Crossing the Border

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History and Physical Examination

- Woman, 44 years old, referred by GP
- Fever (up to 39°C) since 5 days, abdominal discomfort and general malaise for the last 10 days
- Medication: IUD
- Temperature 38,4˚ C
- Epigastric tenderness, no organomegaly or masses

Contact and Travel History

- Life style
  - No smoking
  - no ethylabusus
  - Receptionist
  - Pets: cat
  - Neighbour: radiologist
- Travel history
  - Recently: Canary Islands
  - 2004: Cuba
  - 2005: Egypt
- Family history
  - Father: pancreatic cancer
  - 2 sisters: breast cancer

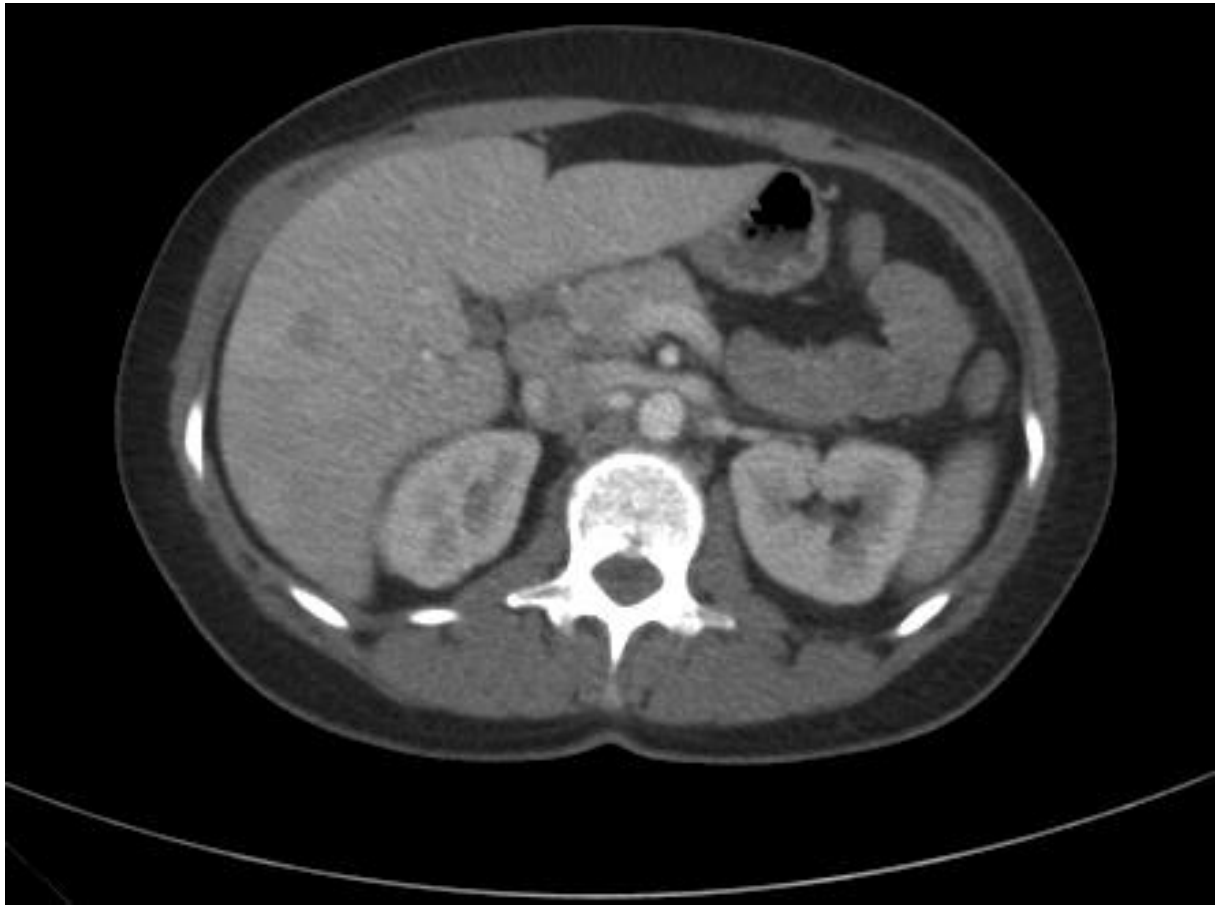
Biochemistry

Hb	12.1 g/dL	Glucose	136 mg/dL
Htc	36%	Ureum	17 mg/dL
WCC	$9.6x10^3/mm^3$	Creatinin	0.67 mg/dL
Neutrophils	75.7 %	Sodium	143 mEq/L
Platelets	$222x10^3/mm^3$	Potassium	3.8 mEq/L
CRP	138 mg/L (ref: <5)		
ESR	118 mm/h (ref: 0-20)		
CK	40 U/L	AF	110 U/L (ref: 34-76)
LDH	496 U/L	GGT	54 U/L (ref: 10-37)
AST	25 U/L	Amylase	41 U/L
ALT	21 U/L	Bilirubin	0.29 mg/dL
INR	1.2		

Imaging

- Chest X-ray
- Abdominal ultrasound
- Abdominal CT scan

Imaging



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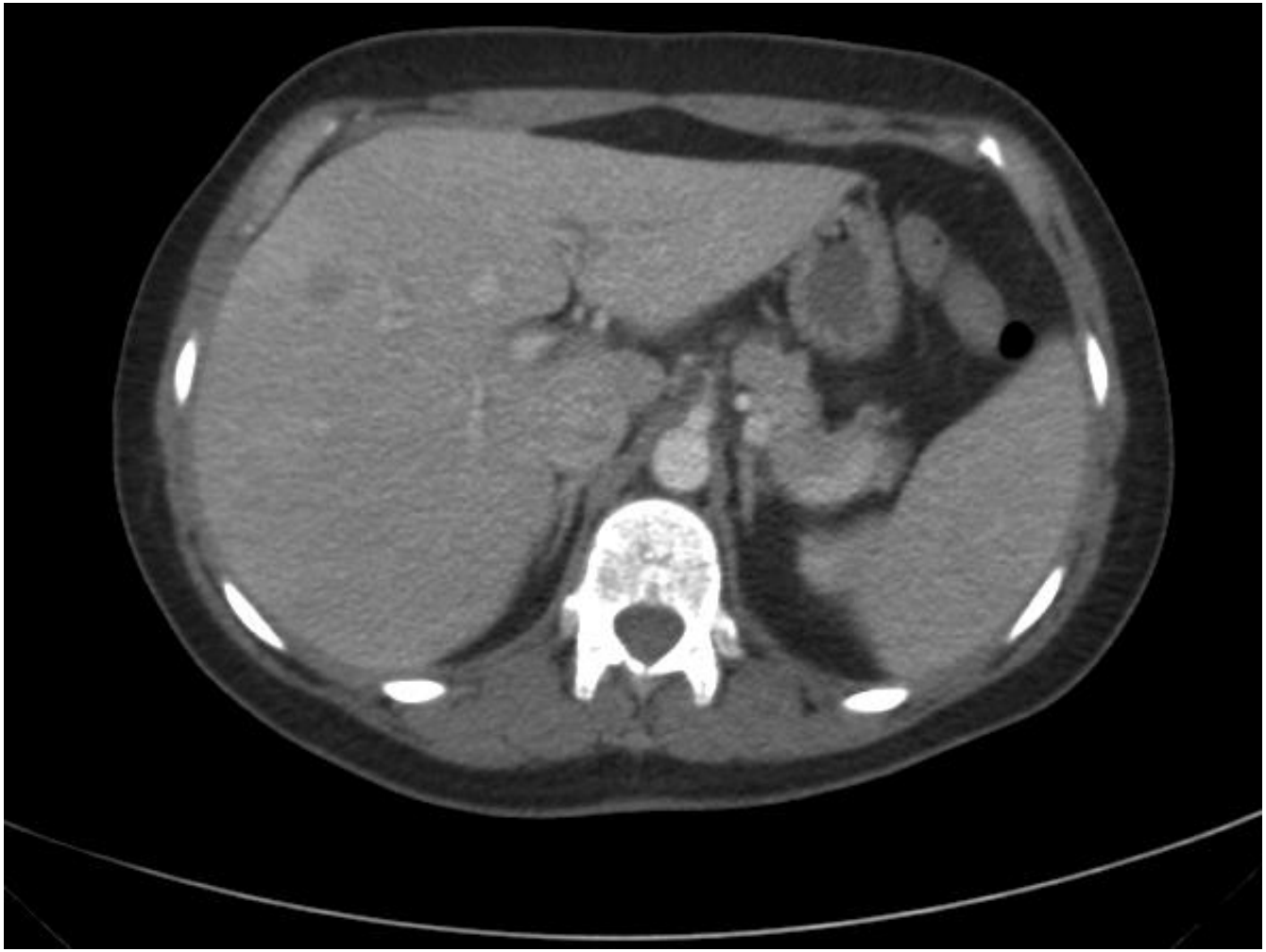

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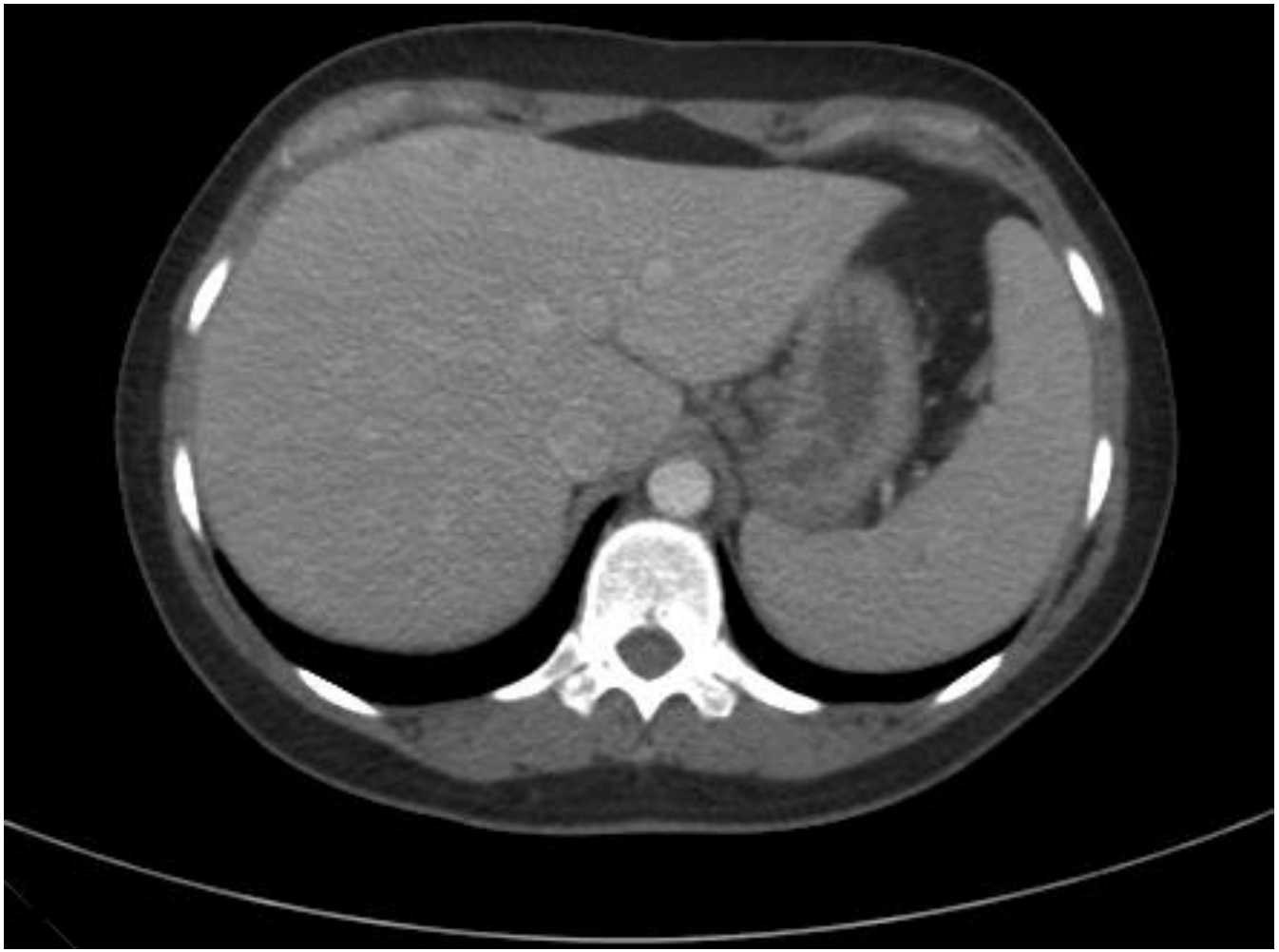


What would be your next step ?

1. Empiric antibiotics
2. Breast MRI (cfr familial history)
3. PET/CT scan
4. CT guided biopsy of the liver
5. Transthoracic Echocardiography
6. Brain biopsy and chemotherapy

Day 1 and 2 of admission

Infection?

- Blood cultures: negative
- Toxoplasmosis: IgG positive, IgM negative
- Transthoracic Echocardiography:
  - No vegetations
  - Slight MR, TR and AR

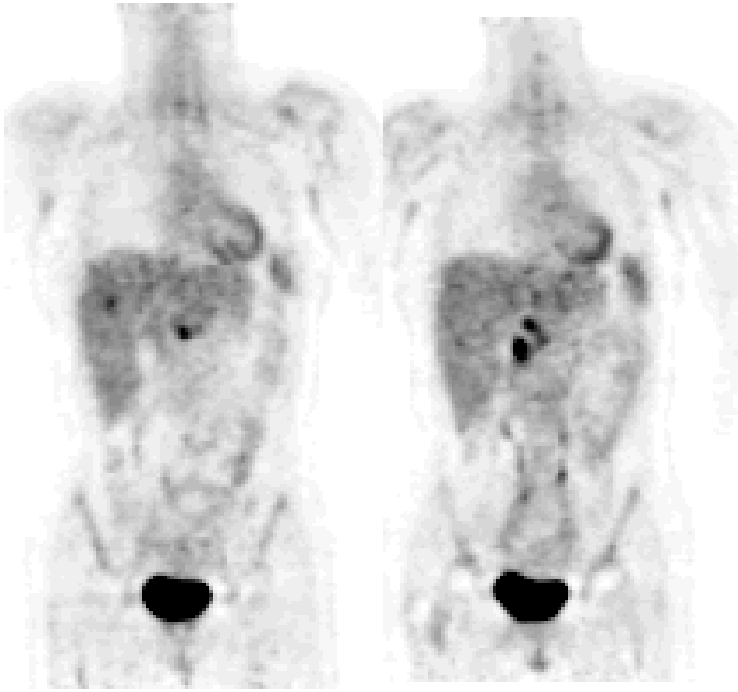
Day 1 and 2 of admission

Malignancy?

- Breast MRI:
  - Suspicious lesion left breast

- PET scan: Increased FDG tracer uptake
  - Focus in right liver lobe
  - Lymph nodes: along stomac, liver hilus
  - Left inguinal adenopathy

-> CT guided liver biopsy



Day 3 of admission

- Echo/mammography: normal

- Results of liver biopsy
  - Pathology:
    - Infiltration of bile ductuli by lymphocytes, plasma cells and neutrophils: findings are consistent with cholangitis
    - No malignancy
  - Microbiology:
    - Direct gram staining: not possible
    - Aerobic and anaerobic culture negative
    - Ziehl-Neelsen: negative; culture for Mycobacteria pending

Differential Diagnosis

- 44-year-old woman with fever and abdominal dyscomfort

- Differential diagnosis:
  - Liver abscesses
  - Primary sclerosing cholangitis with bacterial surinfection
  - Subacute bacterial endocarditis
  - Malignancy

Day 3 of admission

Primary sclerosing cholangitis complicated by infection?

- MR cholangiopancreatography (MRCP)
- Auto-immune screening

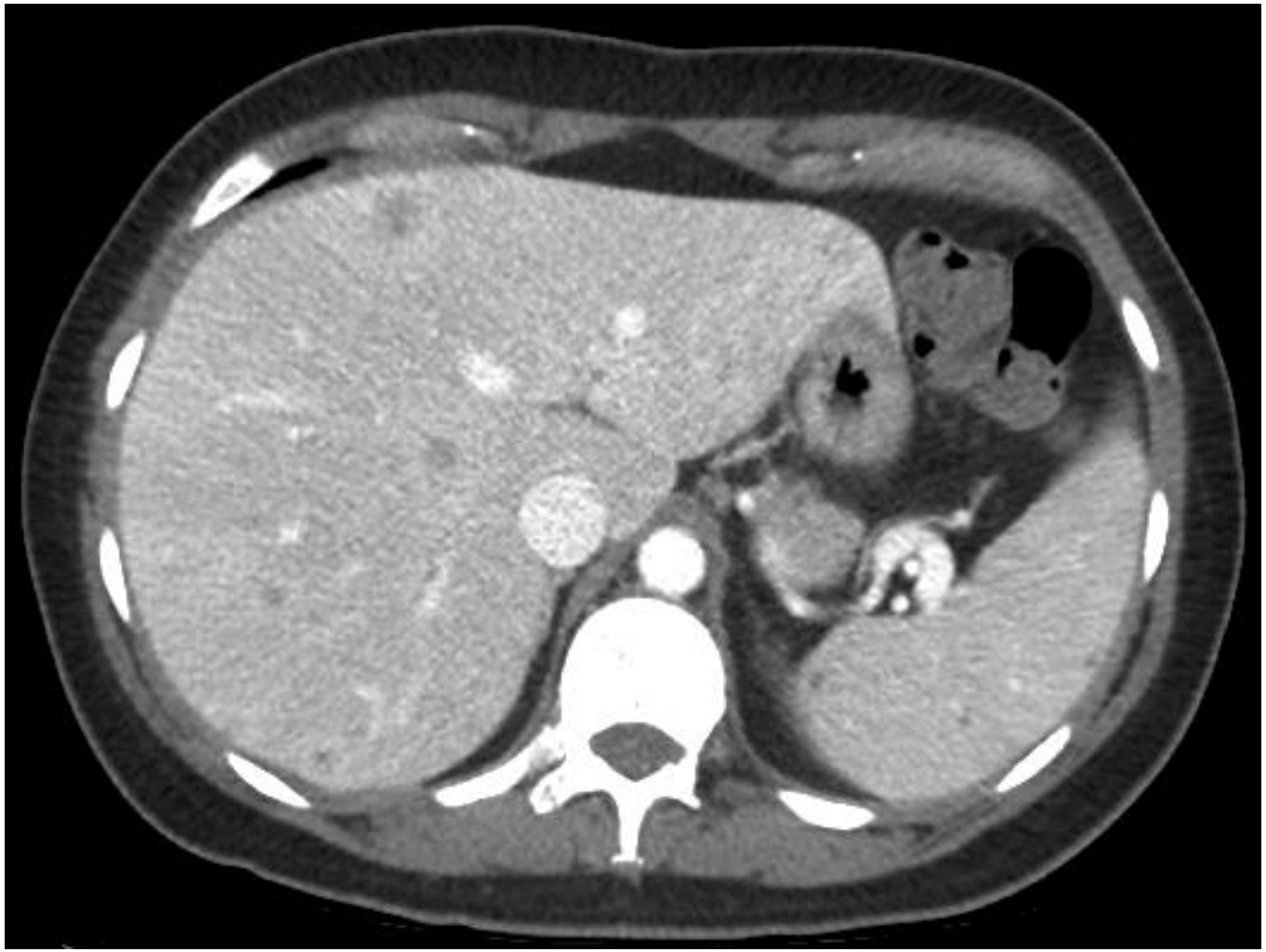
Clinical evolution

- Empiric therapy because of persisting fever
  IV Amoxicillin clavulanate 1g QID

- Clinical and biochemical improvement
  - Afebrile 3 days after start of antibiotics
  - Progressive CRP decline

- Clinical deterioration 1 week after discharge
  Patient still on amoxicillin clavulanate
  Recurrence of fever, malaise, backache
  Resulting in new admission

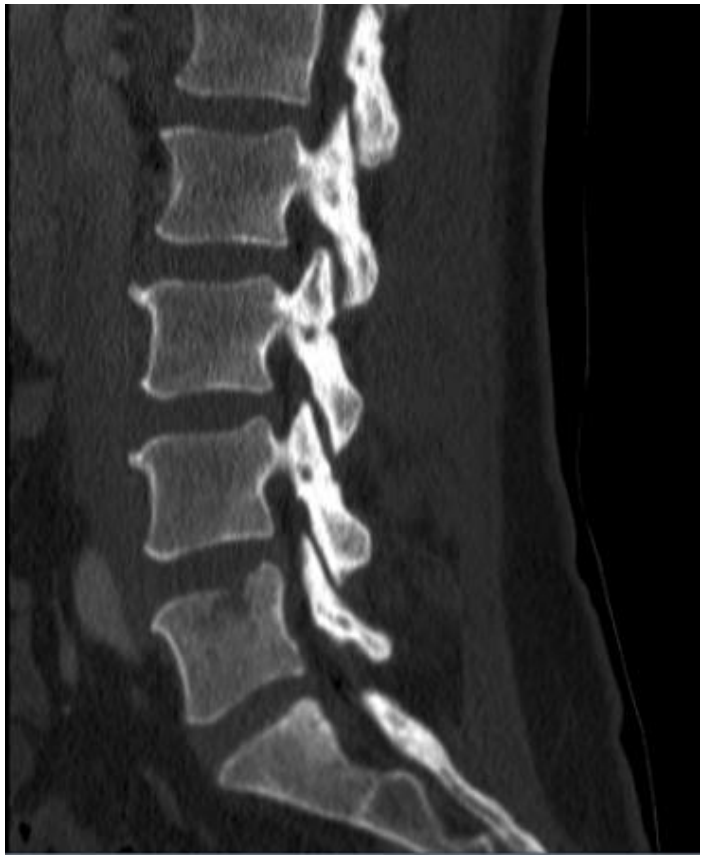
Clinical Deterioration



Spondylodiscitis?

- CT lumbar spine
  - L5:
    - superior endplate erosion
    - irregular osteolytic lesion
  - Suspicion of spondylodiscitis
- Bone Scintigraphy
  - Increased tracer uptake at vertebral body L3, L5, right 4th rib

-> culture-negative endocarditis?



Culture-negative Endocarditis

- Transesophageal echocardiography
- Bacterial serology

-> second liver biopsy

Additional exams

- Second liver biopsy
  - Infiltration of bile ductuli with neutrophils and lymphocytes: cholangitis or abscesses
  - No arguments for lymphoma
  - 1 granuloma
- MRI Lumbar spine
  - Intraspongious discal hernia with surrounding osteochondrose

Evolution

- Empirical therapy: IV cefepime, vancomycin, gentamicin
  - Afebrile 2 days after start of antibiotics
  - Progressive CRP decline
  - Discharge with clindamycin and ciprofloxacin po
- Two weeks after discharge
  - Clinically
    - Feels progressively better and remains apyretic
    - Some pain at right hypochondrium
  - Biochemically
    - CRP almost normal; ESR progressively declining
  - CT abdomen
    - Increase in size and number of liver lesions

Evolution

- Two weeks after discharge
  - Bartonella serology (drawn 6 weeks earlier)
    - IgM: 1/100 IgG: >1/1280
  - Sample drawn 10 weeks earlier (a posteriori)
    - IgM: 1/100 IgG: 1/320

Diagnosis and Therapy

- Multiple liver and spleen abscesses by *Bartonella henselae*

  Cat Scratch disease

- Rifampicin 300 mg BID

  Doxycyclin 100 mg BID

- Follow-up

  Resolution of symptoms and lesions on imaging

Take Home Messages

- Differential diagnosis of hypodense liver lesions is broad:

  including malignancy, infectious diseases and autoimmune disease.

- (Mis)leading diagnostic investigations:

  Breastcancer: Ultrasound – MRI
  Spondylodiscitis: CT – MRI
  Liver biopsy: cholangitis

Take Home Messages

- Atypical presentation of *B. henselae*

- Diagnosis of *B. henselae*:

  clinical suspicion with positive serology

Thank you for your attention