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Direct Bilirubinemia And Arthralgia as Presenting Features of Anaplasmosis

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Introduction

- Human granulocytic anaplasmosis (HGA) is a tick-borne illness caused by Anaplasma phagocytophilum, and is transmitted by Ixodes scapularis tick.
- Hyperbilirubinemia is an unusual feature of HGA and, if present, is usually indirect. We present a case of HGA who presented with jaundice and non-obstructive direct hyperbilirubinemia.

Case Description

- A 60-year-old male previously healthy presented with a two-day history of yellowish eye discoloration and dark urine. These symptoms were associated with fever, chills, and arthralgias in bilateral hips and elbows. He denied abdominal pain, nausea, vomiting, diarrhea, dizziness, joint swelling, skin rashes, tick bites, or antibiotic use. The patient resides in the New England area and spends significant time outdoors.
- Vital signs were normal, and he was afebrile. Physical examination was remarkable for jaundice and mild tenderness at the elbows with no redness or swelling. The abdominal exam was normal.
- Laboratory tests revealed mild transaminitis, ALP of 310 IU/L, Total bilirubin of 7.5 mg/dl (direct bilirubin 4.8 mg/dl), Hgb 16.1 g/dl, platelets 41 x10exp9/L, reticulocyte index 0.82, LDH 256 IU/L, haptoglobin 197 mg/dl (Table 1), and INR of 1.6. CT scan of the abdomen demonstrated normal liver and biliary tree morphology without evidence of biliary dilation. Given the relatively high prevalence of tick-borne illnesses, the patient was empirically placed on doxycycline.
- The anaplasma Phagocytophilium IgG ab titer was strongly positive (1:320), and acute infection was confirmed with PCR. Ehrlichia PCR and Lyme serology were negative; babesiosis was also ruled out. Two days after starting therapy, the patient's jaundice and all other symptoms resolved.

"Although rare, direct hyperbilirubinemia can be a manifestation of Human granulocytic anaplasmosis."

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Discussion

- We present an unusual case of HGA presenting with direct hyperbilirubinemia and mild transaminitis in the absence of biliary obstruction.
- The pathophysiology of direct hyperbilirubinemia in HGA is not known.
- HGA is prevalent in the Northeast and Upper Midwest of the United States, and it is a common cause of undifferentiated fever in these regions.
- HGA is mostly a mild disease but rarely leads to life-threatening complications, including demyelinating disorders and secondary infections; hence, recognition and early therapy are essential.

Laboratory test	Reference Range & Units	Value
WBC	3.5 - 11.0 x10exp9/L	8.4
Hemoglobin	13.5 - 16.0 G/DL	14.8
Platelets	150 - 400 x10exp9/L	43
Reticulocyte Index		0.82
Haptoglobin	40 - 268 MG/DL	197
LDH	100 - 220 IU/L	256
ALT	6 - 45 IU/L	151
AST	10 - 42 IU/L	93
Alkaline Phosphatase	34 - 104 IU/L	310
Bilirubin, Total	0.2 - 1.3 MG/DL	7.5
Bilirubin, Direct	0.0 - 0.3 MG/DL	4.8
Anaplasma Phagocytophilium PCR		Detected
A. Phagocytophilum Ab, IgG	< 1:80	1:320

Table 1: Summary of initial laboratory tests' results