A Young Man with Colitis, Arthritis and Rash

Presenter: JOSEPH SAABIYE, MD
joseph.Saabiye@mountsinai.org

Joseph Saabiye[1], Michelle Ordoveza[1], Christian Olivo Freites[2], Christine Stavropoulos[1]

Department of Infectious Disease[1], Internal Medicine[2], Icahn School of Medicine at Mount Sinai St. Luke's - West Hospital Center Program, New York, NY

CASE PRESENTATION

26 y.o M presented with subjective fevers and generalized fatigue of 2 days duration

- Associated symptoms:

*Nausea, vomiting & watery diarrhea
*Weakness/ heaviness in the left upper extremities
*Mild headache

- T 96.9 HR 97 RR 13 BP 76/53 O2Sat 96%
- Pertinent PE findings:

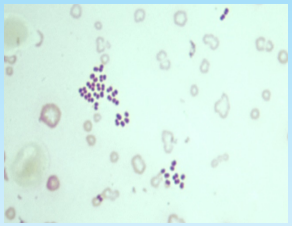
Toxic appearance
RLQ tenderness
L arm weakness
L shoulder decrease ROM
Non blanching brown/purple lesions

History	
Medical/ Surgical Hx	None
Smoking/Alcohol	Occasional
Drugs	Never
Sexual History	3 female partners / 6 months
Occupation	Graduate Student
Born/Raised	China
Travel	Canada/China last month
Pets	None

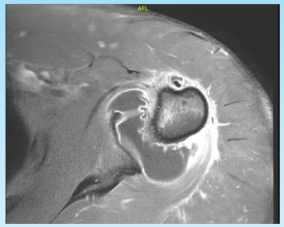
Lab/Micro/Imaging	
WBC	4.5
Plt	107
Crea	1.19
Bil T/D	4.3/0.3
INR	1.6
BNP	577
HIV/viral hepatitis	Neg
GI Pathogens PCR	Neg
CT A/P	Cecum and ascending colon colitis
CSF	WBC 2 Glu 68 Prot 27
CSF Cx	Neg
Blood Cx	Neisseria meningitidis
Shoulder Arthrocentesis	WBC 53.6K - 82% PMN Gram neg diplococci

DIFFERENTIAL DIAGNOSIS

Streptococcus pneumoniae
Neisseria gonorrhoeae
Neisseria meningitidis
Staphylococcus aureus
Rickettsial disease
E. Coli 0157
Typhoid Fever



BCx/ GS: Gram neg diplococci

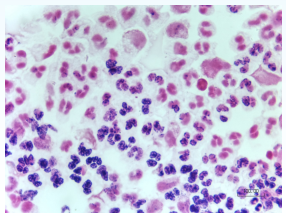


L Shoulder MRI: Arthritis & Tenosynovitis

4 DAYS LATER … THE OUTBREAK

A 34 y.o male graduate student from the same university presents with headaches and fevers of 2 days duration associated with left hearing loss

- In the ED: VS within normal limits and afebrile
- PE normal except for ill appearance
- Labs: WBC: 18.2/ 91.8% PMN
  CSF: WBC 1716/ 96% PMN, Glu 26, Prot 325
  Meningitis/Encephalitis Panel PCR: + Neisseria meningitidis
  Blood Cx: Neg



CSF culture/Gram Stain:
Gram neg diplococci

- Neisseria meningitidis serogroup B found in both pts
- Dept of health declared an outbreak
- Post exposure prophylaxis administered
- Vaccination Campaign initiated: 589 students were given MenB-4C (Bexsero) vaccine x2 each

CONCLUSION

- Neisseria meningitidis can manifest solely with meningococcemia without meningitis. A negative LP does not exclude the diagnosis.
- Isolated GI symptoms can occur as the initial presentation and may misdirect the evaluation and/or delay the diagnosis with resultant higher fatality rates compared to patients with the more typical presentation of fever, headaches and purpuric rash (24% vs 10.4% p 0.007).[1]
- Joint involvement is not uncommon but is frequently polyarticular secondary to immune complex deposition. Less often, pts can present with monoarticular purulent arthritis, with the knee being the most involved joint.[2]
- Have a high index of suspicion for N. meningitidis in young healthy pts presenting with DIC, septic shock, neurological deficit, arthritis or purpuric rash, even if they have received a meningococcal vaccination.
- While the conjugate meningococcal vaccine, which covers serogroup A, C, W and Y, is generally advised for university students, immunization with the serogroup B vaccine is not generally recommended for university students but is often considered discretionary.[3]
- While multiple clusters and outbreaks of MenB have been identified among undergraduate students, to our knowledge, this is the **first MenB outbreak in graduate students**. Benefits and cost effectiveness of Immunization of graduate students should be reassessed given the close proximity and similar risk factors as college students.

US Outbreaks of MenB on college campuses	# cases / year
Providence College	2 cases / 2015
University of Oregon	7 cases / 2016
Santa Clara University	3 cases / 2016
Rutgers University	2 cases / 2016
University of Wisconsin	3 cases / 2016
Oregon State University	6 cases / 2017
University of Massachusetts	2 cases / 2017
San Diego State University	3 cases / 2018

Ref: 1. Guiddir et al. Clin Infect Dis. 2018. 2. Schaad et al. Rev Infect Dis. 1980
3. Soeters et al. Emerg Infect Dis. 2019