Patient data

- Female
- Birth date: 民國 66/09/17
- 已婚
- 學歷: 中學

Chief complain

- Nausea, diarrhea and flank soreness and with bilateral legs swelling

Present illness

- This patient received C/S due to difficult dilivery at 詹宜宏婦產科 on 2005/06/12
- 2 wks ago , she started to have dull abdominal pain but didn’t pay much attention to it.
- 7/18 she complained nausea, diarrhea & flank soreness
- Bilateral legs swelling and difficult to raise up
- No Hoffman sign and calf muscle tenderness
- Came to ER for help

Family history

- Not contributory

Personal history

- Smoking: 0.5~1 PPD for 12 years
- Alcohol: nil
- Food allergy: nil
- Drug allergy: nil
- Betel nut eating: nil
- Oral contraceptive: nil

Past history

- Surgical history: C/S on 2005.06.12
- Medical history: nil

Review of system

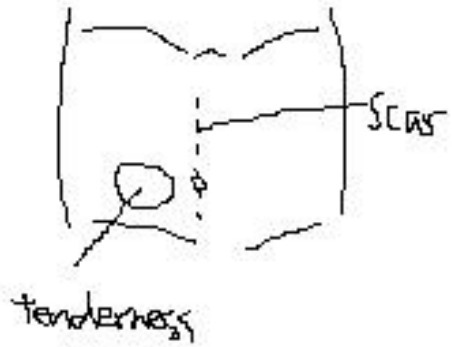
- General appearance: weakness
- HEENT: normal
- Respiratory system: cough(+), sputum(-), dyspnea(-)
- Cardiovascular: no chest pain, PND, palpitation, intermittent claudication
- GI: nausea (+), abd. pain (+), vomiting (-)
- GU: no hematuria, urgency and frequency
- Musculoskeletal: back pain(+) legs swelling(+) no joint pain and stiffness

Physical examination(1)

- Weight: 65KG, Height: 163cm,GCS: E4V5M6
- TPR: 37.4℃/82/26 B.P. : 96/58 mmHg
- General appearance: acute ill looking
- Eye: free movable
  - Pupil: light reflex: prompt(+) size: isocoria 2mm/2mm
  - Conjunctiva: pale, sclera: icteric(-)
- Throat: no tonsil enlargement
- Mouth: no rash and ulcer
- Neck: no JVE, mass, bruit, lymphadenopathy

Physical examination(2)

- Chest: symmetric expansion, breathing sound clear
- Heart: regular heart beat, no murmur
- Abdomen: flat, soft, mass(-), scar(+), murphy's sign(-), rebound pain(-), tenderness(+)
- Extremities: legs swelling(+), no cyanosis, pitting edema,

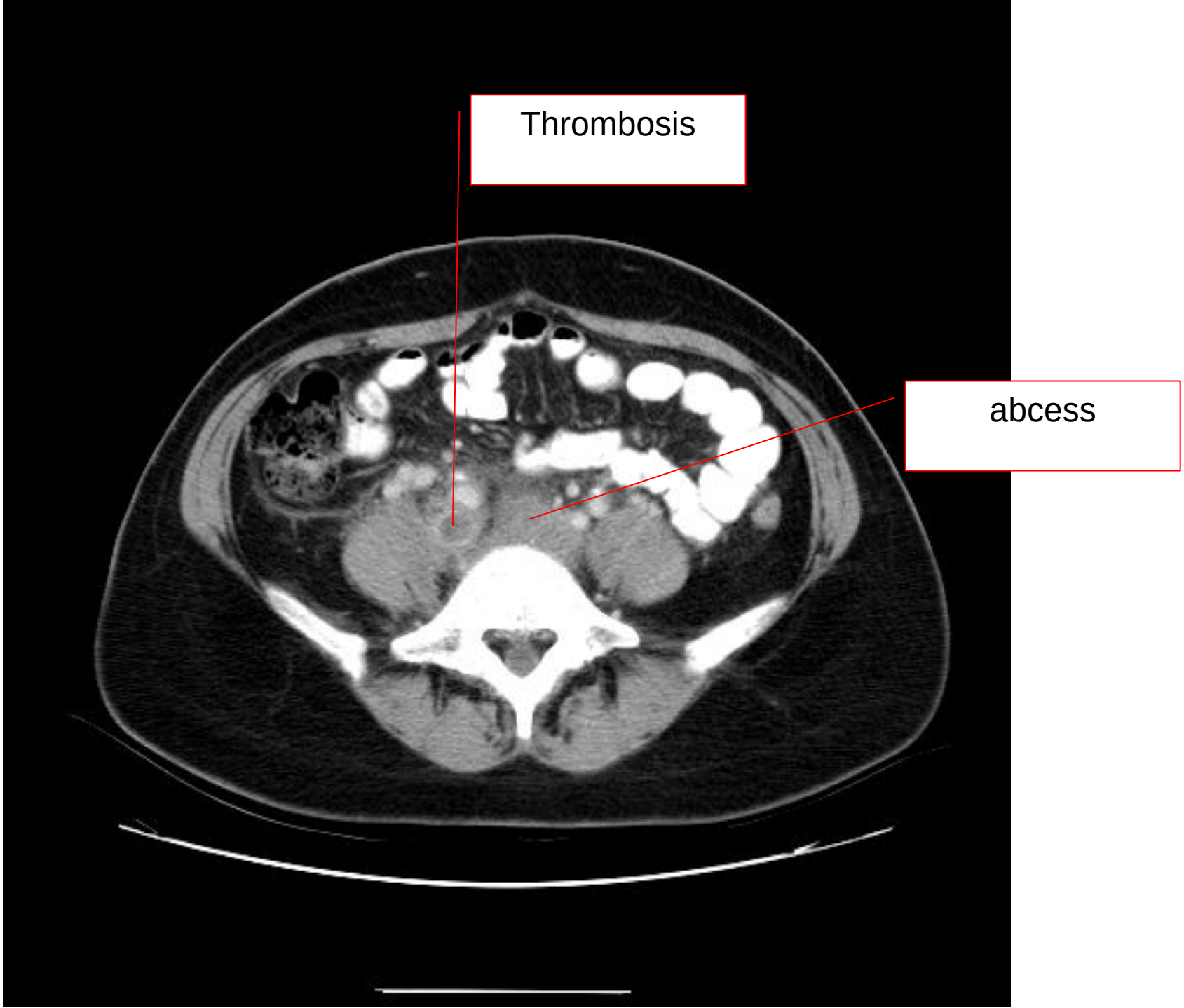


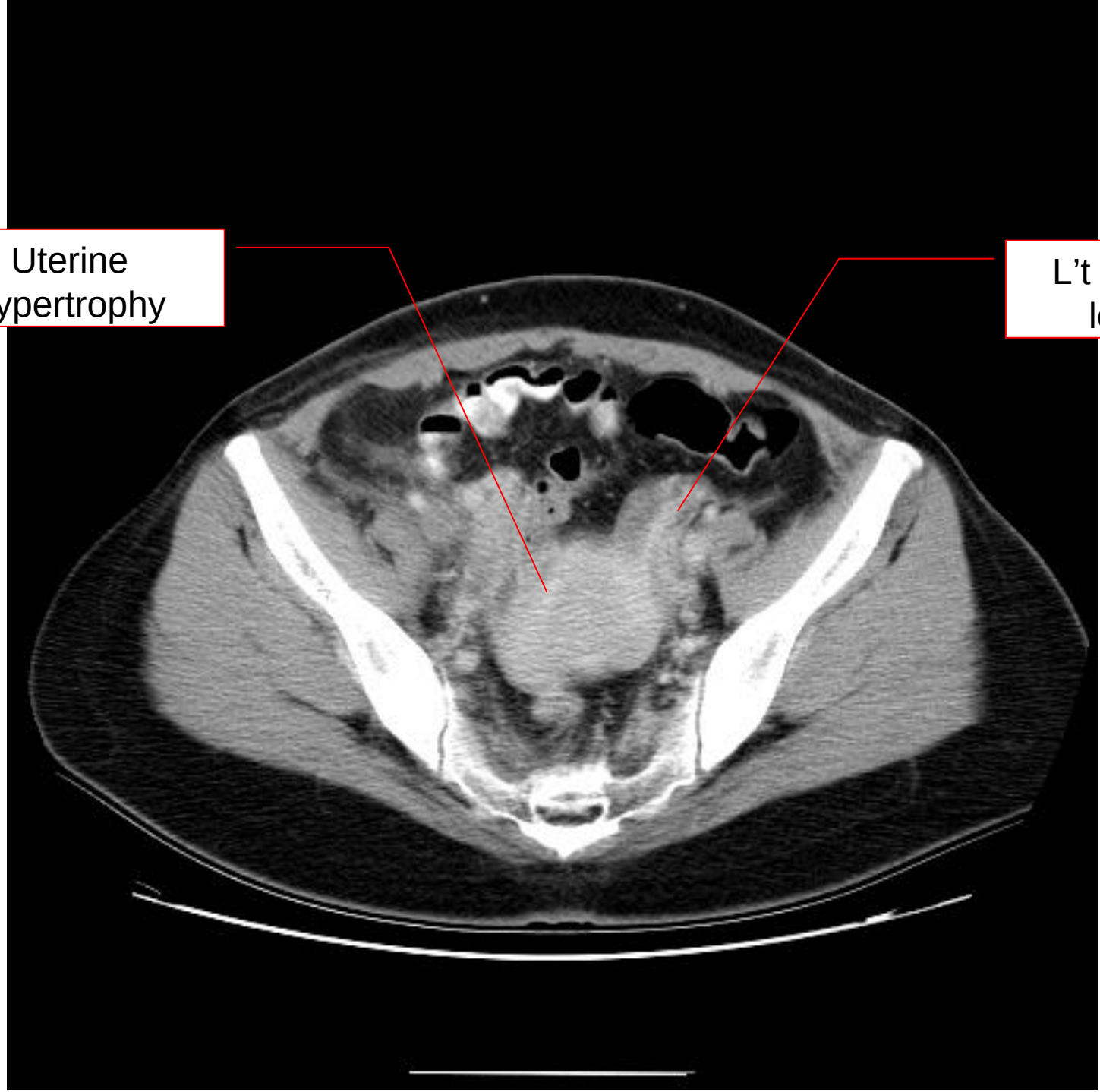
Lab data

- CRP: 22.5 mg/dL
- WBC: 10490 uL
- Stool OB (-)

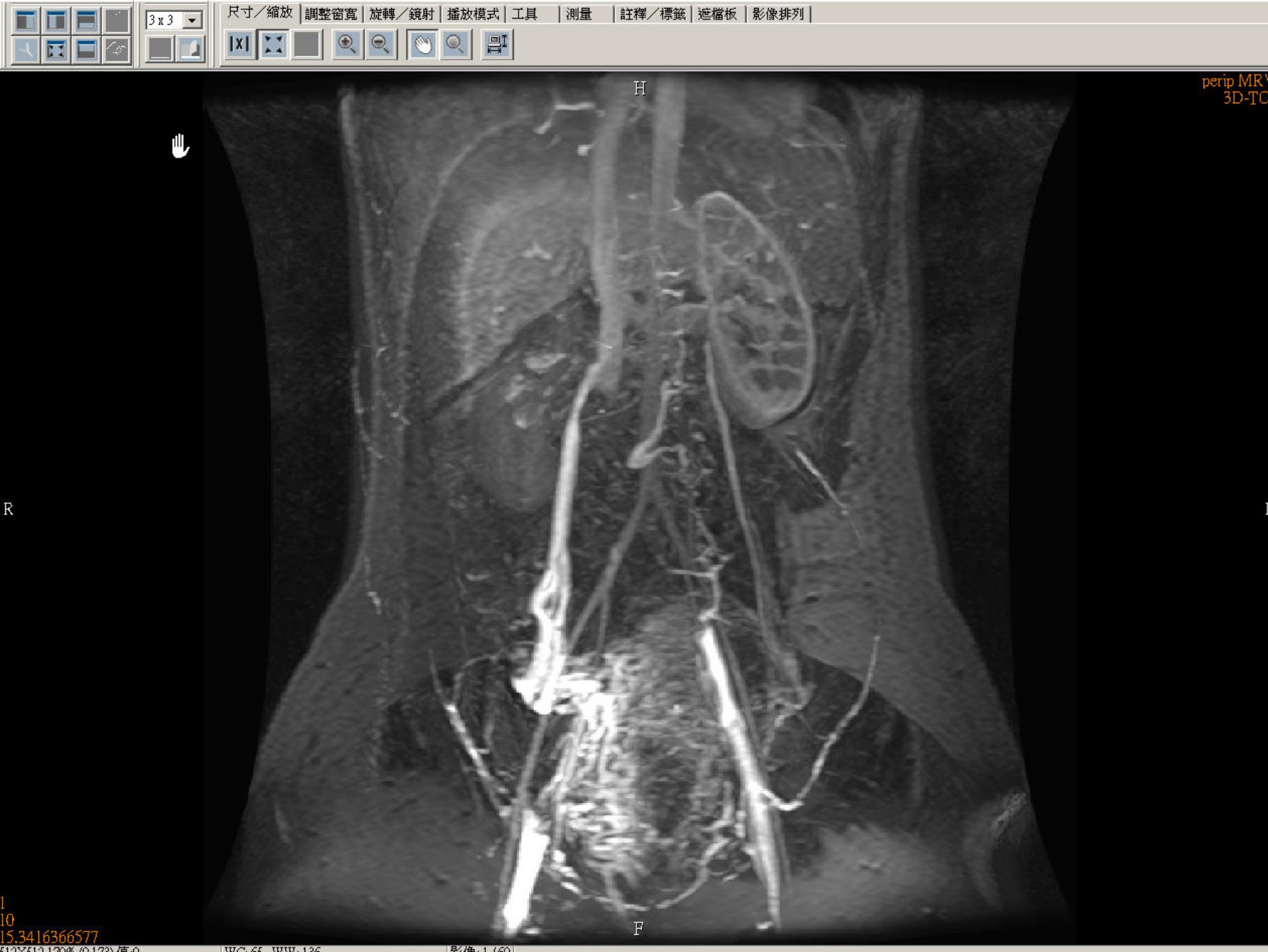
Imaging studies

- CT
  - IVC and Rt iliac veinous thormbosis
  - R/O Intraabdominal abscess (CRP:22.5 mg/dL, fever)
  - Lt ovarian lesion and uterine hypertrophy (sonography suggest)
  - Suggest correlate with lab. data and clinical picture.


Thrombosis
abcess


Uterine hypertrophy
L’t ovarian lesion

- MRI
  - Deep vein thrombosis with segmental venous occlusions, Rt ext. iliac v. and IVC bifurcation to Lt ext. iliac v.
  - Partial thrombosis infra-renal IVC and Rt common iliac v.
  - Multifocal stenosis of tributaries of bil. ant. tibial v. Lt post. tibial v. and veins at dorsal and plantar aspect of Lt foot


3 x 3
尺寸／縮放
調整窗寬
旋轉／鏡射
播放模式
工具
測量
註釋／標籤
遮檔板
影像排列
H
R
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perip MR
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15.3416366577


3 x 3
尺寸／縮放
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遮檔板
影像排列
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3D-MID
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11
15.3416366577
512X512 170% (3,308) 值:0
WC: 110 , WW: 220
影像: 1 / 61


3 x 3
尺寸／縮放
調整窗寬
旋轉／鏡射
播放模式
工具
測量
註釋／標籤
遮檔板
影像排列
H
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perip MRV
3D-BOT
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12
-8.0188064575
512X512 170% (10,290) 值:0
WC: 271 , WW: 543
影像: 1 /1

perip MRV
Screen Save

Impression

- IVC thrombosis

Plan

- Medication
  - Heparin 20000U/500cc NS IV run 30 cc/hr then 25000U/250cc NS IV run 12 cc/hr
  - Cleocin 900 mg IVD q6h
  - Gentamycin 80mg IVD q12h
  - Gaster 1 vial IV q12h
- Management
  - NPO except water
  - IVF: Taita no.5 run 60 cc/hr
  - Check PT/PTT, CBC/DC, CRP, ANA, antiphospholipid Ab, C3, C4, FDP, fibrinogen

Discussion

- What are the etiology of IVC thrombosis?
  - Tumor: most familiar is RCC, other GU tumor such as seminomas and teratomas. Less common: retroperitoneal leiomyosarcoma, adrenal cortical carcinoma, and renal angiomyolipoma
  - Compression: such as hepatic abscess, PKD, pseudocyst of pancreas, less common aneurysms of abdomen aorta and pancreatitis
  - Trauma: such as posas hematoma, combines limbs of Virchow triad (stasis, vessel injury, hypercoagulability)

- Coagulation: hypercoagulability patients with nephrotic syndorme (massive protein loss & diminished level of antithrombin III)

- Iatrogenic: hepatic transplantation, dialysis access, femoral venous catheters, femoral venous catheters, vena caval filters

- Other: anomalies of the IVC, pregnancy, oral contraceptives, Budd-Chiari syndrome

- What are the signs and symptoms of IVC thrombosis?
  - Classic presentation bilateral lower extremity edema (+) with dilated, visible superficial abdominal veins
  - 60% of patients did not have leg edema
  - Thrombosis at level of the renal veins raises the possibility of RCC. More commonly, suggests nephrotic syndrome.
  - Thrombosis at the juxta-renal level can affect renal function

- What are the Lab studies for IVC thrombosis?
  - Assessing clotting and fibrinolytic systems may be helpful.
  - Others such as protein C, protein S, antithrombin III, and anticardiolipin studies may all be helpful

What are the imaging studies for IVC thrombosis?

- Contrast venography
  - Standard for diagnosis of DVT.
  - Two access sites (extent of thrombus in situations of IVC occlusion by clot)
  - Pros include (1) limited false-positive study results
    (2) access for therapy
    (3) access for pulmonary angiography
  - Cons include (1) invasiveness
    (2) maybe more than one puncture
    (3) possible post-procedure DVT.

- Duplex scanning
  - Pros include (1) noninvasiveness
    (2) portability
    (3) efficacy in helping diagnose at the femoral level and distal iliac level
    (4) visualizing dilated collaterals
    (5) more accurate than venography.
  - Cons include (1) anatomic limitations
    (2) less reliable diagnosis within the abdomen
    (3) lost respiratory phasicity above the renal v.

- CT scanning
  - CT scans are primary process for diagnosis
  - IV contrast materials is typically required.
  - False-positive sometimes occur.
  - Pseudothrombosis, particularly of the infrarenal IVC:
    - result from the variable amounts of contrast in the cava above and below the renal veins.
    - also result from collapse of the IVC at the diaphragm while patients are supine.

- MRI
  - Multiple planes and for estimation of the thrombus age.
  - Can generate images similar to those seen with venography.
  - Pros include (1) noninvasiveness
    (2) lack of any ionizing radiation
    (3) determining proximal extent of thrombosis
  - Cons include (1) cost
    (2) turbulent flow may read falsely as clot

What are the treatment for IVC thrombosis?

- Medical treatment:
  - Anticoagulation: Heparin and Warfarin
  - Thrombolytic agent: Urokinase, tPA, and streptokinase
    - require concurrent heparin therapy (except for tPA because of bleeding complications)
    - 25% risk of pulmonary embolism during therapy

- Surgical treatment:
  - Ligation
  - Filters: relatively non-invasive
  - Thrombectomy: mortality rate 2%; morbidity rate 30%
  - Endovascular intervention:
    (1) percutaneous balloon angioplasty
    (2) Wall stents
    (3) Z stents

Additional information

- Risk factor for IVC thrombosis during pregnancy
  - Antinuclear antibody
  - Anticardiolipin antibody
  - Abruptio placenta
  - Pregnancy-induced hypertension
  - Diabetes

D/D of an intra-luminal mass in the IVC

- Leiomyosarcoma
- Angiosarcoma
- Tumor thrombus
- Bland thrombus

Leiomyosarcoma