THE GREEK CASE

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CAUSE OF ADMISSION

A 27 year-old lady presented to the hospital with a 20-day history of fever (up to 39 °C), night sweats and generalized weakness
The fever was associated with shaking chills, headache and arthralgias and occurred mainly in the evenings

Past Medical History

- chronic hepatitis B

Drugs History : -

Social History :

- No recent travel on abroad, no illicit drug use, no alcohol abuse
- No indoor pets, few cats in the garden, a bird at her mother's home

PHYSICAL EXAMINATION

- Temperature :37.5 °C
- BP: 120/70mmHg
- HR: 98 bpm
- Sat: 98% on room air
- Clinically well
- Unremarkable physical examination
- No lymph nodes, no rash , not enlarged liver or spleen

ADMISSION RESULTS

Blood Test	Results	Reference range
WCC (cells/ mm³)	**12,760**	4,000-10,000
Hct / Hb (%/ g/dl)	38% / 12,8	36-46%/ 12- 16
PLTs (cells/ mm³)	447,000	458,000
Polymorphs	70%	-
Lympho	20%	-
Eosinophils	3%	-
ESR (mm/h)	**78**	< 20
SGOT (IU/L)	35	11- 38
SGPT (IU/L)	41	11-43
ALP (IU/l)	75	23-104
γ- GT (IU/l)	33	8-35
Bilirubin (mg/dl)	0.5	0.1 – 1.2 mg/dl

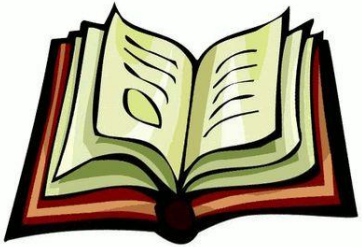
Blood Test	Results	Reference range
Amylase (IU/L)	67 IU/L	30- 125
LDH (mg/ dL**)**	199	122- 214
Urea (mg/ dL**)**	17	10- 50
Creatinine (mg/ dL)	0, 8	0.8 – 1.3
Protein/ Albumin (g/dL)	7.5/ 4.2	6-8 / 3.5- 5
Glu (mg/dL)	104	65 – 110
PT/ INR (sec/ -)	14, 2 / 1, 2	11- 14 / 0.9- 1.2
CRP (mg/dL)	**112**	< 5
Urine microscopy/ culture	Normal	
h. s. Trop. I (pg/dL)	3,9	< 15
Chest X- Ray	Normal	

RESULTS

- **Peripheral blood smear:** leukocytosis, no other findings
- Normal **thyroid function**
- **Blood cultures (x4):** negative
- **ECG:** normal
- **Abdominal ultrasound (x2) :** known liver hemangioma without further findings

On day-4 the patient was still febrile but clinically well …

WHAT SHOULD BE THE NEXT STEP ?



FURTHER TESTS

- **Mantoux test:** negative

- Negative **serology** tests for: hepatitis A and C, EBV, CMV , *Chlamydia, Toxoplasma gondii, Coxiella burnetti, Leismania, Brucella spp., Mycoplasma pneumonia, Legionella pneumophilla, HIV, Salmonella spp.*

IMAGING

- No findings on transthoracic U/S

- **CT chest/abdomen/pelvis**: multiple hypodense areas within the splenic parenchyma, hemangioma in the liver (unchanged size), no findings from the lungs

DIFFERENTIAL DIAGNOSIS OF MULTIFOCAL SPLENIC LESIONS

- **Lymphoproliferative disorders** ? Lymphoma

- **Inflitrative process** ? Sarcoidosis ? Rheumatological disease

- **Infectious causes - abscesses**
  - ?Tuberculosis
  - ?Fungal abscesses
  - ?Pyogenous abscess

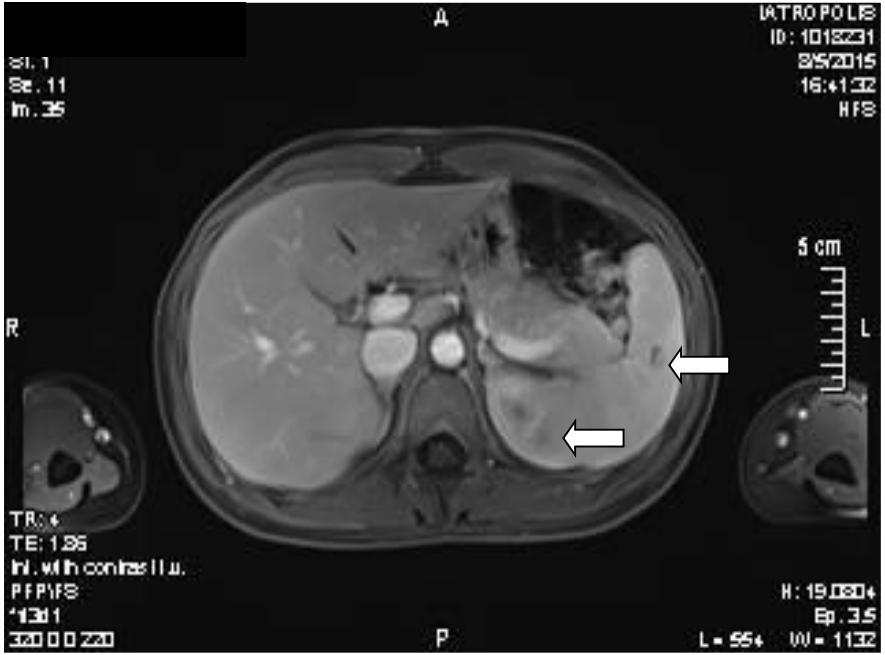
- **Septic emboli** from culture negative endocarditis

FURTHER TESTS

- **MRI abdomen:**
three splenic lesions
in consistence with abscesses
(max size 140mm)

- Negative
autoimmune profile , RF (–)

- **Interferon-Gamma Release Assays (IGRAs):**
negative



DIAGNOSIS & TREATMENT

- **Positive serology for *Bartonella hensellae*** (IgG 1: 2048, normal <1:32 ; IgM 1: 80, normal < 1:10) (by indirect fluorescent antibody analysis)

- Negative for *B. quintana*

- **Diagnosis : Isolated splenic Cat- scratch disease**

- **Treatment:**

-oral azithromycin 500mg day 1 and then 250 mg OD for 5 days AND Rifampicin 600mg/ day for15 days followed by
- Doxycycline 200mg BD for 2 months

OUTCOME

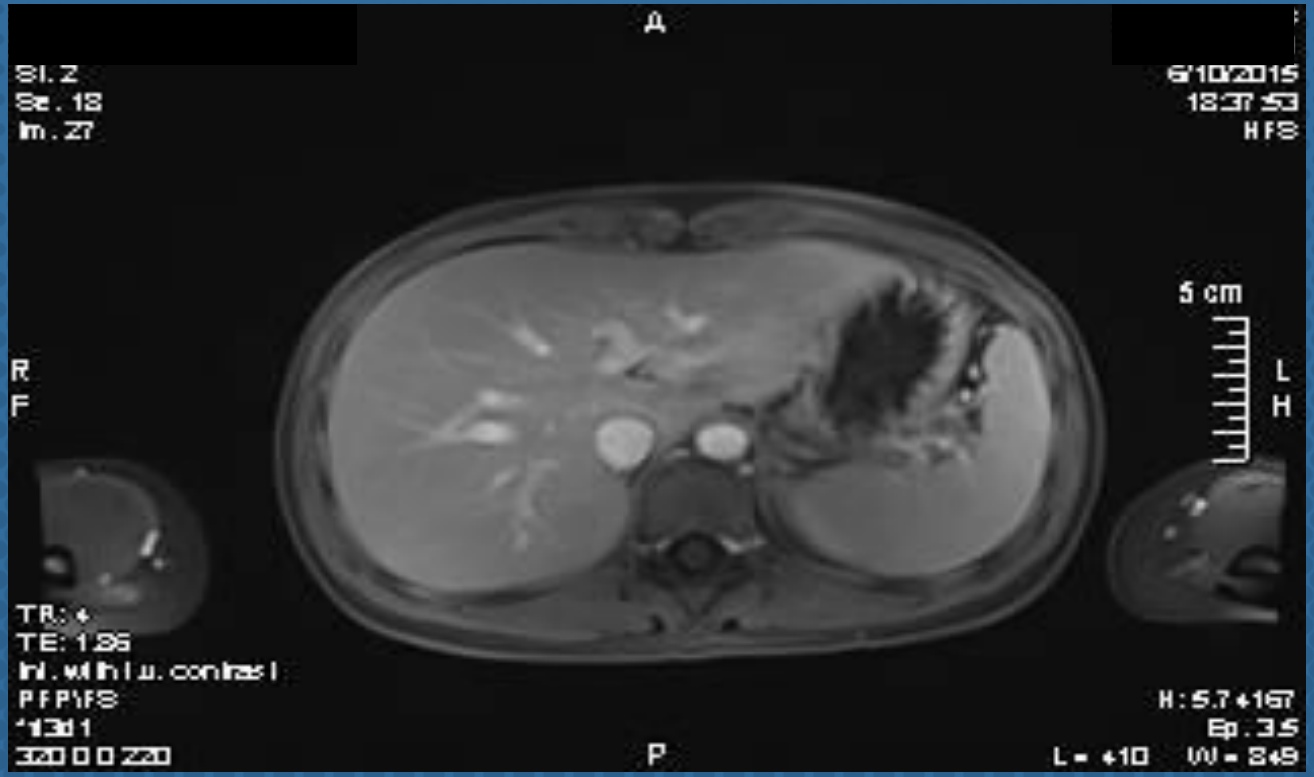
✓ Fever resolved within 3 days of treatment

✓ CRP normalized within 40 days

✓Repeat MRI (week 4) : complete resolution of one splenic lesion and size reduction in the rest of them

✓ Repeat MRI (week 10) : complete resolution of all splenic lesions

MRI POST- TREATMENT



CAT- SCRATCH DISEASE (CSD)

- ***Bartonella henselae*,** Gram (-) bacillus, >22 *Bartonella* spp. have been described
- Transmitted to humans by cats, especially kittens – through scratches/ bites
- Clinical spectrum determined by **immune status** of infected human
- Acute or chronic infections, vascular proliferation or granulomatous nonangiogenic inflammation
- **85 – 90%** localized cutaneous disorders and self- limited lymphadenitis
- **Atypical 5- 15%** - any organ can be involved, isolated splenic involvement is extremely rare

1. Chomel et al. Emerg Infect Dis, 2006, 2. Angelakis et al Int J Antimicrob Agents, 2014

CAT- SCRATCH DISEASE (CSD)

❑ **No definitive test for diagnosis** – Difficult to culture

❑ **<u>Diagnostic Criteria</u> (≥ 3/ 4 criteria)**

- **1**. cat or flea contact regardless of the presence of an inoculation sitelesion
- **2**. negative serology for other causes of adenopathy; sterile pus aspirated from a node; positive *Bartonella* PCR assay and/or liver or spleen lesions seen on CT scan
- **3**. positive serology for *B. henselae* with IgG titre ≥ 1: 64,
- **4**. biopsy showing granulomatous formation

❑ **<u>Treatment of disseminated CSD</u>**

Still empirical based on case reports and expert opinion !!

- Doxycycline 100mg po/ IV BD and Rifampicin 300mg po BD (American Society of Microbiology June 2004)
- **Unknown duration** – guided by clinical response

1. Margilath et al., Curr Infect Dis Rep, 2000, 2.Rolain et al., Antimicrob Agents Chemother, 2004

TAKE- HOME MESSAGES

- CSD (*B. henselae*) is commonly presented as cutaneous disorders and local lymphadenopathy **BUT** in a minority of patients can affect any organ

- Isolated spleen involvement is a rare manifestation of CSD – findings can be missed in U/S

- CSD should be included in the **differential diagnosis** of prolonged fever and solitary/ multiple splenic lesions (even without lymphadenopathy)

- High suspicion index in patients with a history of **contact with cats** and serology tests are the key factors of prompt diagnosis without the need of invasive methods (spleen biopsy/ laparotomy)

- The **treatment of disseminated CSD is still empirical** and the duration depends on clinical response

THANK YOU !!!