**NOMAAA Garciaparra**

**Key Points:**
- Noma is an oral gangrene most common in children in sub-Saharan Africa; it is most commonly preceded by ANUG (acute necrotizing ulcerative gingivitis)
- Secondary syphilis may be associated with a sore throat; however, oral chancres should be painless
- Up to 50% of patients with advanced HIV disease develop neutropenia, which may be due to medications, infiltrative bone marrow processes, viral infection, or HIV itself

1. **What is noma?**
   - For one thing, it’s called noma (no capitals), and it’s not North of Market
   - “Cancrum oris (noma) is a devastating infectious disease which destroys the soft and hard tissues of the oral and para-oral structures. The dehumanizing oro-facial gangrenous lesion affects predominantly children ages 2 to 16 years, particularly in sub-Saharan Africa…. The risk factors are poverty, malnutrition, poor oral hygiene, residential proximity to livestock in unsanitary environments, and infectious diseases, particularly measles and those due to the herpesviridae. Acute necrotizing gingivitis (ANG) and oral herpetic ulcers are considered the antecedent lesions, and ongoing studies suggest that the rapid progression of these precursor lesions to noma requires infection by a consortium of micro-organisms, with Fusobacterium necrophorum (Fn) and Prevotella intermedia (Pi) as the suspected key players…. Without appropriate treatment, the mortality rate from noma is 70-90%. Survivors suffer the two-fold afflictions of oro-facial mutilation and functional impairment, which require a time-consuming, financially prohibitive surgical reconstruction.” From Enwonwu et. al.
   - May also occur in immunosuppressed pts (diabetes, post-chemo)
   - The WHO calls it “a worldwide scourge” with a worldwide incidence of 140,000/yr and prevalence of 770,000
   - Treatment is antibiotics plus, in many cases, surgical resection

2. **OK, then what is ANG? Or is it ANUG?**
   - Acute necrotizing (ulcerative) gingivitis
   - Criteria for diagnosis: painful, bleeding gums with irreversible destruction of the interdental papillae (cratering) and marginal gingival; other distinguishing characteristics of ANUG included presence of a pseudomembrane, odor, a strange taste in the mouth, and hypersalivation
   - ANUG is the most common predisposing factor for noma

3. **Can syphilis cause a sore throat or painful oral lesions?**
   - Yes, secondary syphilis can cause a sore throat in addition to a myriad of other non-specific systemic symptoms such as fever, headache, malaise, anorexia, myalgias, and weight loss. These symptoms are thought to be due to dissemination of the treponeme. Oral lesions/chancres, however, should be painless.
4. **What’s the connection between neutropenia and HIV?**

- The incidence of neutropenia varies from 5 to 10 percent in the early, asymptomatic stages of infection to as many as 50 to 70 percent of patients with advanced disease (when neutropenia is defined as ANC < 1500).
- Etiologies include medications (especially AZT, TMP/SMX, ganciclovir, and hydroxyurea), infiltrative disorders of the bone marrow (MAC, TB, histoplasmosis, other disseminated fungi, lymphoma), viral infections (EBV, parvovirus, CMV). Also HIV itself may cause neutropenia through depressed levels of GCSF.
- Some studies suggest increased mortality in these patients, but no clear disease patterns seen.
- No proven mortality benefit to treatment with GCSF (per CDC, “evidence of efficacy, but not routinely recommended), so used only for patients with “severe” neutropenia, indwelling lines, history of serious infections, or ongoing bacterial infection.


