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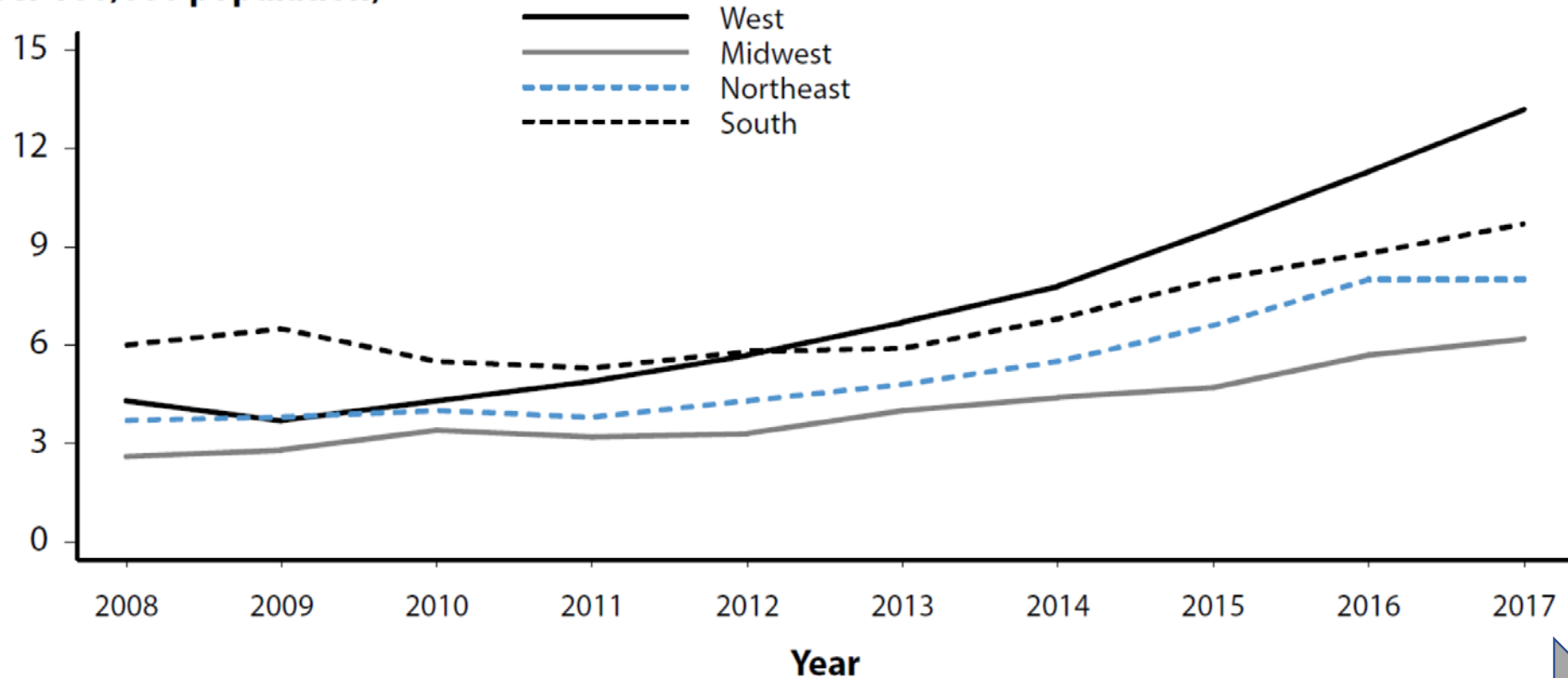
Sex, Lies, and Gastrointestinal Tract Biopsies

Lysandra Voltaggio, MD

Aamir Ali, MD

Primary and Secondary Syphilis — Rates of Reported Cases by Region, United States, 2008–2017

Rate (per 100,000 population)



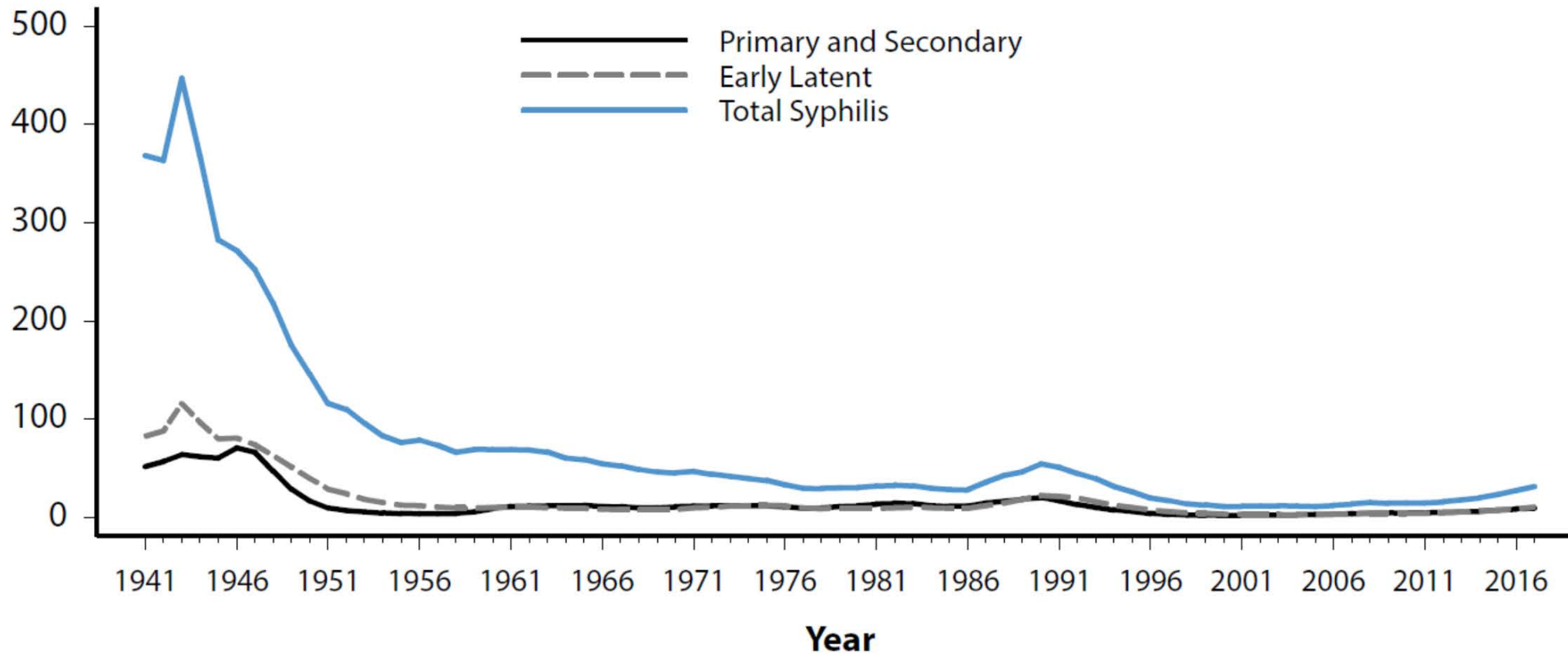
72.7%

Objectives

- Summarize **epidemiologic trends** in sexually transmitted infections (STIs)
- Discuss **clinical presentation** of sexually transmitted proctitis
- Discuss **histologic features** of sexually transmitted proctitis, including those distinguishing them from IBD
- Recognize clinical and pathology overlap with IBD and neoplasia

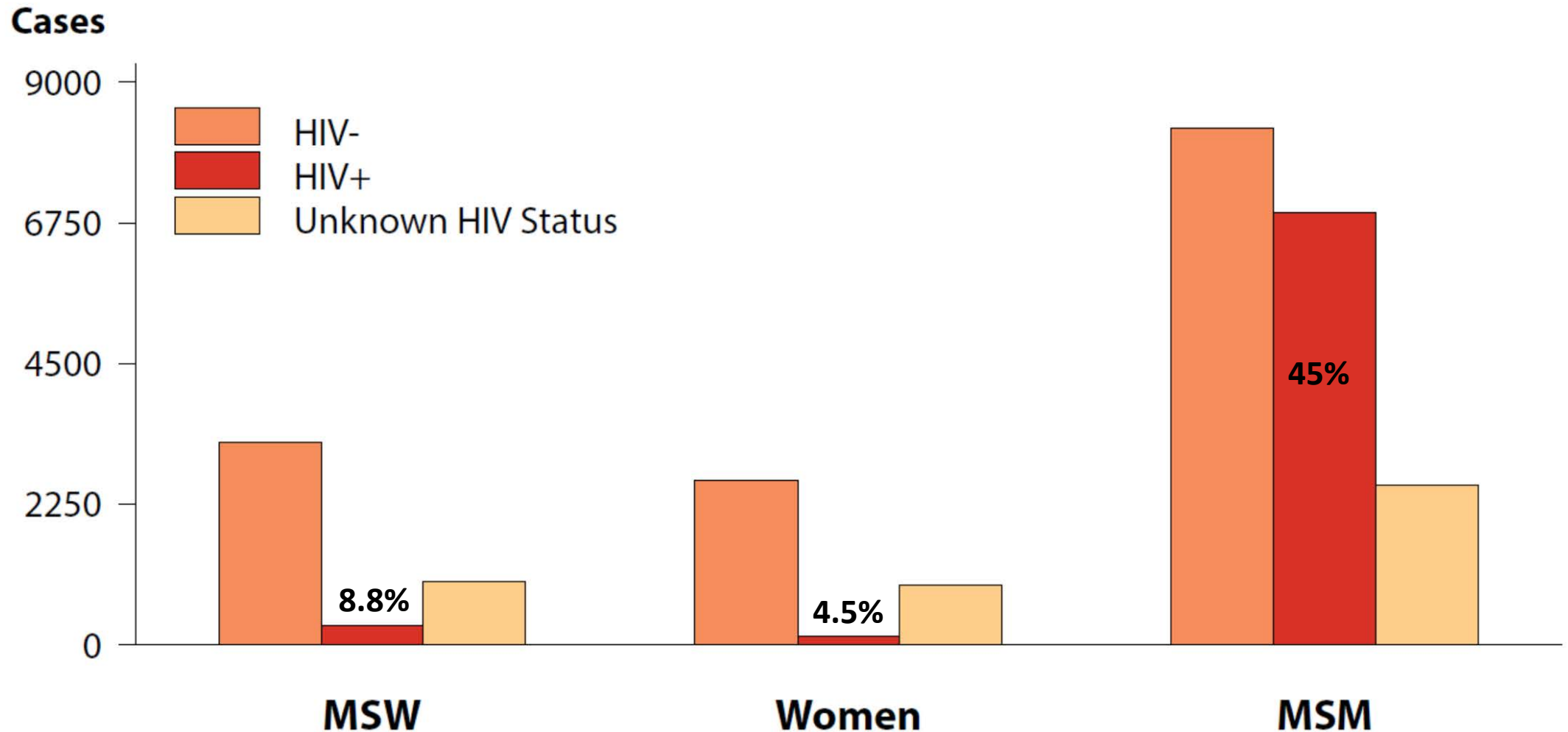
Syphilis — Rates of Reported Cases by Stage of Infection, United States, 1941–2017

Rate (per 100,000 population)



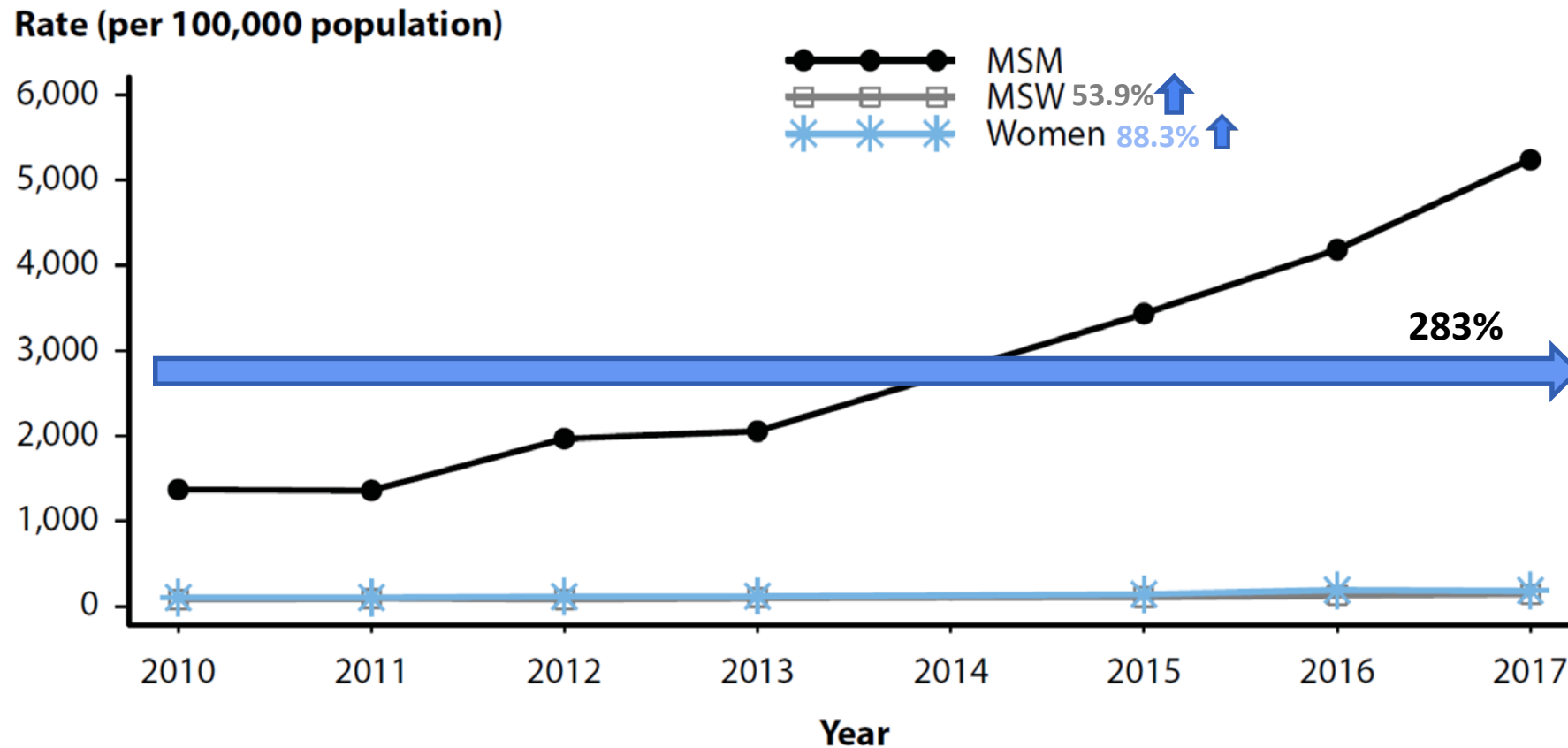
NOTE: Data collection for syphilis began in 1941; however, syphilis became nationally notifiable in 1944. Refer to the National Notifiable Disease Surveillance System (NNDSS) website for more information: <https://wwwn.cdc.gov/nndss/conditions/syphilis/>.

Primary and Secondary Syphilis — Reported Cases by Sex, Sexual Behavior, and HIV Status, United States, 2017



ACRONYMS: MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

Gonorrhea — Estimated* Rates of Reported Gonorrhea Cases by MSM, MSW, and Women, STD Surveillance Network (SSuN)[†], 2010–2017



* Estimates based on interviews among a random sample of reported cases of gonorrhea (N=17,765); cases weighted for analysis.

[†] Sites include Baltimore, Philadelphia, New York City, Washington State, San Francisco, and California (excluding San Francisco).

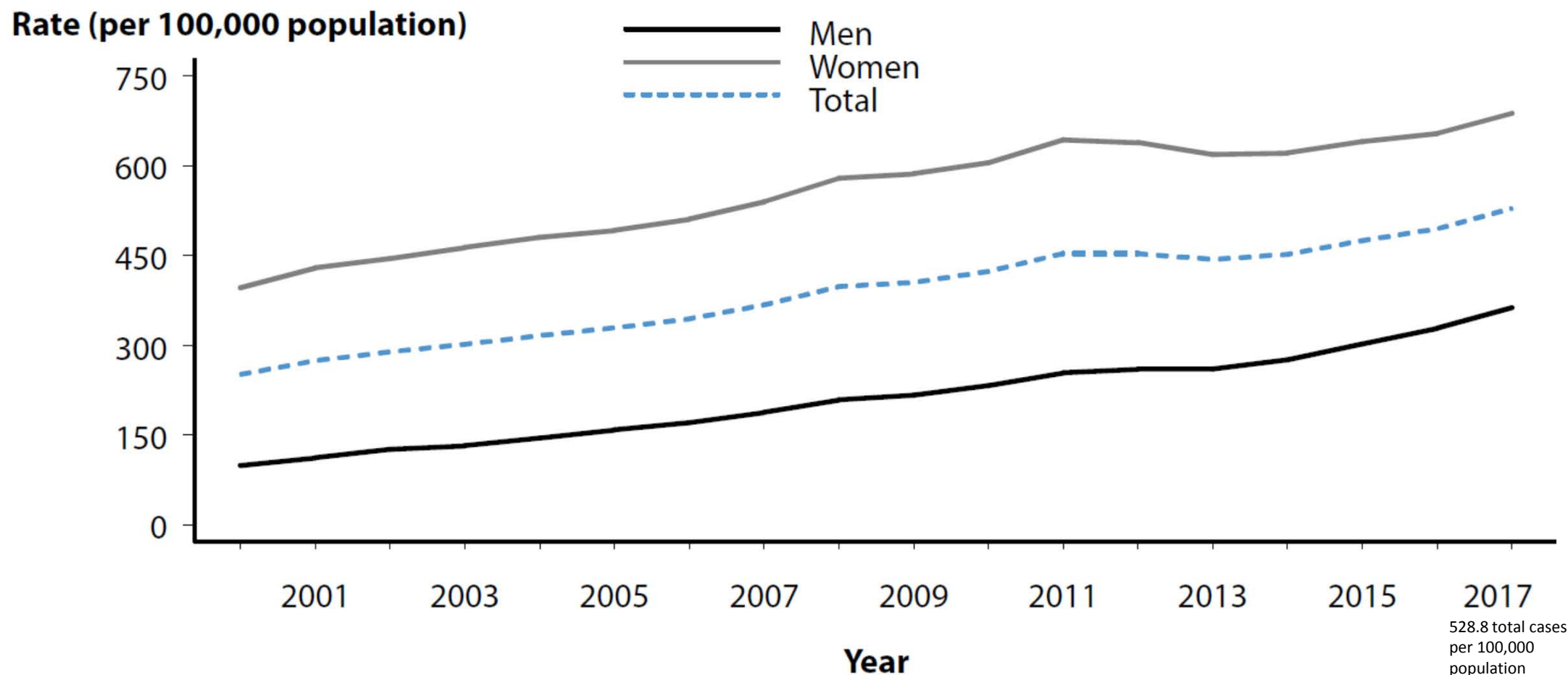
NOTE: Data not available for 2014; 2013–2015 trend interpolated; trends lines overlap for MSW and women in this figure. See section A2.2 in the Appendix for SSuN methods.

ADAPTED FROM: Stenger M, Pathela P, Anschuetz G, et al. Increases in the rate of *Neisseria gonorrhoeae* among gay, bisexual and other men who have sex with men (MSM) — findings from the STD Surveillance Network 2010–2015. Sex Transm Dis 2017; 44(7): 393–397.

ACRONYMS: MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.



Chlamydia — Rates of Reported Cases by Sex, United States, 2000–2017



NOTE: Data collection for chlamydia began in 1984 and chlamydia was made nationally notifiable in 1995; however, chlamydia was not reportable in all 50 states and the District of Columbia until 2000. Refer to the National Notifiable Disease Surveillance System (NNDSS) website for more information: <https://wwwn.cdc.gov/nndss/conditions/chlamydia-trachomatis-infection/>.



Contributing Factors

- Patient information gaps
- Lack of testing
- Men who seek partners online

Valdes et al. Knowledge, behaviors, and attitudes of HIV-infected men about syphilis. *Med Mal Infect.* 2017 Nov;47(7):470-476.

Dean et al. Sexually Transmitted Disease Testing of Human Immunodeficiency Virus-Infected Men Who Have Sex With Men: Room for Improvement. *Sex Transm Dis.* 2017 Nov;44(11):678-684.

Allen et al. Mobile Phone and Internet Use Mostly for Sex-Seeking and Associations With Sexually Transmitted Infections and Sample Characteristics Among Black/African American and Hispanic/Latino Men Who Have Sex With Men in 3 US Cities. *Sex Transm Dis.* 2017 May;44(5):284-289.

DeSilva. A case-control study evaluating the role of internet meet-up sites and mobile telephone applications in influencing a syphilis outbreak: Multnomah County, Oregon, USA 2014. *Sex Transm Infect.* 2016 Aug;92(5):353-8.

Contributing Factors

- Changing perceptions of HIV infection
- Introduction of PrEP

Kojima, N., Davey, D. J. & Klausner, J. D. Pre-exposure prophylaxis for human immunodeficiency virus and sexually transmitted infection acquisition among men who have sex with men: AIDS 1 (2016).

Barreiro P. Hot News: Sexually Transmitted Infections on the Rise in PrEP Users. AIDS Rev. 2018 Jan-Mar;20(1):71.

Contributing Factors

- Not emphasized during medical training
 - 37.6% of medical students think they are adequately trained to address patients' sexual concerns
- 44% of U.S. med schools lack sexual health curricula
- Medical student discomfort when taking sexual history
 - Young
 - Older adults (>75 yrs)

Wittenberg and Gerber. Recommendations for improving sexual health curricula in medical schools: results from a two-arm study collecting data from patients and medical students. J Sex Med. 2009 Feb;6(2):362-8.

Malhotra et al. Medical school sexual health curriculum and training in the United States. J Natl Med Assoc. 2008 Sep;100(9):1097-106.

Hayes et al. Assessment of Medical Student and Resident/Fellow Knowledge, Comfort, and Training With Sexual History Taking in LGBTQ Patients. Fam Med. 2015 May;47(5):383-7.

STI Proctitis

- Multiple outbreaks reported in Europe and United States
 - Increased incidence likely parallels broader increase in STI incidence
- MSM are disproportionately affected
 - 23% MSM had rectal gonorrhea by NAAT¹
- Variable endoscopic or histologic features limited to sigmoid/rectum
 - Propensity to be misdiagnosed as IBD is documented ^{2,3}
 - May mimic neoplasia in a subset of cases
 - Sexual history should be obtained routinely
- Proctitis may promote HIV transmission

1. Turner AN, Reese PC, Ervin M, et al. HIV, rectal chlamydia, and rectal gonorrhea in men who have sex with men attending a sexually transmitted disease clinic in a midwestern US city. *Sex Transm Dis.* 2013;40:433–438.

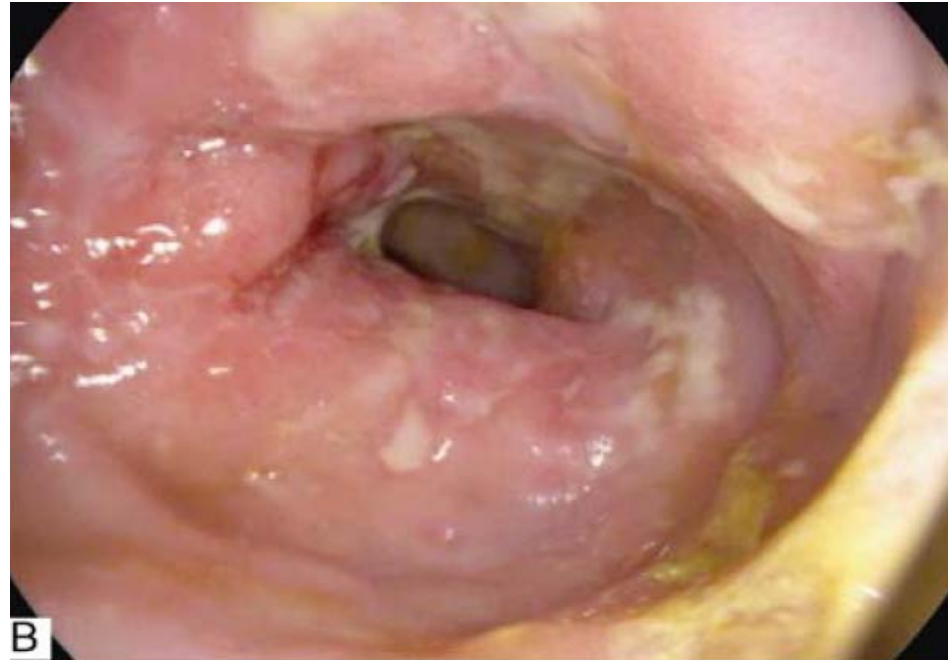
2. Soni, S., Srirajaskanthan, R., Lucas, S.B., Alexander, S., Wong, T., and White, J.A. Lymphogranuloma venereum proctitis masquerading as inflammatory bowel disease in 12 homosexual men. *Aliment Pharmacol Ther.* 2010; 32: 59–65

3. Levy, Rahav. Delayed diagnosis of colorectal sexually transmitted diseases due to their resemblance to inflammatory bowel diseases. [Int J Infect Dis.](#) 2018 Oct;75:34-38

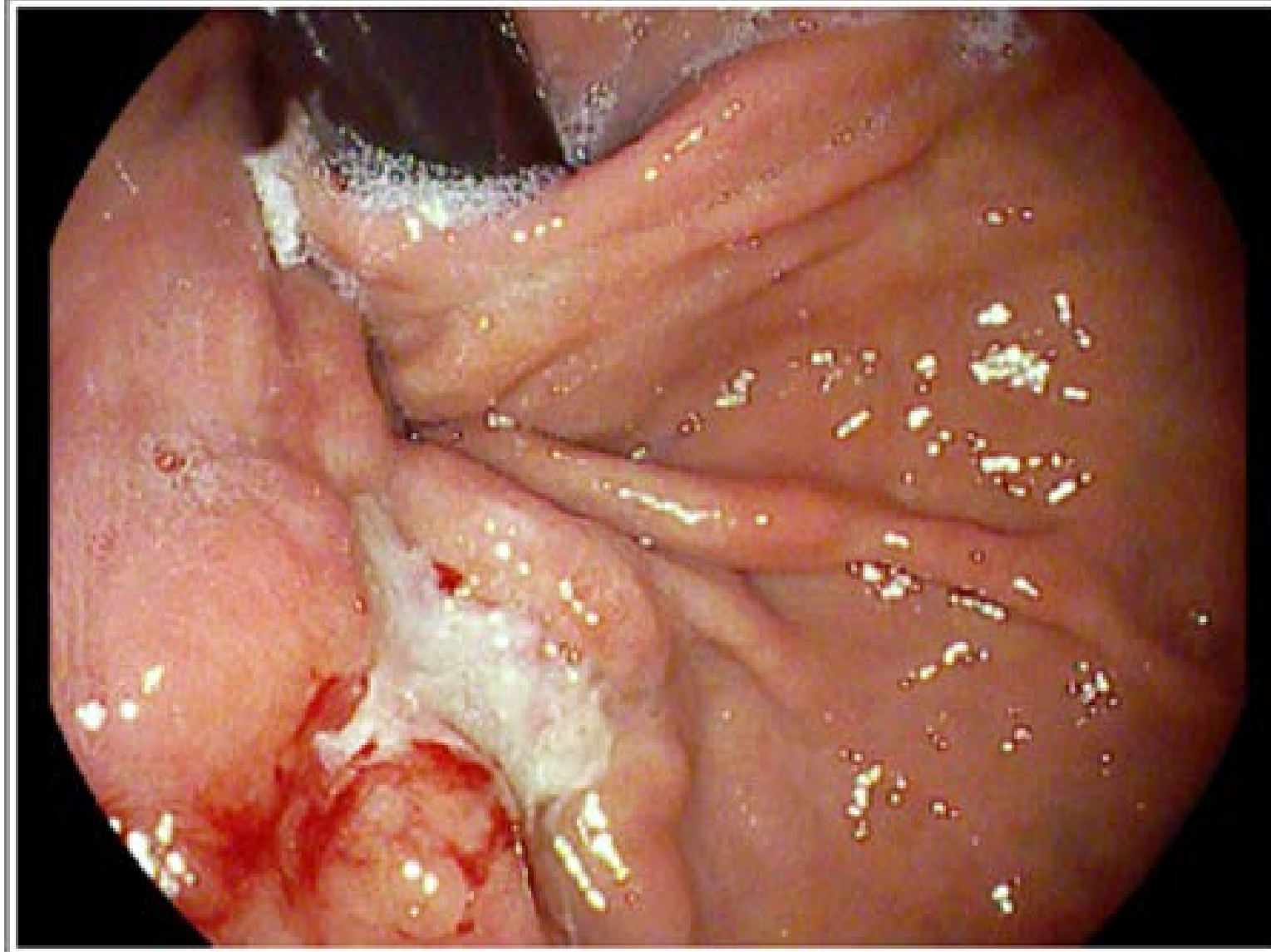
Syphilis Proctitis

- Primary anorectal syphilis occurs 2-3 weeks after exposure
 - Anorectal chancres, often painful
 - May be mistaken for anal fissures
- Secondary syphilis occurs 6-8 weeks after chancres heal
 - Maculopapular rash of palms and soles
 - Systemic symptoms of fever, weight loss, night sweats
 - Condyloma latum

Syphilis Proctitis: Endoscopic Appearance



Syphilis gastritis



Syphilis: Diagnosis

- Ancillary stains low yield¹
- Darkfield examination for *Treponema pallidum* of exudate or tissue from lesions
- Two types of serologic tests
 1. Non-treponemal tests (VDRL or RPR)
 2. Treponemal tests

Fluorescent treponemal antibody absorbed [FTA-ABS] tests

T. pallidum passive particle agglutination [TP-PA] assay

Enzyme immunoassays and chemiluminescence immunoassays

1. Arnold, Voltaggio. Syphilitic and lymphogranuloma venereum (LGV) proctocolitis: clues to a frequently missed diagnosis. [*Am J Surg Pathol.* 2013 Jan;37\(1\):38-46.](#)

Gonorrhea Proctitis: Clinical Presentation

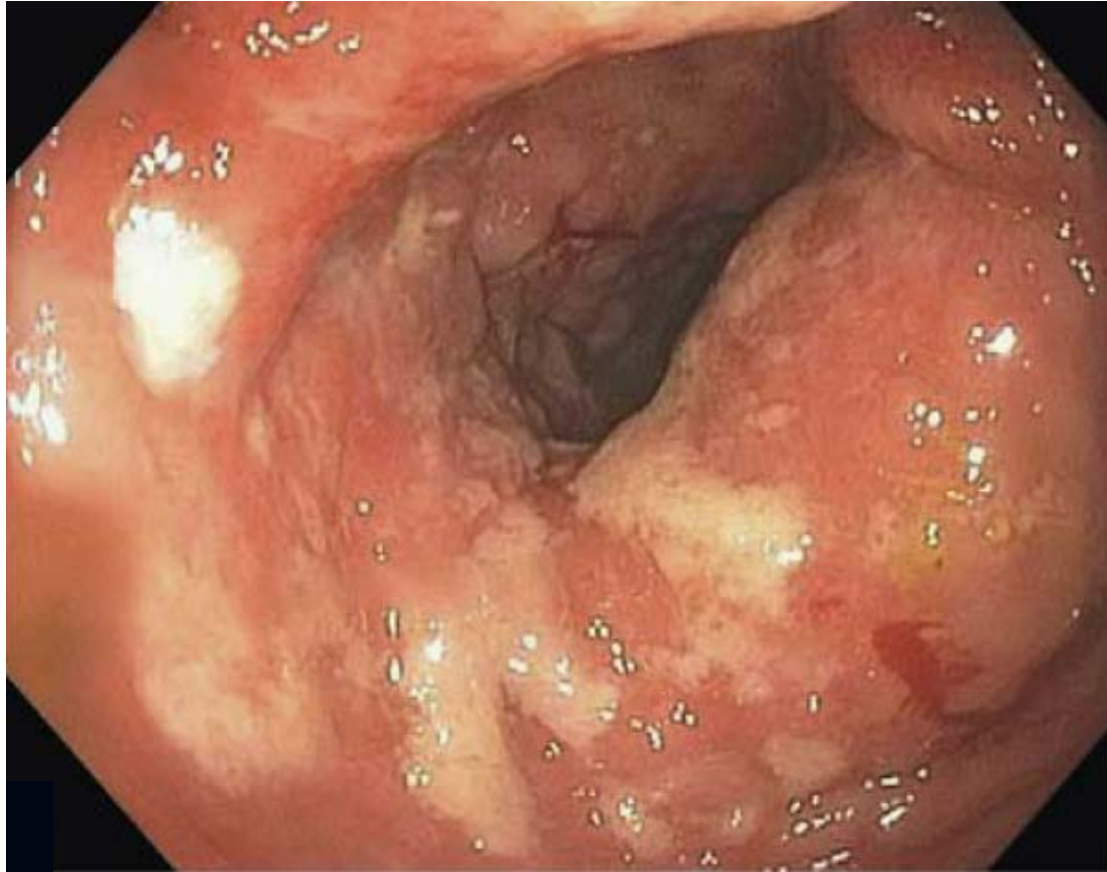
- Typically encountered in individuals engaging in anal receptive intercourse
 - Results from contiguous spread from cervix in 50% of women
- 4.5% to 6% incidence in screened MSM
- 85% of infected patients are asymptomatic
 - Symptomatic patients have higher bacterial loads
- 25% co-infected with Chlamydia
- Perianal pain and pruritus, tenesmus, and mucopurulent or sanguinous discharge

Peters et al. Evaluation of sexual history-based screening of anatomic sites for *Chlamydia trachomatis* and *Neisseria gonorrhea* infection in men having sex with men in routine practice. *BMC Infect Dis.* 2011;11:3

Kent et al. Prevalence of rectal, urethral, and pharyngeal chlamydia and gonorrhea detected in 2 clinical settings among men who have sex with men: San Francisco, California, 2003. *Clin Infect Dis.* 2005;41:67–74.

Whitlow CB. Bacterial sexually transmitted diseases. *Clin Colon Rectal Surg.* 2004;102:229-243

Gonorrhea Proctitis: Endoscopic Appearance



Case courtesy of Dr. Aatur Singhi, UPMC

Chlamydia trachomatis

- Most common STI in United States
- LGV associated with serovars L1-L3
 - Incubation period 5-14 days
 - Serovar L2 associated with proctitis
 - Non-LGV chlamydial infections are epithelial, whereas LGV serovars are invasive and lymphotropic

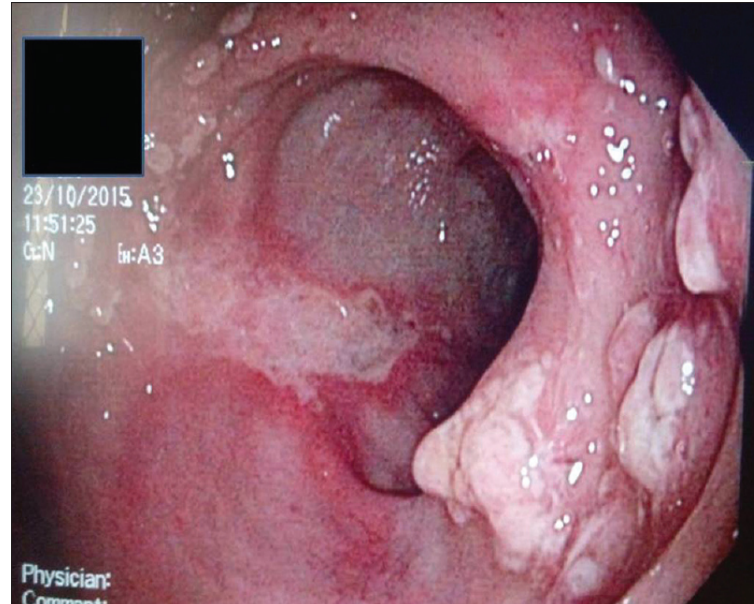
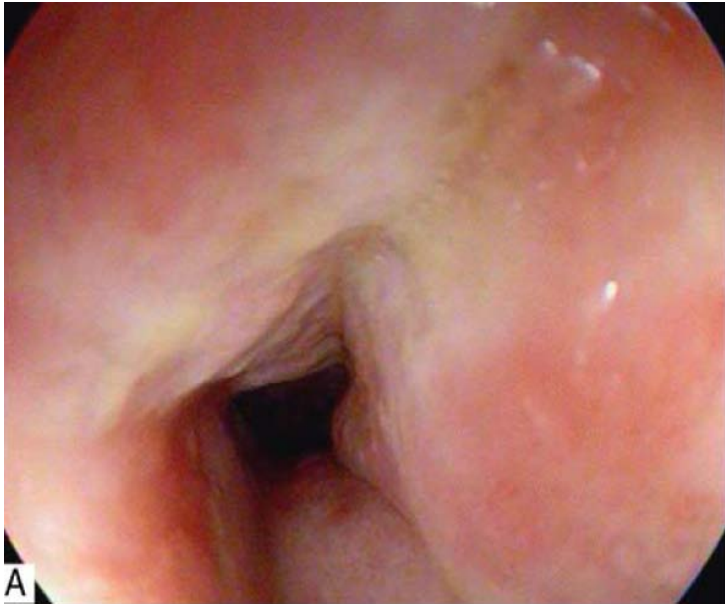
Chlamydia Proctitis: Clinical Presentation

- Non LGV chlamydia
 - Majority of infections are asymptomatic
 - Anorectal pain, tenesmus, mucosanguinous discharge, abdominal pain, constipation
- **LGV: Proctitis and proctocolitis are now the most commonly reported clinical manifestations¹**
 - Stage 1: Painless, ulcerating papule
 - Stage 2: Painful inguinal/femoral lymphadenopathy
 - Proctitis occurs in 96% of patients²
 - Stage 3: Strictures, fistulas, disfiguring anogenital lesions

1. Stoner et al. Lymphogranuloma Venereum 2015: Clinical Presentation, Diagnosis, and Treatment. Clin Infect Dis. 2015 Dec 15;61 Suppl 8:S865-73

2. Ward H, Martin I, Macdonald N, et al. Lymphogranuloma venereum in the united kingdom. Clin Infect Dis. 2007;44: 26 32.

Chlamydia Proctitis: Endoscopic Appearance



Chlamydia

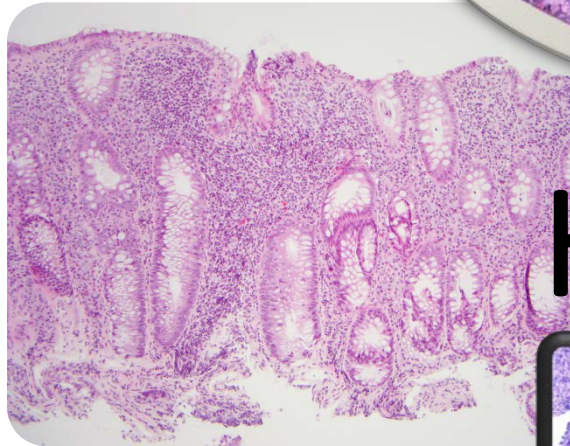
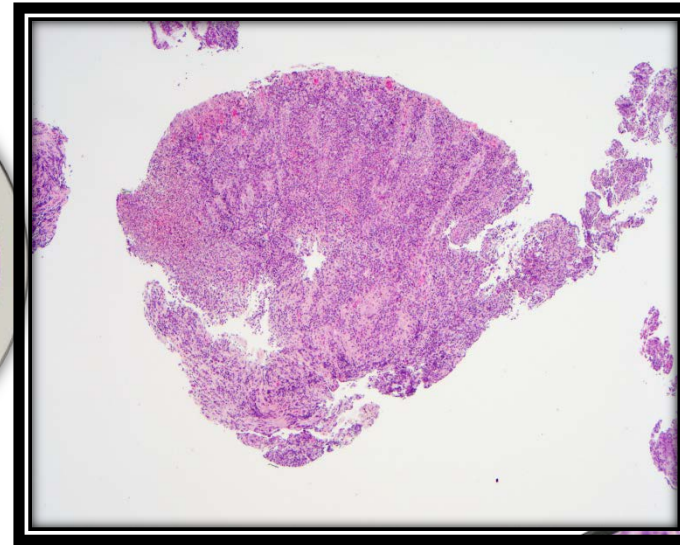
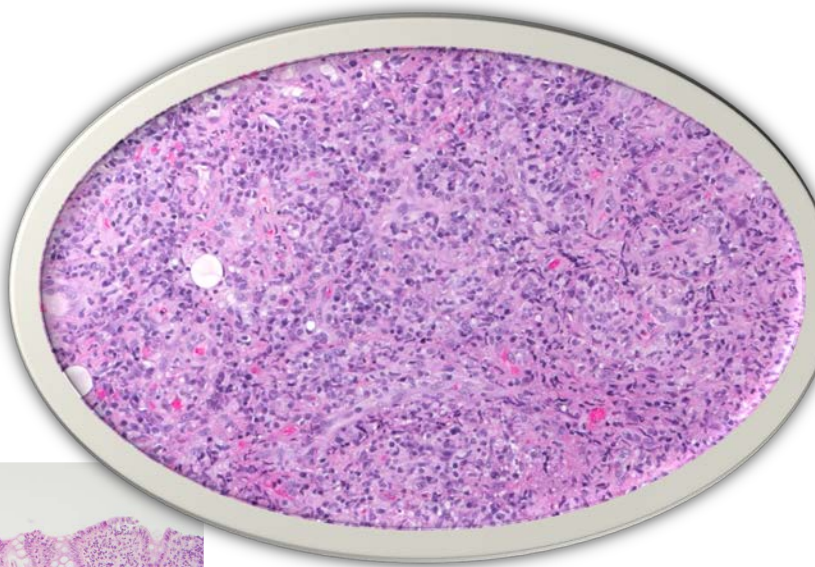
Young patient, 9
cm rectal mass



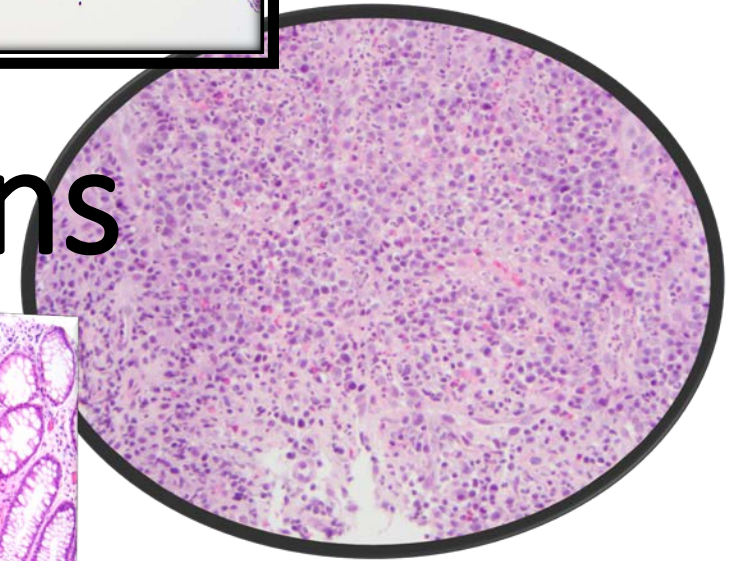
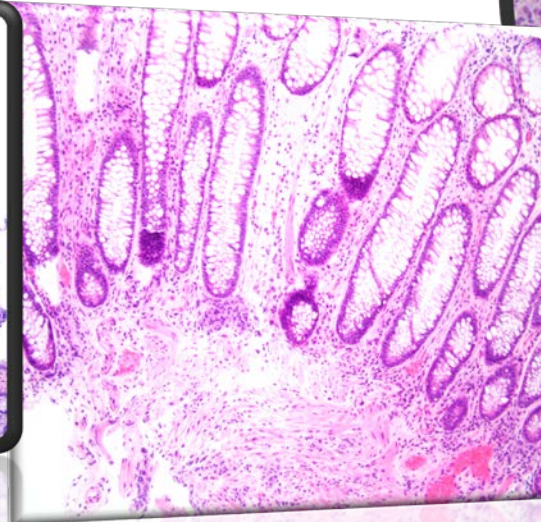
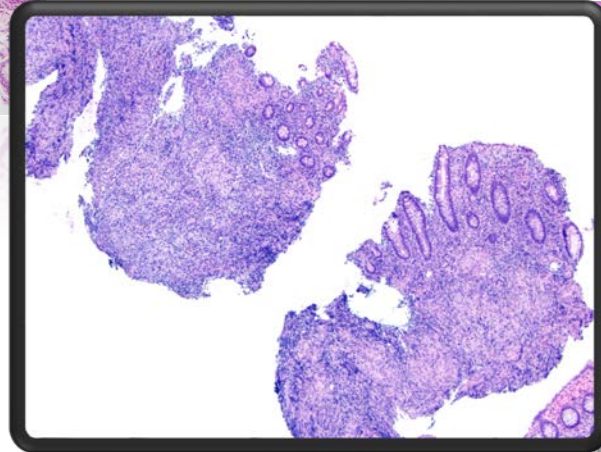
Courtesy of Dr. Christina Arnold, Ohio State University

Chlamydia/Gonorrhea Diagnosis

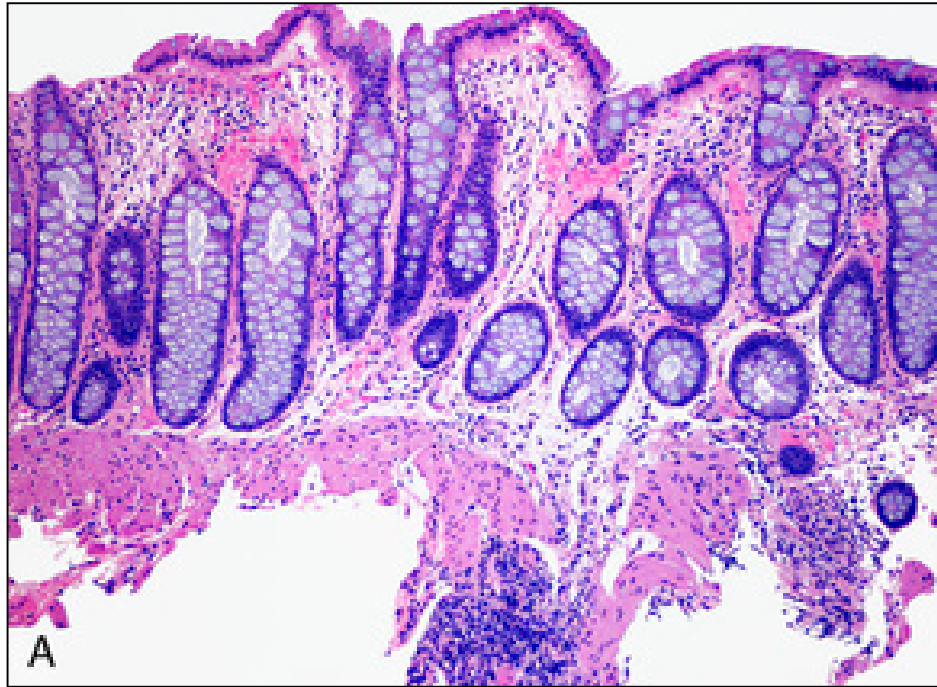
- No ancillary stains commercially available (yet)
- Rectal swab for NAAT
- Treat empirically when proctitis, lymphadenopathy, anogenital ulcerations are seen



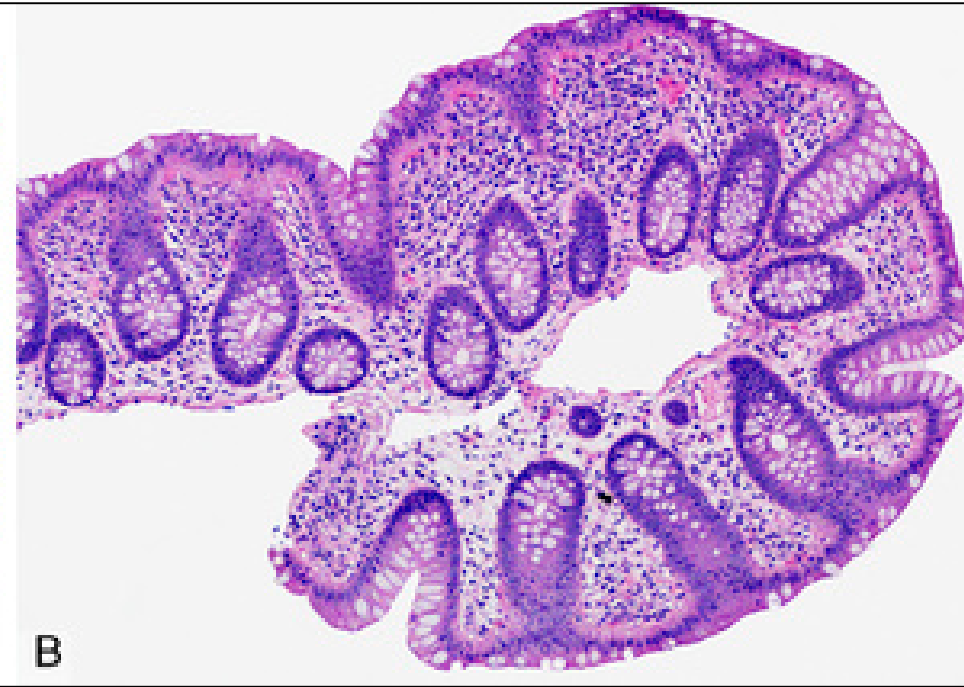
Histologic Patterns



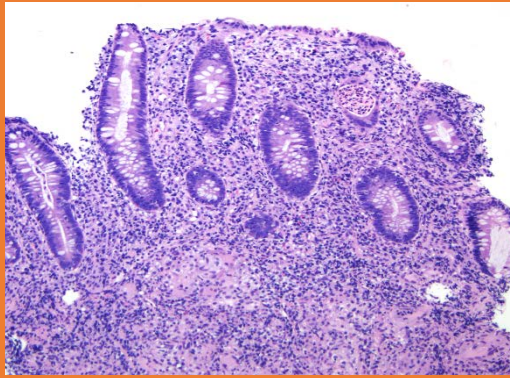
Normal Rectum



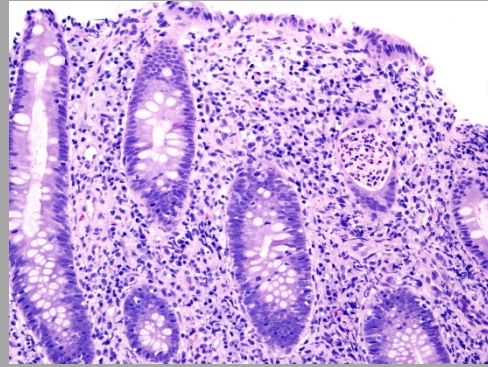
Normal Right Colon



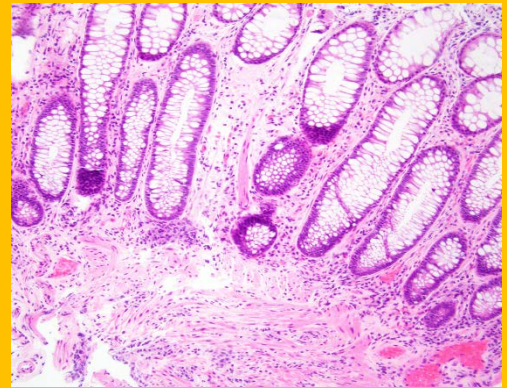
3 Main Findings: Rectum



INFLAMMATORY LAMINA
PROPRIA EXPANSION

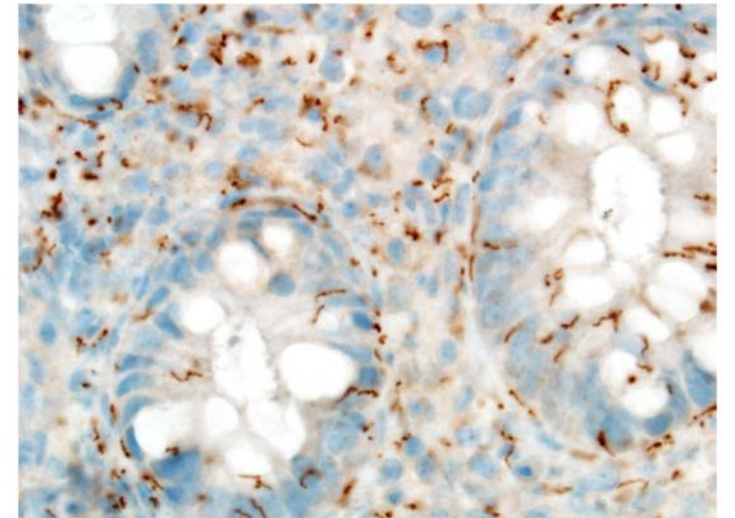
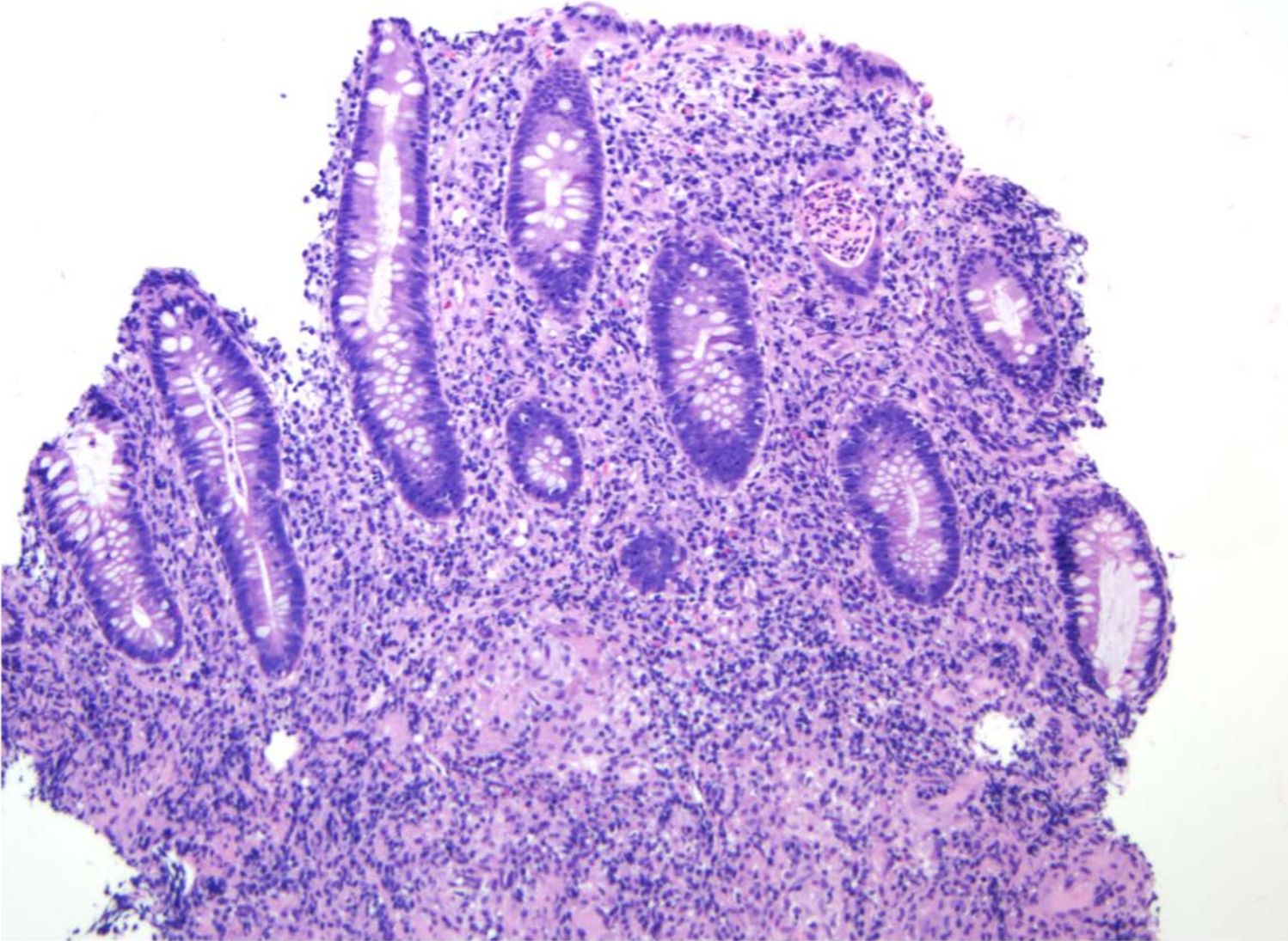


MILD TO MODERATE, FOCAL
ACUTE INFLAMMATION



PRESERVED GLANDULAR
ARCHITECTURE

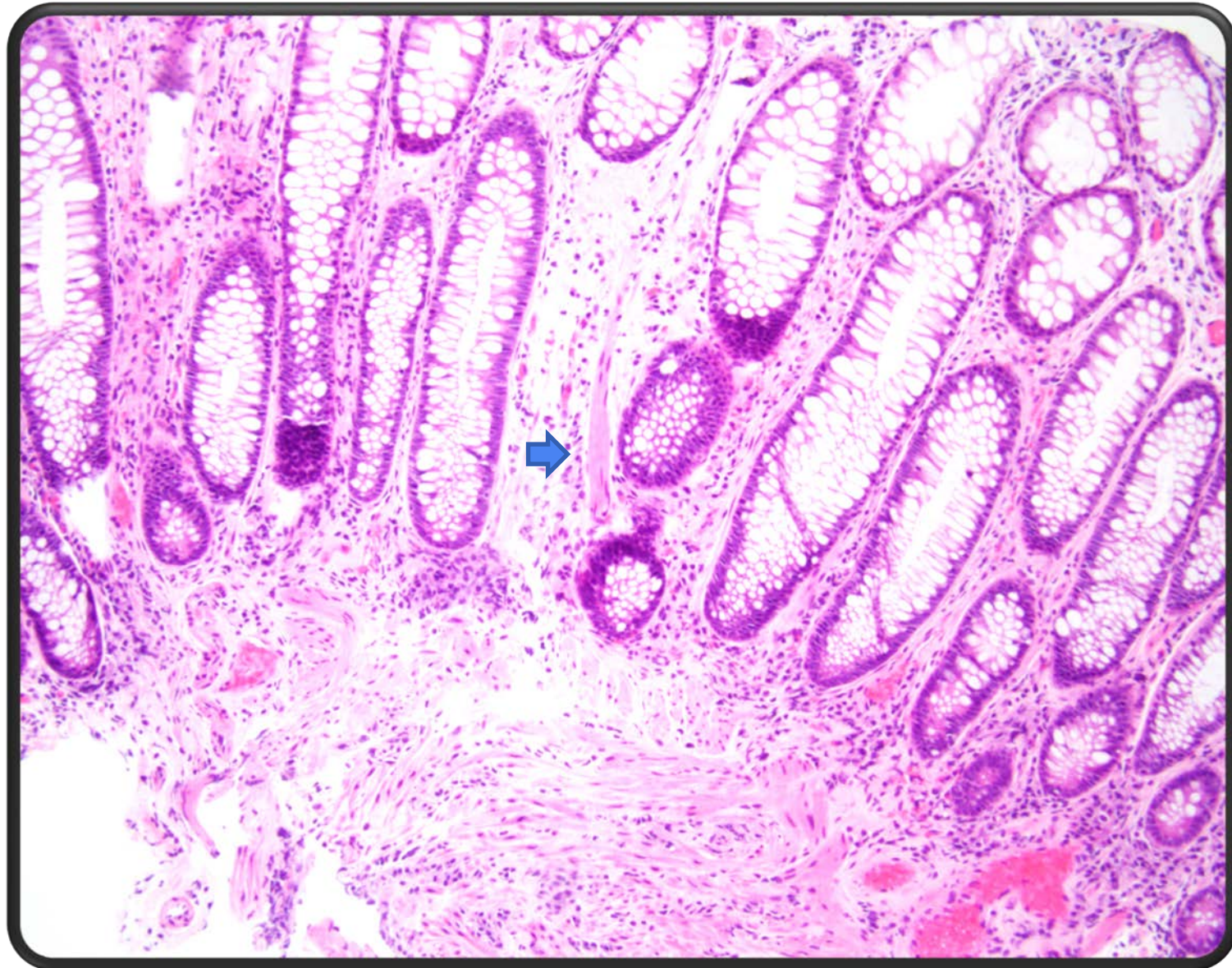
Syphilis- Lymphoma- like



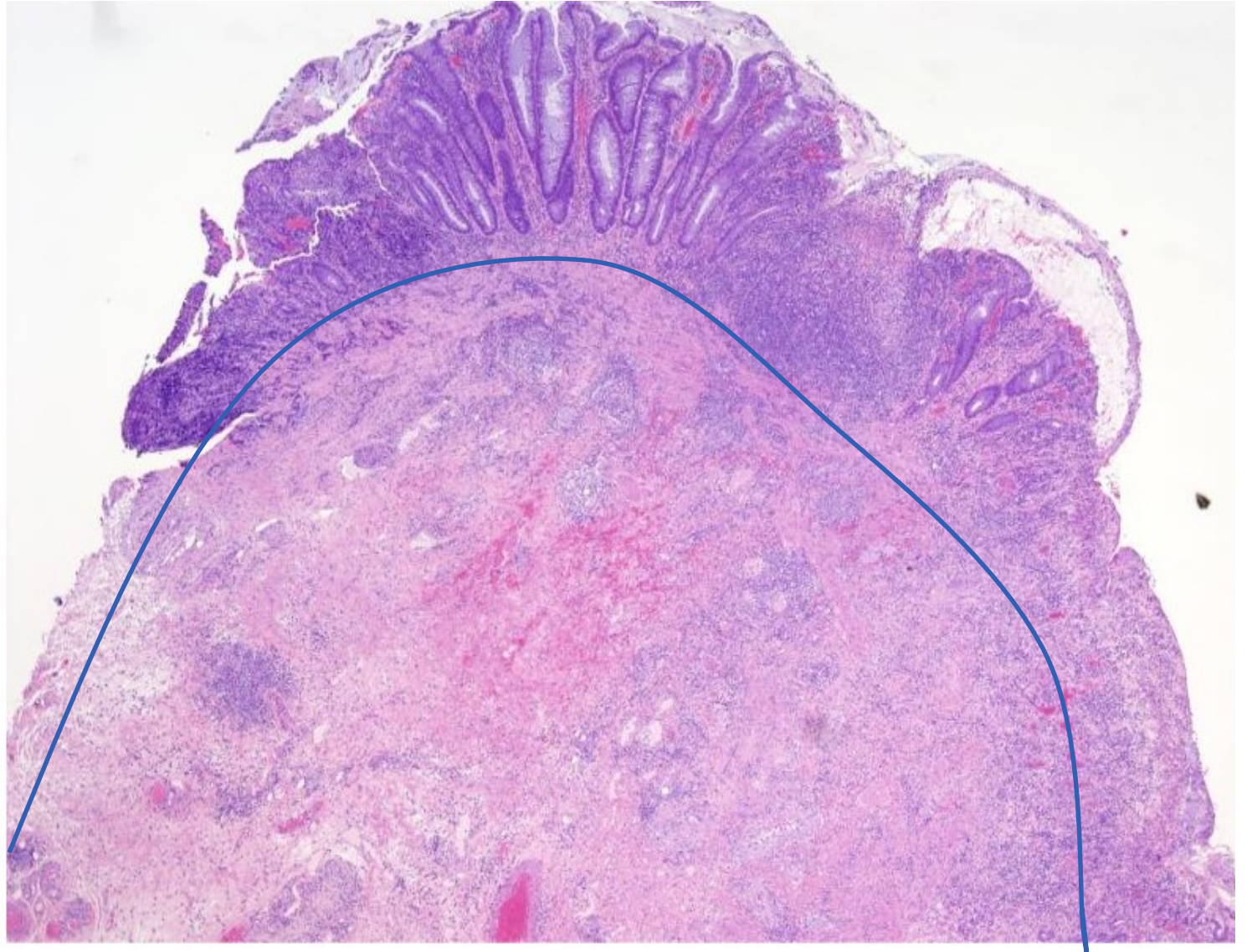
Case courtesy of Dr. Maryam Kherad-Pezhouh, Northwestern,
Chicago, IL

Tse,Zukerberg. Syphilis of
the Aerodigestive Tract.
[Am J Surg Pathol.](#) 2018 Apr;42(4):472-
478

Rectal Prolapse-Like

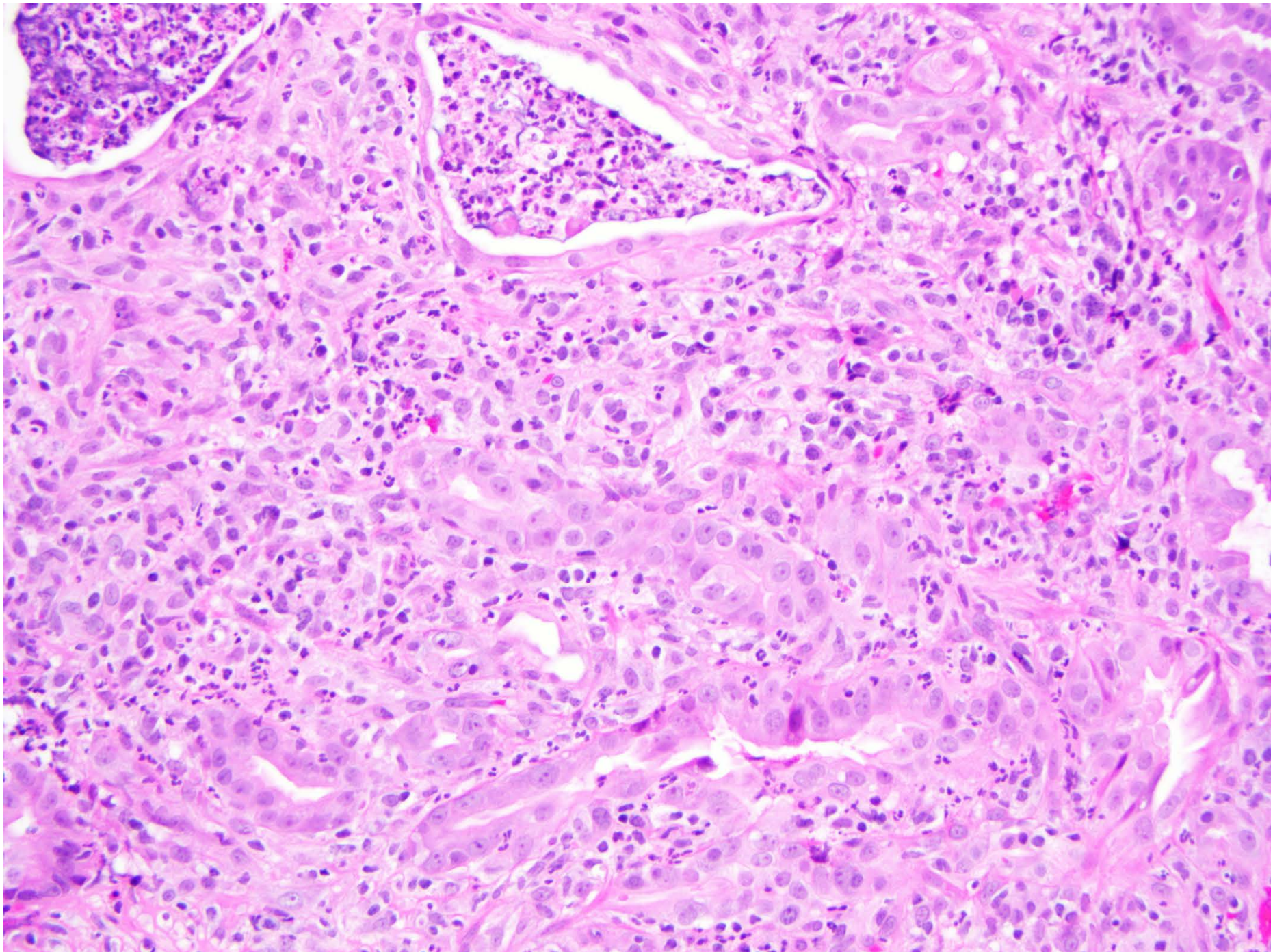


Tumoral Form: Submucosal Fibrosis

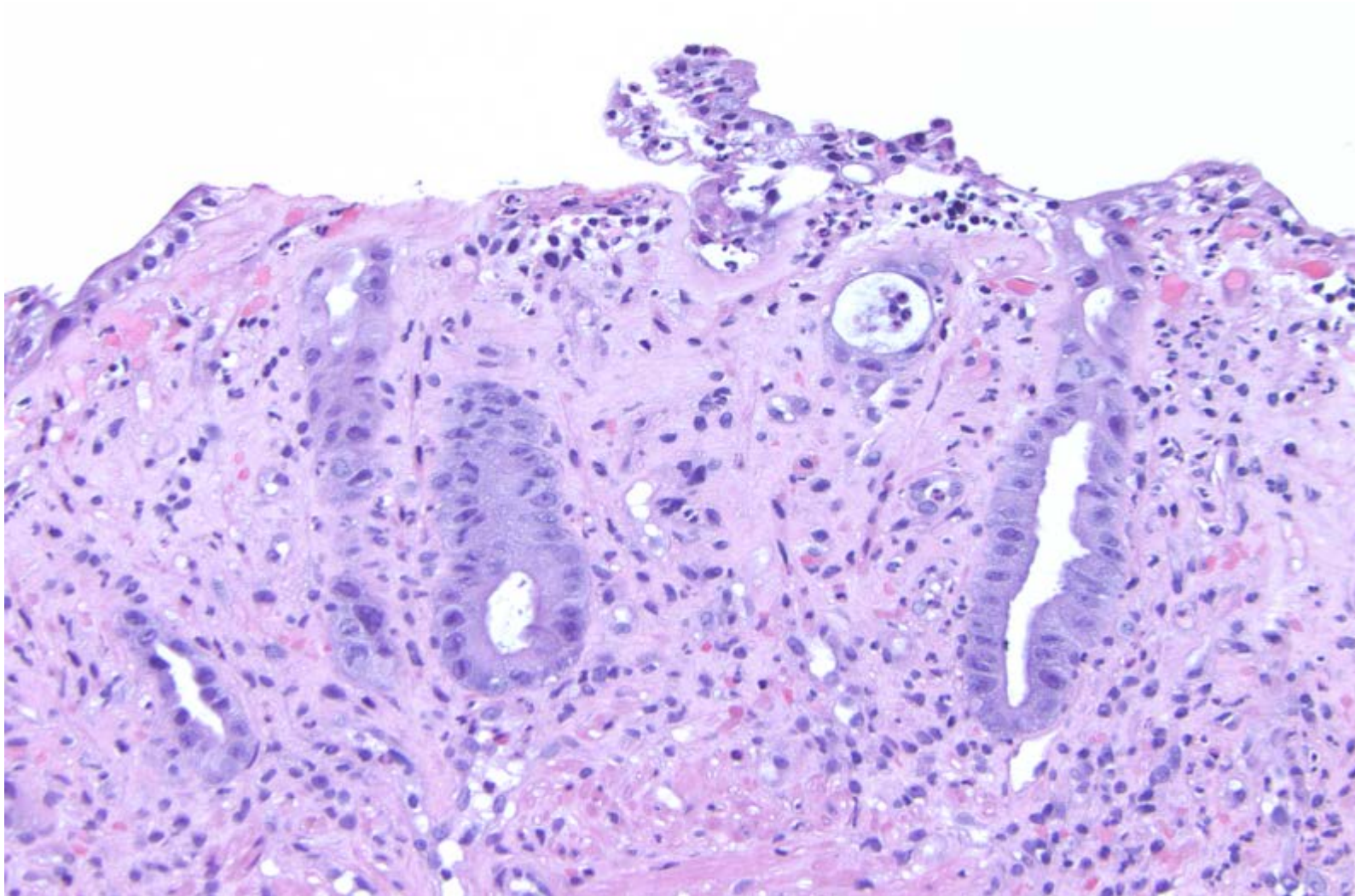


Initial histologic
impressions:

- Lymphoma
- EBV gastritis



Gonorrhea-ischemic/radiation injury pattern

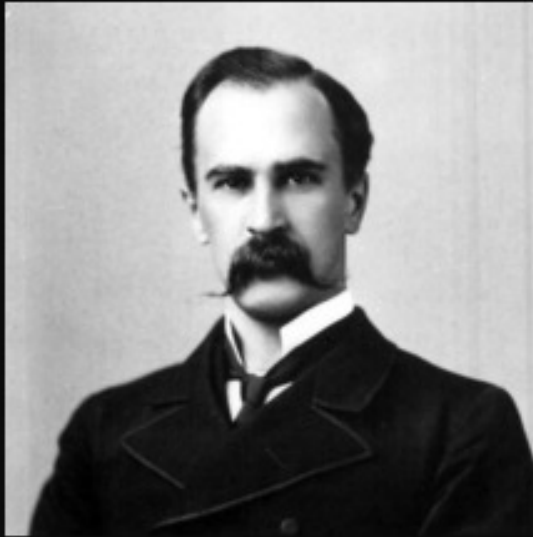


Predominantly
superficial
inflammation

Courtesy Aatur Singhi, MD, PhD, UPMC

Summary

- STIs are making a comeback
- MSM are at increased risk
- Clinical and pathologic features variable
 - Clinic: Thorough sexual history
 - Clinic and microscope: High level of suspicion



S/He who knows syphilis knows
medicine

~ William Osler