

A Double Whammy Pneumonia

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IDAC Fall Symposium

11/6/21

Story

CC: Dyspnea x3 days

HPI:

- 88-year-old Latina woman with dyspnea at rest and exertion x3 days.
- Associated symptoms: Fatigue, generalized myalgias, subjective fevers, cough productive white sputum, palpitations.
- No improvement in dyspnea with Albuterol

Past History

MEDICAL HISTORY

- Hypertension
- Osteopenia
- Major Depressive Disorder
- Reactive airway disease (No PFTs)

SURGICAL HISTORY

- Cholecystectomy (1978)

FAMILY HISTORY

- Multiple family members SARS-CoV-2 +

ALLERGIES

- NKDA

MEDICATIONS

- Amlodipine 5 mg daily
- Alendronate 70 mg weekly
- Paroxetine 10 mg daily
- Albuterol HFA 90 mcg/inh PRN

Social History

SICK CONTACTS

- Multiple family members with COVID-19

RESIDENCE

- Bakersfield, CA

TRAVEL

- Recent travel to Mexico

DENIES

- Tobacco
- Alcohol
- Drugs
- Injection drug use
- Sexual history
- Unpasteurized dairy products
- Animal exposure
- Recent hospitalizations

Physical Exam

Temp: 36.9C, BP: 84/50, HR: 109, RR: 25, SpO2: 97% RA → 80% ambulating

GENERAL: NAD. NC AT, HEENT: PERRLA, EOMI.

NECK: Supple with normal ROM and no meningeal signs.

CARDIAC: Regular tachycardia. No MGR.

RESPIRATORY: Bronchial breath sounds on the right. Tachypnea to mid 20s but no use of accessory muscles.

ABD: BS+, ND, soft, no TTP.

SKIN: Warm and dry. No rashes. EXT: No pitting edema.

NEURO: A&O x3. Cranial nerves intact. Motor and sensation grossly intact.

Labs

CBC

6.2 / 13.0 / 38.5 / 201

Bands 50%, ANC 5.1

Lymphs 16%, ALC 1.0

BMP

135 / 3.9 / 104 / 26 / 24 / 0.90 / 110

LFT

AST 10 / ALT 16 / ALP 80

T bili 0.5 / T protein 6.9 / Alb 3.4

Lactic Acid: 2.5 -> 1.0

Procalcitonin: 3.62

CRP 4.99

LDH 156

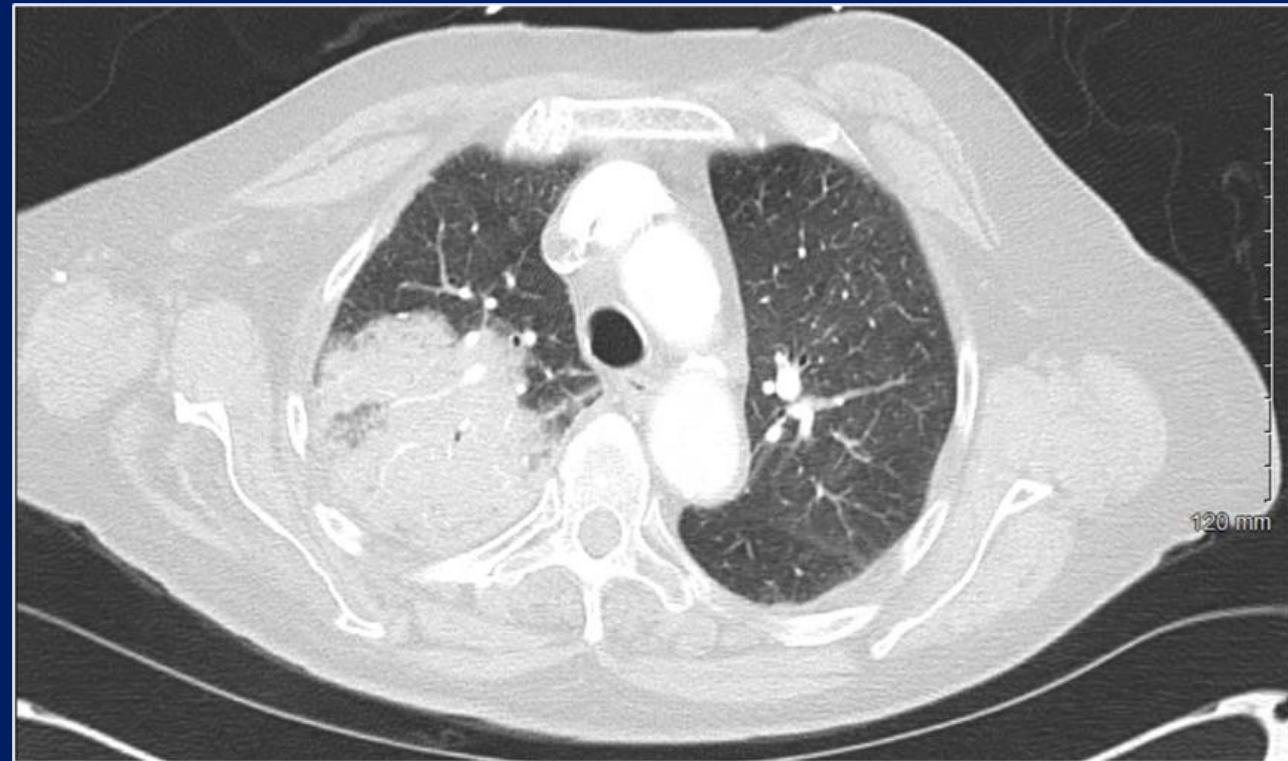
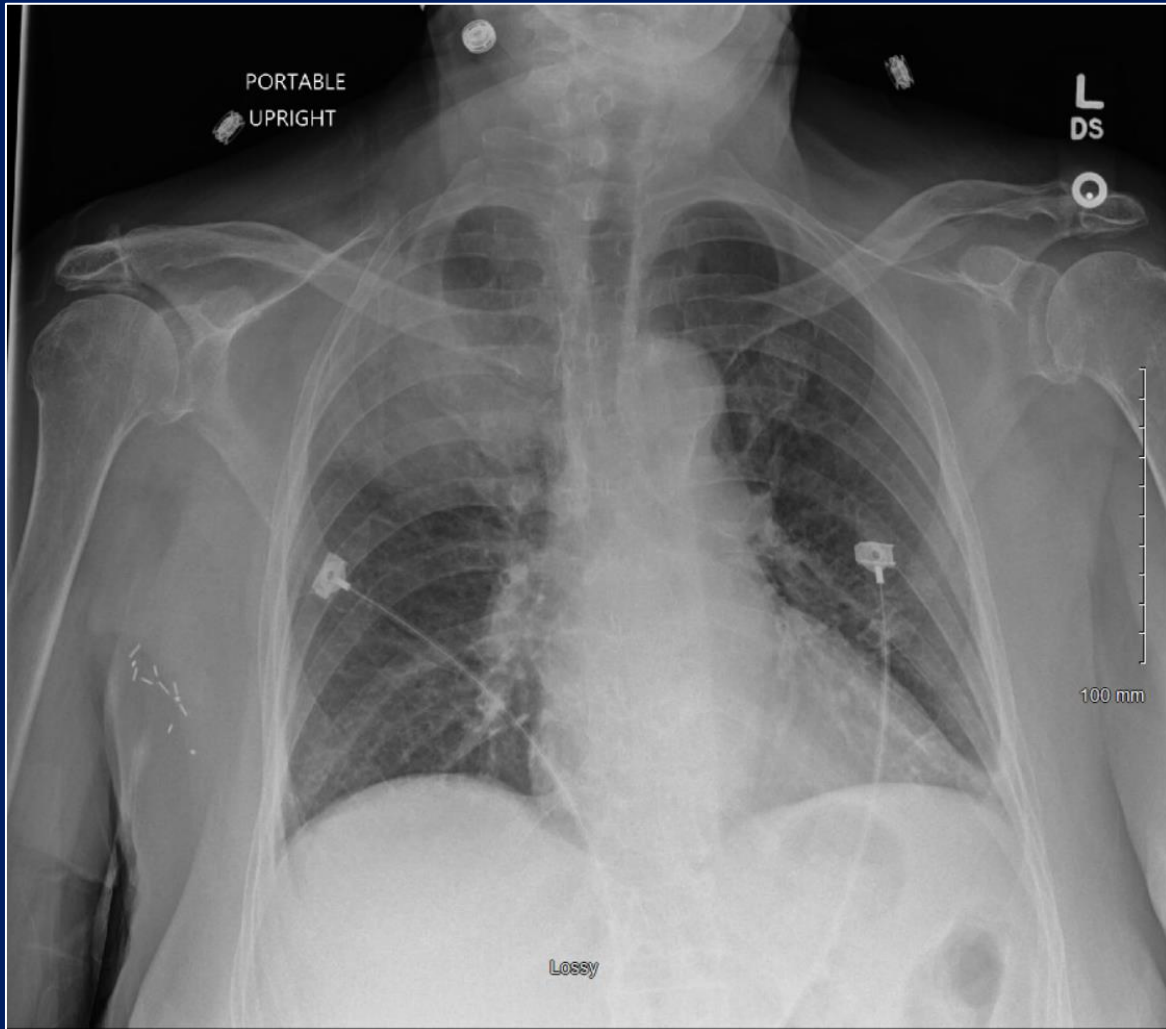
Ferritin 51

Troponin <0.05

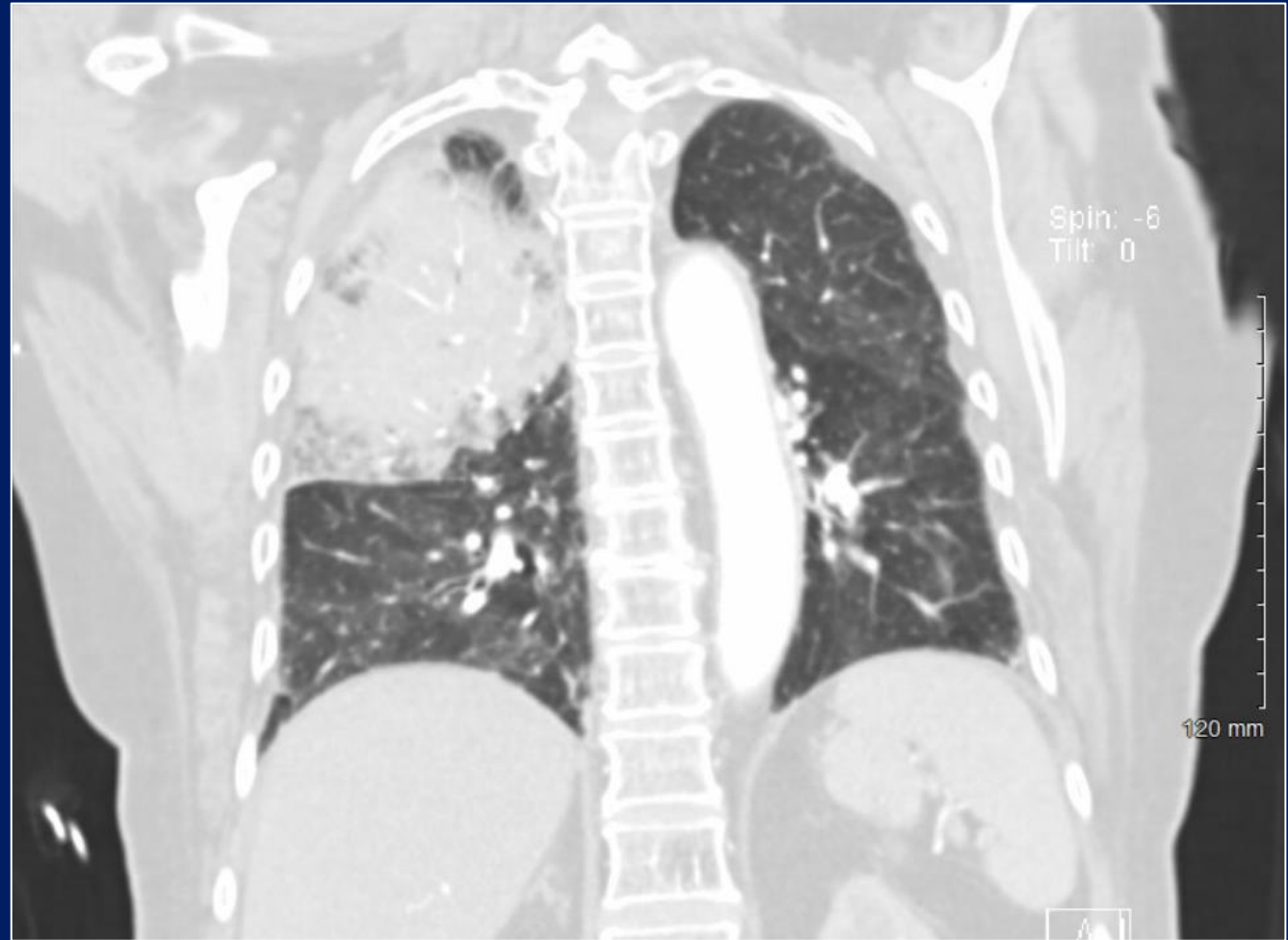
Vitamin D 19

HbA1c 6.2%

Chest Imaging



Differentials?



Work-up

- Maximum isolation precautions (Airborne, droplet, contact)
- Azithromycin and ceftriaxone
- SARS-CoV-2 PCR
- Cocci serology
- QuantiFERON TB Gold
- Sputum AFB x3

Results

SARS-CoV-2 RNA: Reactive

Influenza A Antigen -

Influenza B Antigen -

Cocci Serology

IgM immunodiffusion NR

IgG immunodiffusion NR

CF titer <1:2

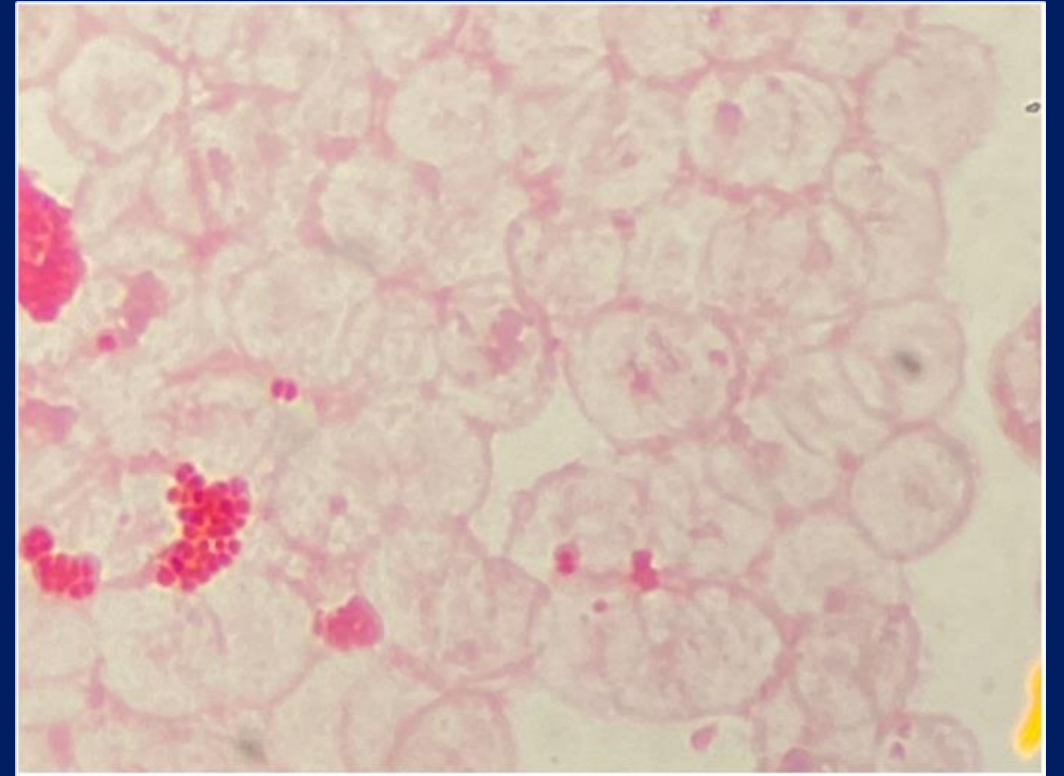
QuantiFERON TB Gold

Negative

Sputum AFB Culture and Smear

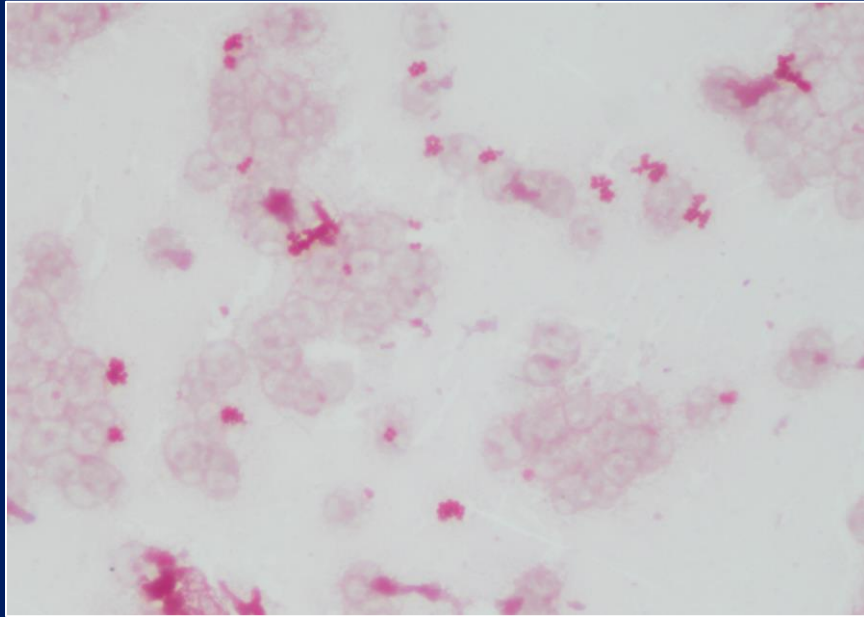
Negative x2

Blood Micro

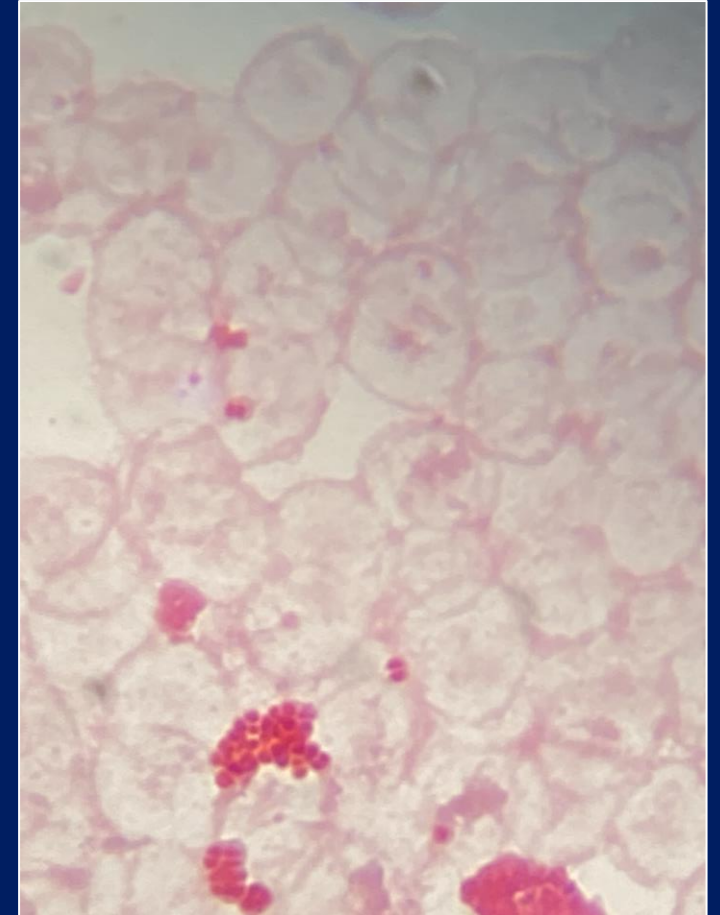


- Blood culture: Gram negative diplococci
- *Neisseria meningitidis*

Blood Micro



- Gram stain 60X



Hospital Course

Neisseria meningitidis pneumonia with bacteremia

- LP not performed given no clinical suspicion for meningitis
- Sputum culture ordered but never collected given concurrent SARS-CoV-2
- Ceftriaxone 2 g IV Q24H x5 days
- DC with Amox/Clav to complete a total of 14 days

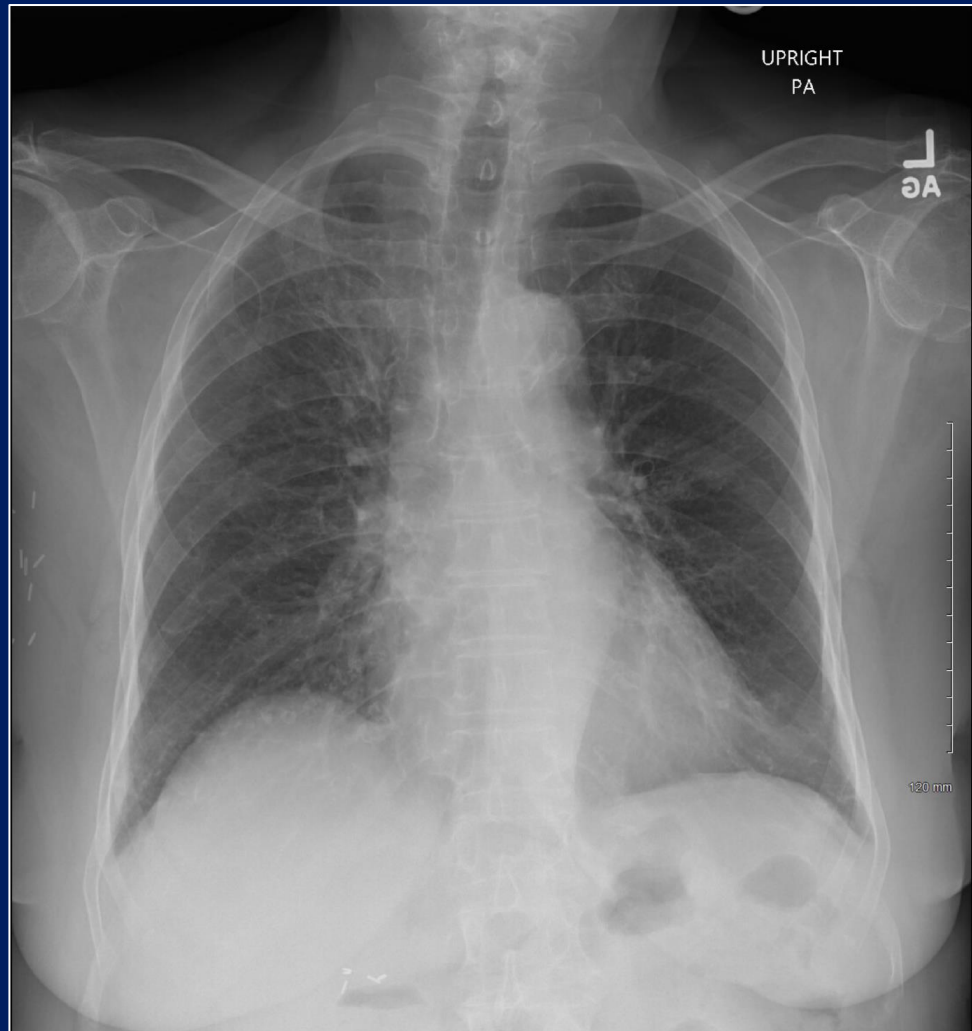
Hypoxia, due to RUL pneumonia and/or SARS-CoV-2

- Complete 10-day course of prednisone 40 mg daily
- DC with supplemental home oxygen 2 L NC

Sensitivities reported 4 weeks later

	MIC	
Ampicillin	> 4	R
Ceftriaxone	≤ 0.030	S
Chloramphenicol	1	S
Levofloxacin	0.250	R
Meropenem	≤ 0.060	S
Penicillin	> 1	R
Trimethoprim/Sulfa methoxazole	2	R

Update... 3 month follow-up



- No longer hypoxic
- No longer requiring supplemental oxygen
- CXR: Near complete resolution of previously noted RUL consolidation

N. meningitidis pneumonia without meningitis

- First described 1907 during influenza pandemic
- 5 - 15 % of meningococcal infection
- 344 cases reported worldwide: (1906 - 2015)
- Only 3 cases reported in the US: (1998 - 2018)
- Occurs mainly with serogroups Y, W-135, and B.
- Risk factors: Older age and preceding viral infection, maybe due to the damage to nasopharyngeal mucosa during viral illness in an already colonized host

N. meningitidis pneumonia without meningitis

- Airway Pathway: Micro-aspiration of colonized upper airway secretions or inhalation of airborne droplets.
- Blood Pathway: Seeding of the lung after primary bacteremia.
- Third generation cephalosporin is the drug of choice
- Mortality <10% if treated appropriately
- Same chemoprophylaxis is needed for close contacts.

References

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