

A Rare presentation of Mycoplasma pneumonia associated with cholestatic jaundice

Muhammad Ali Tariq, Resident, Internal medicine, Suburban community hospital, Norristown PA. Parneet Kaur, Resident, Transitional year, Suburban community hospital, Norristown PA. Koteshwaredy Vadagandla, Resident, Transitional year, Suburban community hospital, Norristown PA. Jacqueline Turner, Medical student, PCOM, Philadelphia PA Mathew Mathew, Attending, Internal medicine, Suburban community hospital, Norristown PA.

Introduction

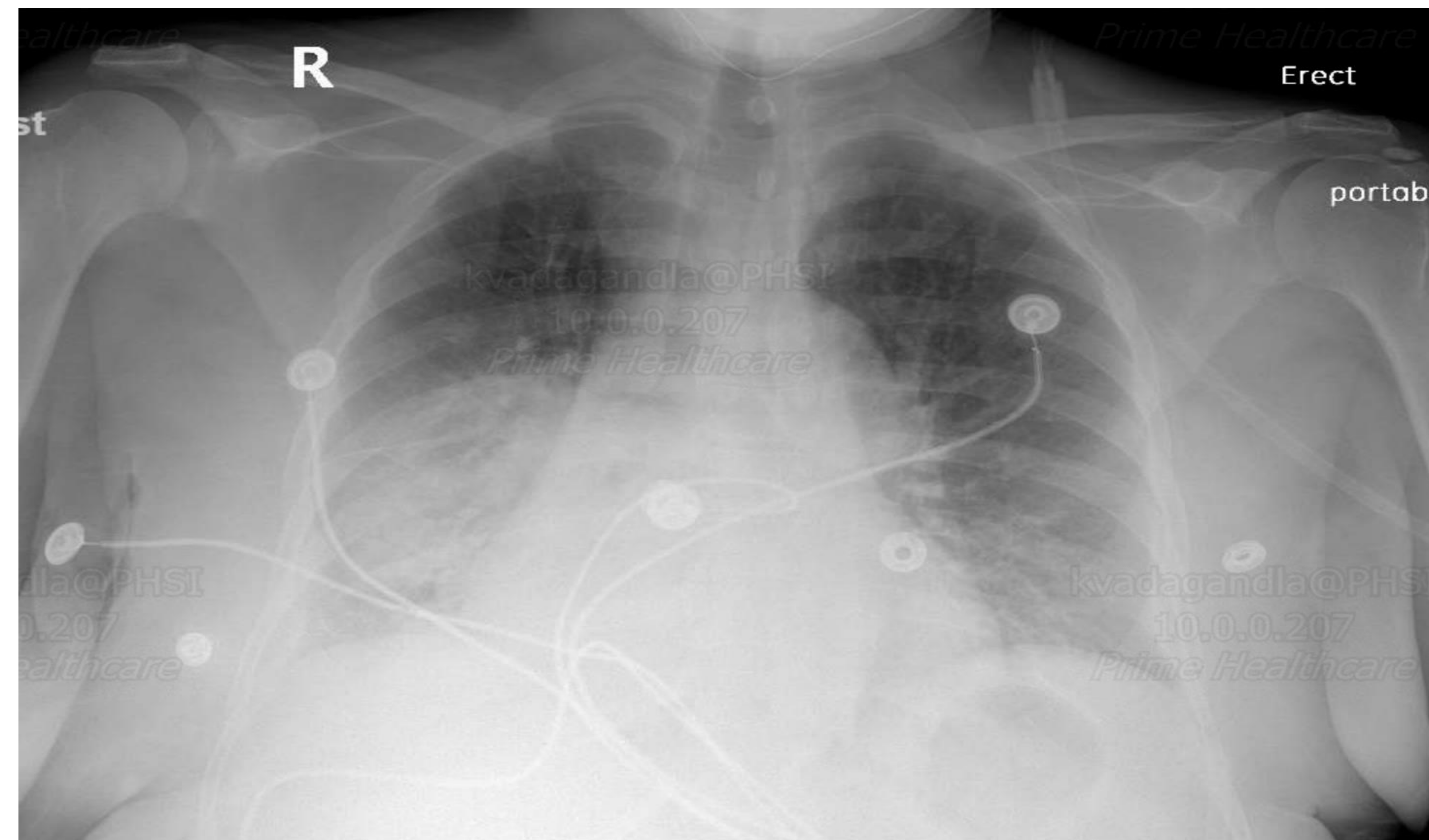
Mycoplasma pneumoniae is a common cause of community acquired respiratory infection and pneumonia. Disease severity may range from a mild to a severe lung infection requiring hospitalization. Extrapulmonary manifestations may include cardiovascular, gastrointestinal, neurologic, hematologic, and musculoskeletal. This case represents an unusual example of *Mycoplasma pneumoniae* infection associated with cholestatic jaundice, which has been rarely described in the literature.

Case Report

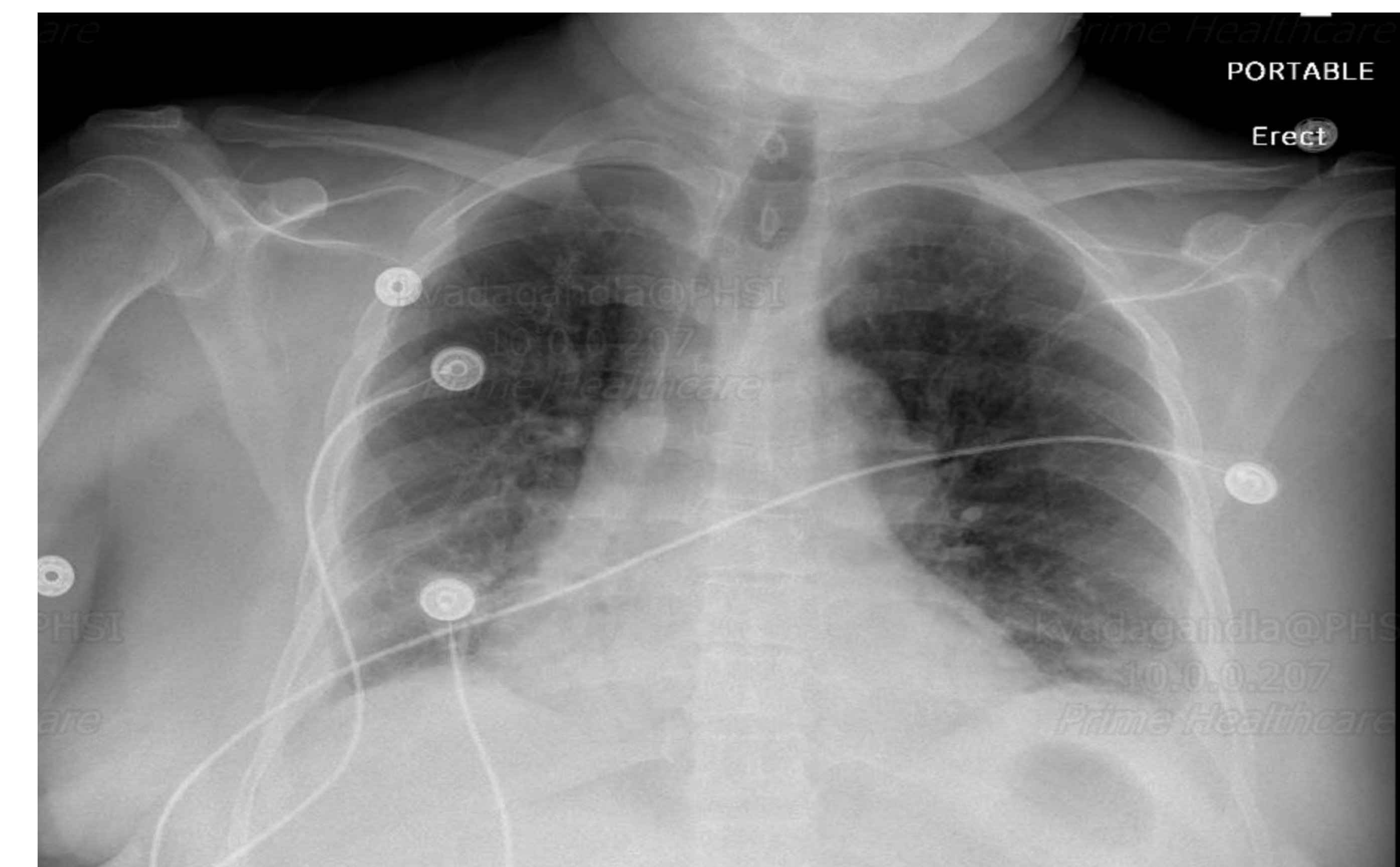
57-year-old female presented with a 4-day history of dry cough, fever, right upper quadrant pain, and myalgias. Her vitals on presentation included a temperature of 101.4 °F, a respiratory rate of 36, and a heart rate of 120. Physical exam was significant for scleral icterus, bilateral generalized rhonchi, and crackles on auscultation. Initial labs included a white count of 44,100 and an elevated bilirubin at 9.1 mg/dL with a direct bilirubin of 7.2 mg/dL. Chest x-ray showed right-sided pneumonia with patchy left basilar opacities. Initial CT abdomen showed no acute abnormalities. An abdominal ultrasound demonstrated hepatomegaly with fatty infiltration, no gallstones, and the common bile duct measured 4 mm. An acute viral hepatitis panel was negative. CT chest revealed airspace consolidation with bronchograms in the right lower lobe suspicious for pneumonia. IgM levels for *Mycoplasma pneumoniae* were found to be 2282 U/mL at this time. Initially, she was started on broad-spectrum antibiotics, vancomycin and zosyn, which were later changed to intravenous levofloxacin for atypical bacterial coverage. Her white count and total bilirubin showed significant improvement within 5 days with her white count down to 13,000 and her total bilirubin down to 2.4 mg/dL. After 7 days of treatment with levofloxacin and methylprednisone (for cholestatic hepatitis) her total bilirubin trended down to 1.4 mg/dL. Her chest x-ray also demonstrated significant improvement in the right lower lobe infiltrates. Marked improvement was also noted in the patient's clinical status with the disappearance of her scleral icterus.

Trend of WBC, Total Bilirubin, AST, ALT during hospitalization

LABS	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
WBC	44.8	23.2	18.6	13.00	12.20		
AST	91	54	32	24	20	20	21
ALT	53	36	35	35	36	31	27
TOTAL Bilirubin	9.3	8.6	5.9	3.3	2.4	1.9	1.5



CXR day of admission, extensive bilateral airspace consolidation



CXR day of discharge: Improved aeration in lung bases



CT Abdomen: Enlarged liver, no gallstones, no biliary duct dilatation

Pertinent Labs during hospitalization

LABS	REPORT
Blood culture	No growth after 5 days
Urine culture	Mixed gram + organism, contaminant
Sputum culture	Acceptable Q score, few WBC, Gram + and - rods, commensals
Urine legionella	Negative
Mycoplasma IgM	2282 (0-769)
Lactic acid on admission	2.7
COVID PCR	Negative
MRSA	No growth

Discussion

Several mechanisms have been proposed regarding the cause of hepatitis infection in these patients. The most common one posits that immune-mediated damage is the triggering factor. This is caused by cross-reactivity of anti-*Mycoplasma pneumoniae* antibodies with epithelial cells and interaction with sialo-oligosaccharides on hepatic cells. The patient's rapid improvement of liver function and jaundice after the initiation of antibiotics suggests a direct infectious process involving hepatocytes and biliary cells as opposed to an immune-mediated mechanism. Appropriate treatment includes either doxycycline, a macrolide, or a fluoroquinolone. Increased regional resistance has been noted for macrolides and a few case reports have shown significant benefits in patients who were treated with fluoroquinolones. In severe cases of hemolytic anemia: warming, glucocorticoids, and plasmapheresis have been utilized. [1][2][3] The question remains whether there is a role for glucocorticoids in treating cholestatic hepatitis in these patients. This would require further study. Our patient demonstrates an unusual hepatic manifestation of a *Mycoplasma pneumoniae* infection, which might otherwise be overlooked by clinicians.

References

- Quioc JJ, Trabut JB, Drouhin F, Malbrunot C, Vallet-Pichard A, Pol S, Denis J. Acute cholestatic hepatitis revealing *Mycoplasma pneumoniae* infection without lung involvement in an adult patient. *Eur J Gastroenterol Hepatol*. 2009 Feb;21(2):220-1. doi: 10.1097/MEG.0b013e32830e28c4. PMID: 19212211.
- Carsten Grüllich, Thomas F. Baumert, Hubert E. Blum. Acute *Mycoplasma pneumoniae* Infection Presenting as Cholestatic Hepatitis. *Journal of Clinical Microbiology*- 514-515- 41-1. 10.1128/JCM.41.1.514-515.2003 [doi]PMID - 12517911
- Shin S, R, Park S, H, Kim J, -H, Ha J, -W, Kim Y, J, Jung S, W, Kim J, B, Lee M, S, Park C, K: Clinical Characteristics of Patients with *Mycoplasma pneumoniae* Related Acute Hepatitis. *Digestion* 2012;86:302-308. doi: 10.1159/000341401