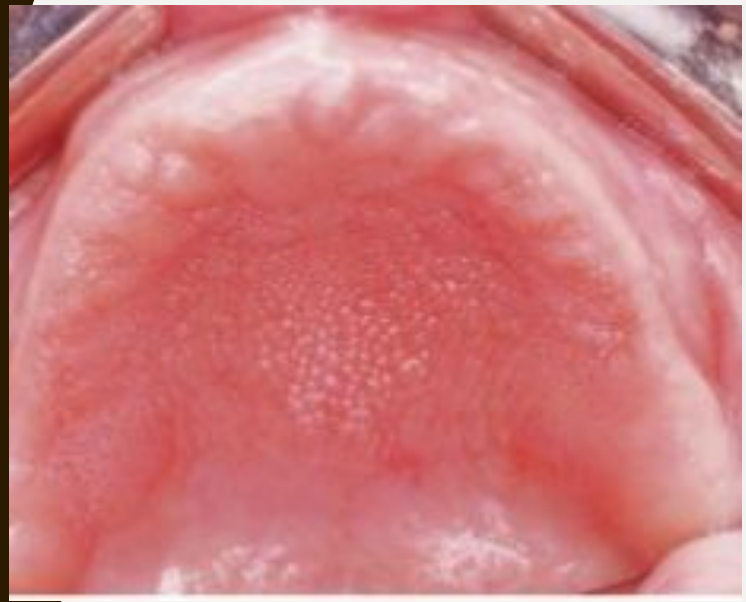
CLINICAL FINDINGS

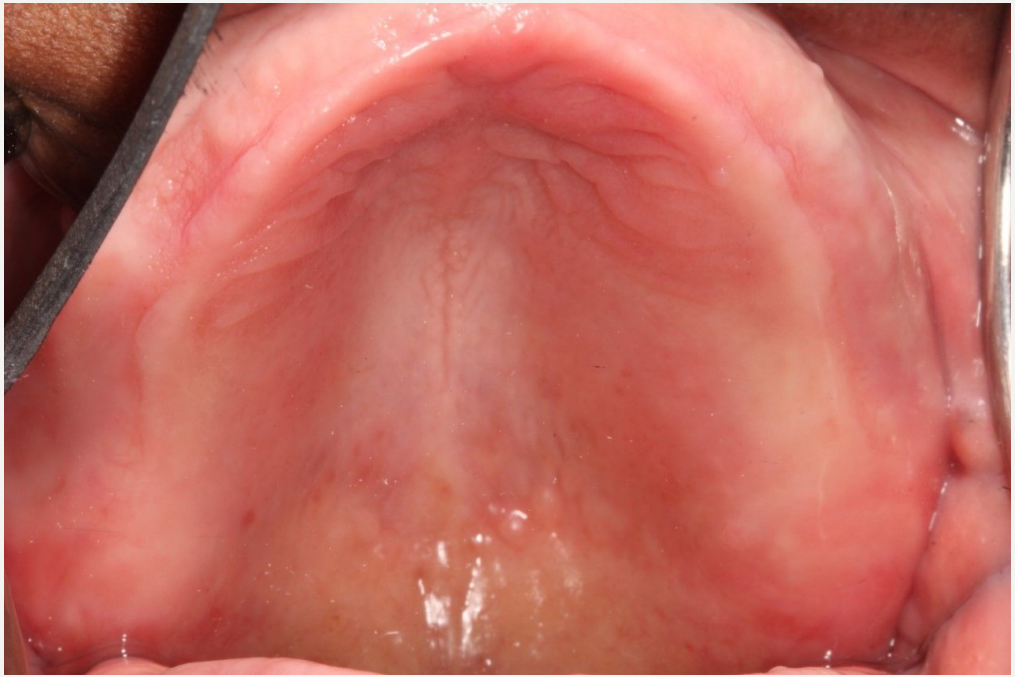
Soft tissue findings:

- Numerous, small, tightly packed papillary projections under anterior denture bearing area
- Small ulcerations on left and right anterior mandibular ridge
- 7mm x 6mm erythematous macule on left maxillary ridge (near area of canine)

CLINICAL PHOTOS

CLINICAL PHOTOS





DIAGNOSIS

- Denture Stomatitis- Papillary Hyperplasia

PROBLEM LIST

- Missing Teeth
- Defective denture
- Soft Tissue Lesion
- Home Care

What are the changes in oral mucosa in older adults?

- Protective barrier, blocks entry of pathogens and toxins
  - Thins with aging: appears smooth, shiny, loss of stippling

- Epithelial layer & Lamina Propria
  - Increased permeability and injury

- Reduced Salivary Flow
  - Degeneration of salivary glands, medications

Gonsalves WC, Wrightson AS, Henry RG. Common oral conditions in older persons. Am Fam Physician. 2008 Oct 1;78(7):845-52. PMID: 18841733

Razak PA, Richard KM, Thankachan RP, Hafiz KA, Kumar KN, Sameer KM. Geriatric oral health: a review article. J Int Oral Health. 2014 Nov-Dec;6(6):110-6. PMID: 25628498; PMCID: PMC4295446.

What Causes Denture Stomatitis/papillary hyperplasia?

- Multifactorial Cause
  - Poor denture fit
  - Poor denture hygiene
    - Wearing at night
  - Fungal infections (Candida albicans)
- Newton's Classification
  - Type I, II, and III

Image reference: da Silva, H. F., Martins Filho, P. R., & Piva, M. R. (2011). Denture-related oral mucosal lesions among farmers in a semi-arid Northeastern Region of Brazil.

Candida albicans

- Only fungal species found in the biofilm of those with denture stomatitis
- Hyphal form more predominant over the mycelial form
- Scratches, cracks, and imperfections in dentures create a good environment for Candida albicans to grow
- Effectiveness of antifungal therapies in denture stomatitis patients shows critical role of C. albicans in the etiology of denture stomatitis

References:

Barbeau, J., Séguin, J., Goulet, J. P., de Koninck, L., Avon, S. L., Lalonde, B., ... & Deslauriers, N. (2003). Reassessing the presence of Candida albicans in denture-related stomatitis. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, *95*(1), 51-59.

Gendreau, L., & Loewy, Z. G. (2011). Epidemiology and etiology of denture stomatitis. *Journal of Prosthodontics: Implant, Esthetic and Reconstructive Dentistry*, *20*(4), 251-260.

D3 PICO

- Clinical Question: What is the success of using oral antifungal medication to resolve papillary hyperplasia as compared to cleaning the dentures with a Chlorhexidine?

PICO FORMAT

P: Geriatric patients with denture stomatitis

I: Oral antifungal Medication

C: Chlorhexidine

O: Resolve papillary hyperplasia

PICO FORMATTED QUESTION

- In geriatric patients with denture stomatitis, also known as inflammatory papillary hyperplasia, are oral antifungal medications superior at resolving denture stomatitis as compared to cleaning the dentures with a Chlorhexidine?

CLINICAL BOTTOM LINE

- What is the success of using oral antifungal medication to reduce papillary hyperplasia as compared to using a chlorhexidine?

SEARCH BACKGROUND

- Date(s) of Search: October 1, 5, 7
- Database(s) Used: PubMed, Wiley Online Library, Elsevier
- Search Strategy/Keywords: Denture Stomatitis Treatment, Antifungal Denture Treatment, Denture Stomatitis Chlorhexidine

SEARCH BACKGROUND

- MESH terms used:
- Stomatitis
- Stomatitis, Denture*
- Denture, Complete
- Candidiasis, Oral / therapy
- Stomatitis, Denture / drug therapy*
- Chlorhexidine / administration & dosage

ARTICLE 1 CITATION, INTRODUCTION

- Citation: Yarborough A, Cooper L, Duqum I, Mendonça G, McGraw K, Stoner L. **Evidence Regarding the Treatment of Denture Stomatitis**. J Prosthodont. 2016 Jun;25(4):288-301
- Study Design: Observational Design
- Study Need / Purpose: To compare different methods of treatments used in resolving Denture stomatitis.

ARTICLE 1 SYNOPSIS

- **Materials**: Five databases were used by four reviewers to narrow down over 2,000 articles dealing with denture stomatitis and their treatment. Some guidelines were the studies had to include more than ten people, be less than 20 years old and not include implants in either denture arch.
- **Results**: 67 relevant articles were deemed relevant for this study as the reviewers attempted to discover the “gold standard” of treatment. It was found that out of the 36 articles that looked at anti-fungal treatment, 34 claimed that it was effective in reducing DS in a healthy patient. Sixteen articles looked at disinfectants in DS treatment and 13 of these claimed to have improved DS in patients.
- **Discussion**: Based on the review, it seems that there are no significant differences between using antifungal medications and using disinfectants for DS.
- **Limitations:** Although this study is limited because of the small sample sizes of the studies reviewed, majority of the studies did find an improvement in DS in their participants.

ARTICLE 1 SELECTION

- The article is a systematic review comparing known treatment models on denture stomatitis (DS) based on 67 relevant articles of the subjects. These treatment models included using antifungal medications (local and systemic), disinfectant/cleaners, such as chlorhexidine and more on DS. I picked this article because it seemed like a great analysis between antifungals and chlorhexidine rinse treatments.

ARTICLE 2 CITATION, INTRODUCTION

- Citation: Emami E, Kabawat M, Rompre PH, Feine JS. **Linking evidence to treatment for denture stomatitis: a meta-analysis of randomized controlled trials.** J Dent. 2014 Feb;42(2):99-106.
- Study Design: Observational Trial
- Study Need / Purpose: Comparison of treatments

ARTICLE 2 SYNOPSIS

Materials: The study compared 233 randomized clinical trials that compared antifungal medications with any alternative and/or placebo to treat denture stomatitis.

Results: The meta-analysis compared antifungal medications such as Amphotericin B with disinfectants such as, chlorhexidine gluconate and hexetidine mouthwash. When comparing amphotericin B to these treatments, no clear difference was observed.

Discussion: It can be concluded from this study that disinfectant methods could be used in adjunct or in substitution to antifungal medications. Using disinfectants such as Chlorhexidine instead of antifungals, could eliminate the chance of side effects from antifungals such as GI disturbances, liver toxicity and more.

Limitations: The results from this study should be looked at with caution as there were very limited sample sizes found with some flawed methods in some of the studies.

ARTICLE 2 SELECTION

This article is a clinical trial comparing the use of Chlorhexidine and anti-fungals in patients with denture stomatitis.
I picked this article because it relates to the options we are trying to pick for our patient.

ARTICLE 3 CITATION, INTRODUCTION

- Citation: Kulak Y, Arikan A, Delibalta N. **Comparison of three different treatment methods for generalized denture stomatitis.** J Prosthet Dent. 1994 Sep;72(3):283-8.
- Study Design: Clinical Trial
- Study Need / Purpose: Comparison of Treatment

ARTICLE 3 SYNOPSIS

- **Materials**: The trial took 45 patients with denture stomatitis and divided them into three groups that were monitored for two weeks. The first group was given fluconazole tablets for treatment, the second group was given fluconazole and applied chlorhexidine to the inner surface of the denture twice a day and the last group was given new dentures.
- **Results**: Following the two-week session, it was found that 87% of the first two groups had a good response to treatment. With more people from the 2nd group being cured, as opposed to having improvements, than the 1st group. Only 33% of the third group showed any improvement.The results from this article reveal that though fluconazole is effective in reducing DS in patients, reinfection can occur shortly after treatment has ended. This is likely due to the tissue surface of the denture harboring Candida.
- **Discussion**: When Chlorhexidine is used on the inner surface of the dentures in conjunction to taking fluconazole tablets then there was a greater decrease in bacteria colonies found on the denture surface. Thus, in order to have a more permanent result, Candida must be removed from the oral mucosa and the denture base itself. This explains why the treatment using Fluconazole in conjunction with chlorhexidine was more effective in curing Denture Stomatitis than the treatment of fluconazole alone.
- **Limitations**: A limitation of this article is it only analyzes 45 people.

ARTICLE 3 SELECTION

This article is a clinical trial comparing the use of Chlorhexidine and anti-fungals in patients with denture stomatitis.

LEVELS OF EVIDENCE

Levels of Evidence: (For Therapy/Prevention, Etiology/Harm)

Draft

See http://www.cebm.net/index.aspx?o=1025

☒ **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)

☒ **1b** – Individual RCT

☐ **2a** – Systematic Review of Cohort Studies

☐ **2b** – Individual Cohort Study

☐ **3** – Cross-sectional Studies, Ecologic Studies, "Outcomes" Research

☐ **4a** – Systematic Review of Case Control Studies

☐ **4b** – Individual Case Control Study

☐ **5** – Case Series, Case Reports

☐ **6** – Expert Opinion without explicit critical appraisal, Narrative Review

☐ **7** – Animal Research

☐ **8** – In Vitro Research

STRENGTH OF RECOMMENDATION TAXONOMY (SORT)

☐	**A** – Consistent, good quality patient oriented evidence
✖	**B** – Inconsistent or limited quality patient oriented evidence
☐	**C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening

CONCLUSIONS: D3

- Based on the evidence found in the three articles, there was no indication that either treatment was better than the other. I would advise the patient to use a combination of antifungal medication and chlorhexidine to treat the Denture Stomatitis.

- I make this recommendation because the combined use of both seems to create a more permanent solution to the denture stomatitis as opposed to Chlorhexidine alone. The antifungal works well to treat the Candida in the body while the chlorhexidine helps removes the fungus from the denture itself. Additionally, I would recommend that the patient remembers to remove the dentures at night and clean them daily.

CONCLUSIONS: D4

Based on your Evbu's bottom line recommendations, I will advise my patient to:

- Take an oral antifungal medication
- Use Chlorhexidine
- Clean dentures daily
- Remove dentures at night

CONCLUSIONS: D4

I will help my patient by

- Giving her verbal and written instructions for daily care
- Doing weekly check-ins during her appointments
- Praising good habits

DISCUSSION QUESTIONS

- When a patient is put on chlorhexidine rinse or an antifungal, how long does it take for the patient gingival tissue to heal from the denture stomatitis?

- What are the causes of papillary hyperplasia other than denture stomatitis?

- Will prolonged use of either the antifungal medication or chlorhexidine rinse cause shifts in the oral microbial flora that might favor the growth of opportunistic species?

DISCUSSION QUESTIONS

Does the presence of xerostomia affect the decision on how to treat denture stomatitis?

Can patients continue to wear their dentures while they are using antifungal medications?

How prevalent is papillary hyperplasia among younger populations? Is the risk significantly less due to the changes in oral mucosa?

THANK YOU