Case Report

74-year-old white male
- Vague abdominal pain, intermittent fever for 1 week
- Generalized weakness for 2-3 months

ROS: Decreased appetite
Drenching night sweats
Case Report

**PMH:** Hypertension, Type 2 Diabetes Mellitus

**PSH:** Appendectomy

**FH:** Diabetes, Coronary artery disease

**SH:** Former Smoker, No IV drugs / Travel Hx

**Medications:** Lisinopril, Glimepiride, Metformin, Aspirin, Atorvastatin
Physical Exam

Blood pressure 165/95 mmHg
O2 Saturation: 95% at room air

Heart Rate 121
Temperature- 100 F

General: Uncomfortable, restless
HEENT: Scleral icterus
Resp: Clear to auscultation bilaterally
CVS: No murmur, absent JVD, no peripheral edema
Abdomen: Soft, non tender, Spleen palpable
Skin: No lesions
Neurological: Non focal
Differential Diagnosis

Autoimmune
ANA, AMA, ANCA, C3, C4

Infections
HIV, viral hepatitis, EBV, CMV, VDRL, TB, Tick panel, Blood Culture

Malignancy / Hematological disorders
CT Chest Abdomen Pelvis, Hemolysis labs
Hospital Course

- CT scan Abdomen Pelvis
- Labs negative for hemolysis/DIC
- Right inguinal node core needle biopsy
- Blood Culture, Urine Culture negative

Hospital Course

HD#3
HD#4

- Oliguric
- High grade fever with chills
Hospital Course

HD#5

- Worsening transaminitis, lactic acidosis
- Anuric, hemodialysis
- Emperic Antibiotics
Hospital Course

- Intubated, pressors
- Continuous renal replacement therapy
- Biopsy result: **Angioimmunoblastic T-cell Lymphoma**
Hospital Course

- DIC, multiorgan failure

HD#7

- Fibrinogen 62
- Platelts 16
- Peripheral Smear
- Schistocytes
- Triglyceride 690
- Ferritin 11,755
Ferritin

961% increase
Hemophagocytic Lymphohistiocytosis
Hemophagocytosis

NOT a diagnostic requirement

**Incidence:** Newly prevalent or newly recognized?

<table>
<thead>
<tr>
<th>In Pediatric population</th>
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<tbody>
<tr>
<td>Live Births</td>
<td>![1/100,000]</td>
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<tr>
<td>Inpatient admissions</td>
<td>![1/3000]</td>
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- **Orphan Syndrome**
  Not Listed in SEER Database up until 2010
Etiology

Casals et al Lancet 2014; 383: 1503–16
Etiology

Casals et al Lancet 2014; 383: 1503–16
Pathogenesis

Pathogenesis

Cytotoxic T cell

- Activation
- Polarization
- Docking
- Priming
- Fusion

Monocyte/Macrophage/Dendritic cell

- Syntaxin 11

Target cell

Diagnosis

Molecular diagnosis

OR

Diagnostic criteria
Diagnostic Criteria (5/8)

1- Fever
2- Splenomegaly
3- Cytopenias
4- ↑ Triglyceride +/- ↓ Fibrinogen
5- Hemophagocytosis
6- ↓ NK-cell activity
7- Ferritin > 500 g/L
8- Soluble CD25 > 2400 U/mL
Diagnostic Criteria (5/8)

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Highly Elevated levels of Ferritin and Diagnosis of HLH

Management: HLH-2004 Protocol

Survival: Tumor-associated vs. Non-Tumor associated HLH

FIGURE. Kaplan-Meier survival analysis of patients with tumor—associated hemophagocytic lymphohistiocytosis (HLH) vs non-tumor—associated HLH.

Take Home Message:

#Early diagnosis
key to survival

#Evolving Syndrome
Screen early and often

#Elevated Ferritin
Very helpful clue
THANK YOU