Herpes Simplex Virus

Infects ½ the world population
Acute infection → **Chronic active gastritis**, More prevalent in **antrum**
Often erosions and germinal center formation
**H. pylori** → slender curved rods
**H. heilmannii** → milder inflammation, corkscrew appearance
Both stain with Giemsa, Silver, and Immunohistochemical stain

Candida

Most common infection of the **esophagus**
Presents with **dysphagia/odynophagia**
Endoscopically appear as **white plaques** and ulceration
**Neutrophilic inflammation**, but if less if immunocompromised
→ highlighted by PAS-D and GMS stains
→ See mix of budding yeast and **pseudohyphae**

Helicobacter

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Herpes Simplex Virus

**Ulceration** with variable inflammation, predominantly acute
Viral inclusions at edges of ulcers in epithelial cells
**3M’s** → **Moulding**, (chromatin) **Margination, Multinucleation**
#2 most common cause of infectious esophagitis
Self-limited in healthy patients; may cause esophageal perforation or disseminate in immunocompromised patients

Cytomegalovirus

Most common in **immunocompromised**
Symptoms vary by site:
**Esophagus** → dysphagia, odynophagia
**Stomach/intestines** → Diarrhea, bloody or watery, pain
**Ulceration, mixed inflammatory** infiltrate with neutrophils
if severely immunocompromised, less inflammation
**Viral inclusions**, preferentially in **mesenchymal cells**:
**Nuclear** → “Owl’s eye” (Cowdry A), pink, nucleolus-like
**Cytoplasmic** → granular and pink to purple, hof-like

Be sure to evaluate for in refractory IBD (Do IHC stain)!!!!!!
**Schistosomiasis**
Any species of schisto can be found in the gut
Endemic to Africa, Asia and parts of the Americas infected by contaminated water.
See chronic inflammation and granulomas around ova
Worms often have no reaction, found in veins or liver

**Enterobius Vermicularis**
“Pinworm”
Most commonly seen in **appendix**, often incidentally
Thick cuticle on adult worm
characteristic lateral spikes (ala)
Easily visible internal organs
Even invasive worms cause minimal inflammation

**Strongyloides**
Nematode with worldwide tropical distribution
Worse in immunocompromised patients
Can be asymptomatic and harbor for >30 yrs
When symptomatic, diarrhea, pain, bleeding
See inflammation with neutrophils and eosinophils often, may resemble IBD
Adult worms, larvae, and eggs all found in crypts

**Entamoeba Histolytica**
World-wide, fecal-oral contaminant
Can be asymptomatic, cause diarrhea, or severe “invasive” disease (including spread to liver)
Deep “flask shaped” ulcers with neutrophils
If chronic features of chronicity!
Lots of amorphous eosinophilic debris
Amoebas have foamy cytoplasm and round, eccentric, small, red nucleus, ingested RBCs

**Intestinal Spirochetosis**
Fuzzy, fringed layer of organisms at surface
Stain with WS or spirochete stain
Usually no associated inflammatory infiltrate
Diarrhea most common symptom, but unclear if actually causative or coincidental
Classical association with HIV also being questioned