Adult Oral Health Case- Angular Cheilitis

Moderator Version

**Learning objectives/ oral health core clinical domains and competencies:**

1. Identify risk factors associated with Angular Cheilitis (Domain: Risk Assessment)
2. Identify, diagnose and manage the treatment of Angular Cheilitis (AC) (Domains addressed include: Oral Health Evaluation, Preventive Intervention, Communication and Education, Interprofessional Collaborative Practice)
3. List the non-inflammatory and inflammatory etiologies for Angular Cheilitis (Domain: Oral Health Evaluation)
4. Discuss oral/systemic manifestations of Angular Cheilitis (Domain: Risk assessment)

**Target Population:** Older adults

**Case Presentation:**

Mr. Jones is a 75 year old edentulous male, wearing dentures, who presents to your Family Medicine office with complaints of “mouth sores” for the last six months. The sores, located at the corners of his mouth, are described as painful, irritated and with a burning sensation. Pain is most severe when he opens his mouth wide. He saw the nurse practitioner a month ago who treated him with a “cream” applied twice a day, but the sores have not healed. Mr. Jones is currently undergoing treatment for a recent diagnosis of colon cancer. He has not recently seen a dentist as he only sees a dentist when he feels he needs new dentures.

**PMHx:** HTN, GERD and recent diagnosis of colon cancer

**Medications**: Protonix 40mg daily, HCTZ 12.5mg daily, and chemotherapy for colon cancer

**Social history:** Lives alone in an assisted living facility. He does not drink alcohol. He smokes 2 ppk/day for 30 years.

**ROS:** Negative except noted in HPI and fatigue and weight loss. Denies numbness and tingling of the hands and feet.

**Physical exam:**

Gen: pale, thin elderly male, no acute distress

HEENOT: Benign, except he is wearing a full set of poorly fitting dentures. Saliva pools at the corners of his mouth. Dentures are poorly cleaned. There are crusted red fissures at both corners of his mouth. Mucosa is pale and dry. Tongue has patchy baldness with loss of lingual papillae.



**Oral Assessment:**

* What are the pertinent medical and oral issues identified in the history?
* List risk factors and findings on oral assessment.
* Which medical diagnoses can impact oral health?
* Which oral diagnoses impact overall medical health?
* List patient behaviors that can potentially improve patient’s health.
* List behaviors that can negatively impact this patient’s health.

Pertinent information from the history:

* Patient is edentulous
* Patient wears dentures
* Patient is unresponsive to the prescribed “cream”
* He is being treated for cancer. He may have an underlying condition such as a vitamin deficiency or anemia
* His medication may be a source of his symptoms
* He smokes, which may predispose him to having angular cheilitis

**Oral Risk Assessment:**

* Elderly
* Wears dentures
* Smoker
* Undergoing treatment for colon cancer

**Oral Assessment:**

* Crusted fissures at the corners of his mouth
* Poorly fitting dentures resulting in pooling of saliva
* Pale mucosa and patchy baldness of tongue may indicate anemia.

**Questions:**

1. What is the patient’s main concern?
   1. Poorly healed painful mouth lesions.
2. What risk factors identified are associated with angular cheilitis?
   1. Males, wears dentures, immunocompromised, dry mouth.
   2. His symptoms of burning mouth may indicate a yeast infection.
3. How is the diagnosis confirmed?
   1. Clinical diagnosis after a through history and physical exam.
   2. Additional evaluation is needed if initial therapy is unsuccessful.
      1. Exclude drug history (antimicrobials, corticosteroids), vitamin deficiency, immune deficiency, history of diabetes mellitus.
      2. Direct examination of a smear of the lesion, denture, or tongue is applied to a glass slide with application of KOH. Fungal hyphae is observed.
      3. Fungal Culture of the lesion on Sabauraud’s agar for and bacterial culture to exclude Staph aureus.
4. What are the non-inflammatory and inflammatory conditions associated with Angular Cheilitis? Non-inflammatory conditions may include: mechanical (brushing trauma), poorly-fitting dentures, xerostomia, nutritional deficiency (B12, folate, Riboflavin). Inflammatory conditions include eczema and secondary bacterial infection with Staph Aureus.
5. What are the Oral- systemic linkage associated with Angular Cheilitis? These include anemia, diabetes, immunocompromised states such as HIV, and immunotherapy. These conditions should be ruled out especially for cases that are non-responsive to treatment.

**Management & Outcome:**

Mr. Jones initially received a topical antifungal cream initially, but did not improve. At the follow up visit, the “topical cream” was determined to be an antifungal cream. His exam findings revealed unresolved mouth fissures with crusting, and poorly fitting dentures.

A diagnostic workup was begun to assess for underlying cause. The work up included the following:

Diagnostic Tests: Usually performed after treatment failure:

CBC: WBC 8.O, Hb: is 10, fungal culture of oral mucosa below dentures which reveal Candia Albicans. Bacterial culture of nares showed Staph Aureus. Serum iron is was low at 77, ferritin, and iron satuation was also low. TIBC is elevated, B12 normal

**What treatment approaches should be considered?**

1. Identifying and treating the underlying cause.
   1. If infectious: Prescribe topical miconazole with antibacterial (topical mupirocin or polymyxin-containing preparation) for 7-14 days or oral fluconazole 200mg for 1 day (100mg for 13 additional days for immunocompromised states).
   2. For patient with teeth, advise to change tooth brush to prevent contamination.
   3. For denture wearer, ½ Teaspoon of topical Miconazole gel (20mg/cc) applied to the dentures four times daily.
   4. Non-infectious etiology: Dentures should be removed and stored in Chlorohexidine. For patients older than 60 years, chewing gum containing Xylitol or chlorhexidine acetate/xylitol may reduce angular cheilitis. Dentures that are ill-fitting should be corrected. Nutritional deficiencies should be corrected.
2. Laboratory evaluation if non-responsive to topical antifungal and anti-bacterial should include CBC, fungal and bacterial cultures of oral mucosa and nares respectively if initial therapies with antifungal creams are unsuccessful.
3. How can the primary care provider collaborate with the interdisciplinary team caring for this patient?
   1. Clinician should discuss the case with the NP regarding risk factors, diagnosis and treatment, effect of nutrition on oral health and prevention such as smoking cessation. Recommend regular denture evaluation by the dentist. If diabetic, improving diabetic control is advised through nutrition and diabetic management education.

**Case Conclusion:**

Mr. Jones was treated empirically with topical miconazole and mupirocin daily for 14 days. His mouth lesions resolved within 10 days and did not recur. He was also advised supplemental iron sulfate daily for his anemia.

**Discussion:**

Angular cheilitis may be treated empirically with combination antibacterial and a topical antifungal cream. When the patient is unresponsive, consider other possible causes. In this case, our patient was immunocompromised and had iron deficiency anemia. A bacterial culture was obtained from his nares as well as the mouth lesion. Culture results showed Candida Albicans and Staph Aureus. A CBC was obtained that showed a low hemoglobin of 10, and serum iron of 77. He was advised iron therapy daily and to f/u with his oncologist. He was also advised to keep his dentures cleaned by brushing and soaking them in chlorohexidine.

**Key Points:**

1. Angular Cheilitis is inflammation of the corners of the mouth characterized by painful fissures, redness, crusting and scaling. The cause is multifactorial, either infectious or non-infectious etiology including mechanical, fungal, bacterial or nutritional deficiency.
2. Common Risk factors include: Elderly males, denture wearers, immunocomprise.
3. Treatment involves identifying and managing the underlying cause.
4. Further lab testing may be needed for patients who don’t respond initially to antifungal treatment

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**References**

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