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**Background**
- Interleukin 17 (IL-17): well-recognized cytokine with a decisive role in immunology, also implicated as a “driver” of multiple signals in the pathogenesis of several autoimmune diseases
- Recent findings → IL-17: protective role against extracellular bacteria and fungi
- Candida Albicans, the species blamed for the most common fungal infection in humans, is the target of IL-17 immunity
- New systemic biologic agents targeting IL-17 have been approved for the management of individuals suffering from psoriasis and other autoimmune conditions
  - Examples: secukinumab, ixekizumab, brodalumab & bimekizumab
- Clinical studies → these medications place patients at high risk of developing candidiasis

**Objectives**
To present two cases of oral candidiasis (OC) related to secukinumab use for the management of psoriasis & establish the appropriate diagnostic work-up and treatment that those individuals should receive

**Case Reports**

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
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<td>22 year-old female</td>
<td>66 year-old female</td>
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**Clinical examination**

**Case 1**
- Partially whirled-off hypertrophic white lesions on erythematous base, leaving hemorrhagic surface when detached, located on the dorsal tongue (Fig. 1a), hard palate (Fig. 1b), and left tuberosity (Fig. 1c)

**Provisional diagnosis**
Pseudomembranous candidiasis vs. secondary syphilis (rule out leukoplakia for tongue lesion)

**Case 2**
- Dryness & erythema at the labial commissures, erythematous glossy dorsal tongue (Fig. 2a), and erythematous patches on the hard palate (Fig. 2b) & buccal mucosa (Fig. 2c)

**Provisional diagnosis**
Erythematous candidiasis

**Diagnostic work-up**
- Biopsy / histopathologic examination from dorsal surface of tongue (patient 1) & cytologic smear (both patients)
- Histopathological examination (H&E)
  - Parakeratinosis, neutrophilic microabscesses, thickened spinous layer & acute and chronic inflammation of the connective tissue (patient 1)
- Histopathologic examination (PAS)
  - Candidal hyphae localized in the parakeratin layer (patient 1)
- Cytology (PAS)
  - Fungal hyphae & yeast forms of Candida albicans

**Final diagnosis**
OC related to IL-17A inhibitor

**Management**
- Antifungal therapy
  - Discontinuation of anti-psoriatic medication was not suggested

**Follow-up**
- Patient 1: asymptomatic & significant regression of the white patches without any anti- psoriatic-base treatment
- Patient 2: contacted 2 weeks later reporting absence of symptoms & complete resolution of the lesions

**Discussion**
- Several disorders characterized by inborn or acquired dysregulation of IL-17 are associated with development of candidiasis
- Examples: mutations in STAT3 (lish syndrome), IL-23 & ROR-γt genes (implicated in “type 17 immunity”) have been associated with chronic mucocutaneous candidiasis
- Review of the English language literature about OC development in patients under treatment with IL-17 inhibitors
  - Mainly clinical trials investigating the adverse effects of these medications
  - A previous publication (Langley et al., 2014) highlighted the possibility that secukinumab-related candidiasis is a dose-related adverse event
  - Candidal infection may show a predilection for the oral cavity
  - Oral candidal infection: mild to moderate severity
  - 1st-line treatment: topical antifungal therapy, prophylactic treatment in immunosuppressed individuals
  - The majority of infections: self-limited or resolved after treatment with topical antifungal therapy → not considered as a reason to discontinue the medication
  - Few reported cases with possible extension to the oropharynx that led to discontinuation of their medication
- Routine evaluation of all-trans retinoic acid (ATRA) – an active metabolite of vitamin A with fungitoxic role – levels in serum could be also considered

**Conclusions**
- OC should be considered as part of differential diagnosis of diffuse white and red lesions in patients under treatment with IL-17 inhibitors
- Commonly mild to moderate severity → biologic agents should not be altered or interrupted
- Topical antifungal prophylactic therapy may be helpful, especially for individuals with other predisposing factors, such as medication-induced immunosuppression