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A rare case of extra-pulmonary manifestation of *Mycoplasma pneumoniae*

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Case: 10-year-old African American male with mild OSA, chronic migraine, GERD who presented with a 5-day history of rash, fever, emesis, dark urine, diarrhea, thrush, decreased oral intake and abdominal pain. On physical, he had jaundice, maculopapular erythematous diffuse rash, erythema of both eyes, with right upper quadrant tenderness but no organomegaly. Blood work revealed ALT 335, AST 175, alkaline phosphatase 482, total bilirubin 3.7. His WBC count was 11.7. Abdominal ultrasound was normal. Hepatitis panel was negative. Chest X-ray showed right lower lobe pneumonia and *Mycoplasma* IgM came back positive. Started on Doxycycline for 10 days. Symptoms subsided, his WBC was trending down and liver enzyme profile markedly improved.

Discussion: *Mycoplasma pneumoniae* is a major cause of respiratory infection in school going children and young adults. Extrapulmonary manifestations usually involve skin, cardiovascular, neurologic and hematologic system, which can be explained by one of three mechanisms:

1. Direct Hit: Bacteria present at the site of inflammation, cytokines induced by the lipoproteins in the bacterial cell membrane responsible for the damage.
2. Indirect Hit: Immune modulation, due to the host antibodies attacking the host cell.
3. Vascular occlusion: Obstruction of the blood flow.

Early onset of hepatitis has been related to the direct hit, whereas late-onset hepatitis is more likely to be an indirect hit. In our patient, since the symptoms started resolving after starting Doxycycline (without steroids) and with his early liver enzyme abnormalities, this looks more like a direct hit causing the extrapulmonary manifestation.

The literature review showed one reported case in Korea of cholestatic hepatitis without pneumonia which is extremely rare. Also, there is *Mycoplasma* associated encephalitis reported in two children after URI infection. Pediatricians should have a high degree of suspicion for extrapulmonary manifestations of *Mycoplasma* and early initiation of appropriate antibiotics is indicated.

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