

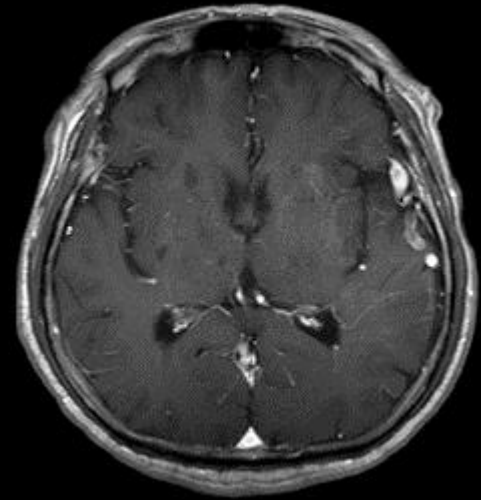
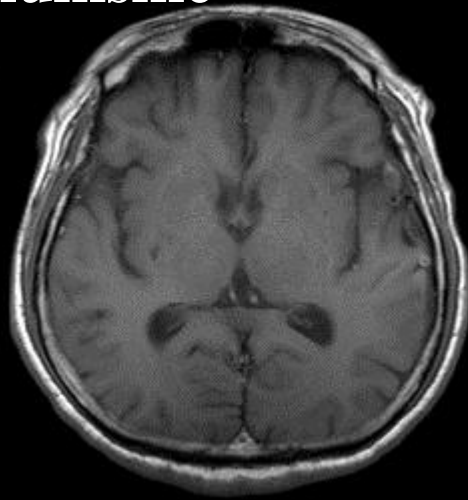
2013年02月22日
中華民國放射線醫學會
住院醫師閱片測驗-答案

出題醫院
台中榮民總醫院放射線部

Q01-1

性別：Male 年齡：62 year-old

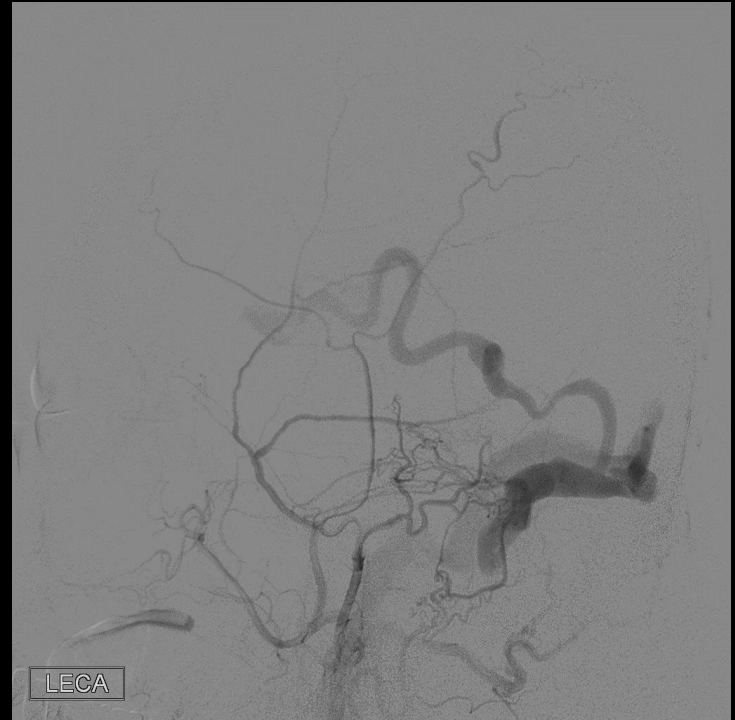
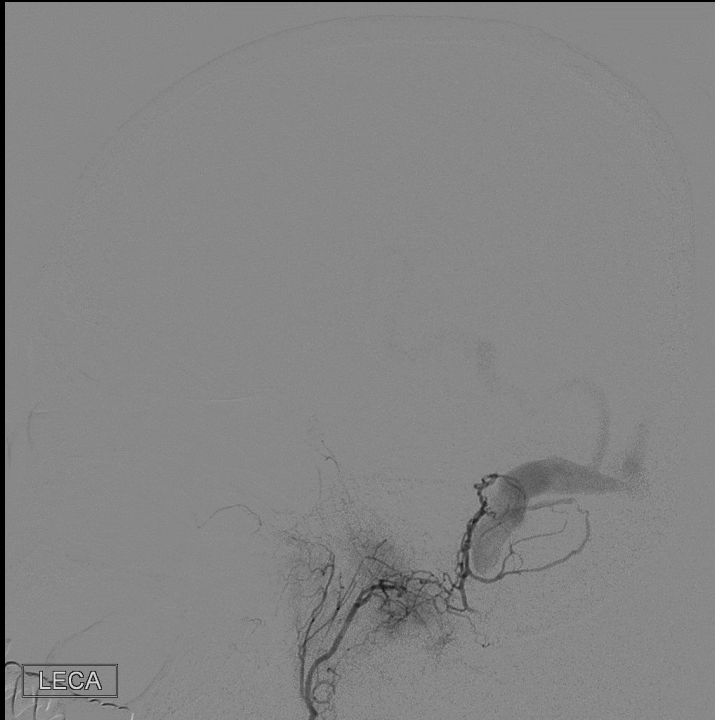
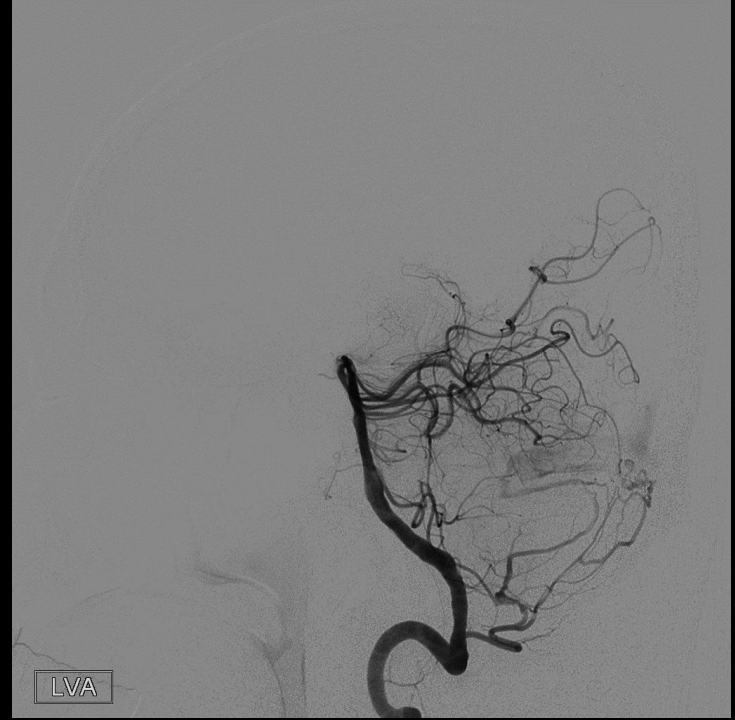
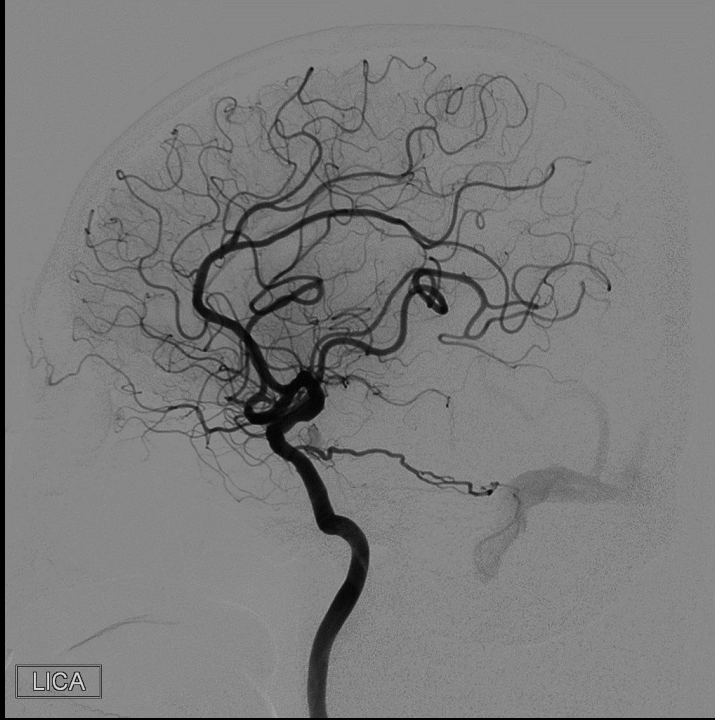
主訴或重要病史或物理檢查：Sudden right side limbs clumsy



本題有三張投影片，第一張

Q01-2

本題有三張投影片，第二張



Q01-3

本題有三張投影片，第三張



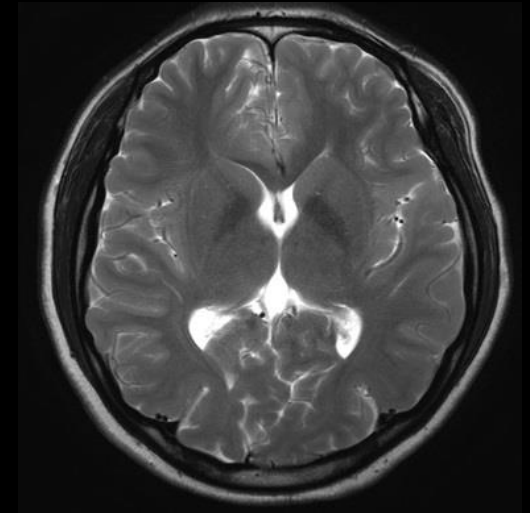
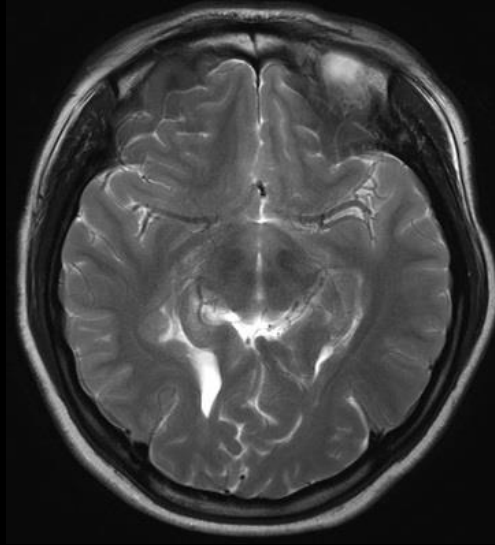
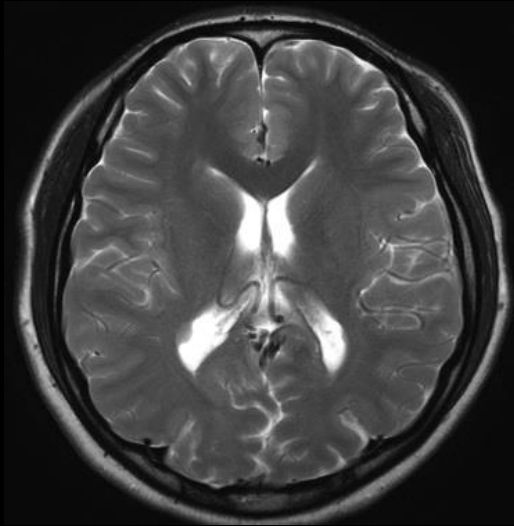
ANS: Left type type IIA +IIB dural
AV fistula, s/p ONYX
embolization with
successful obliteration of
the fistula.

Q02-1

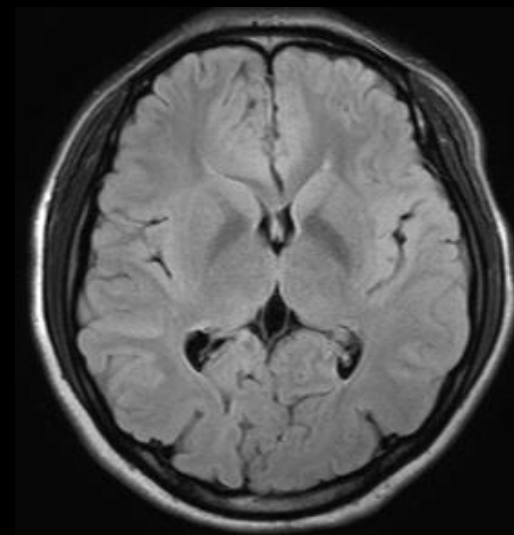
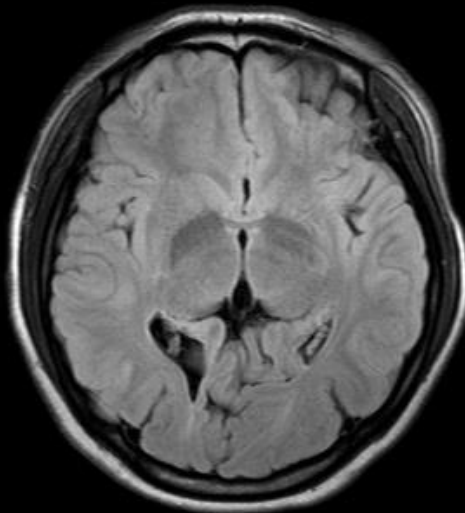
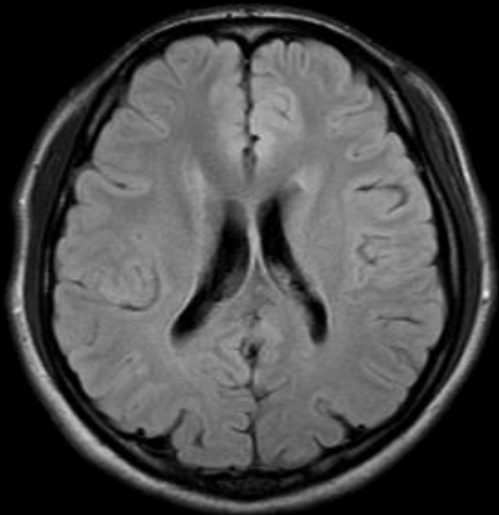
性別：female

年齡：26

主訴或重要病史或物理檢查：Frequent seizure attack

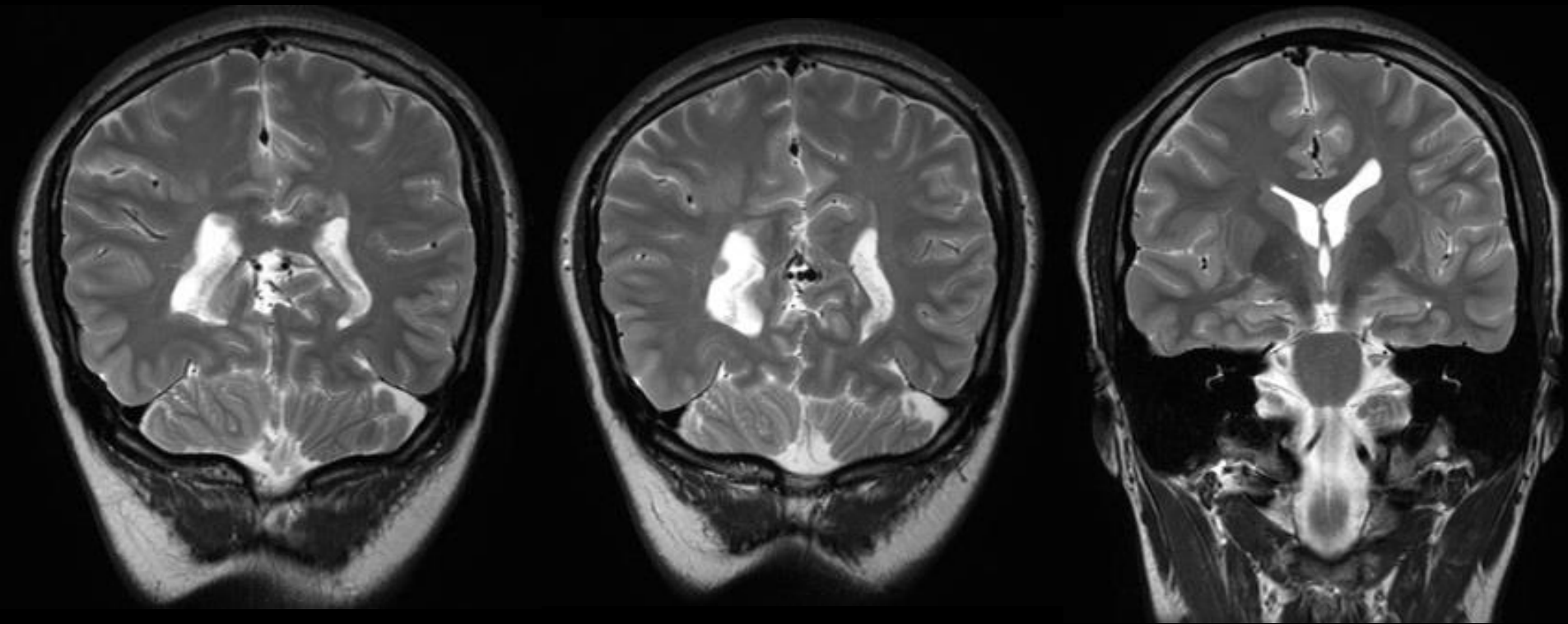


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Q02-2

本題有二張投影片，第二張



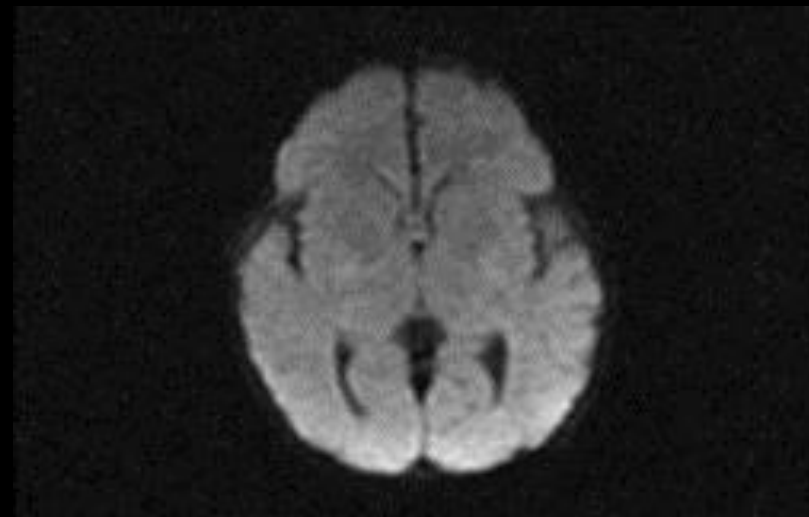
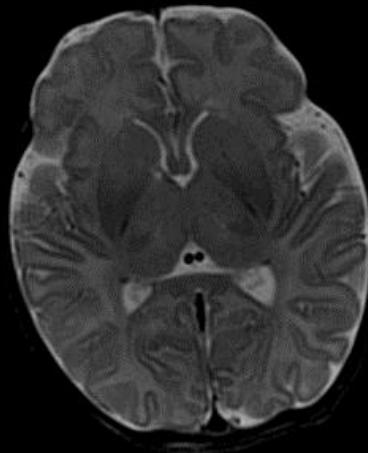
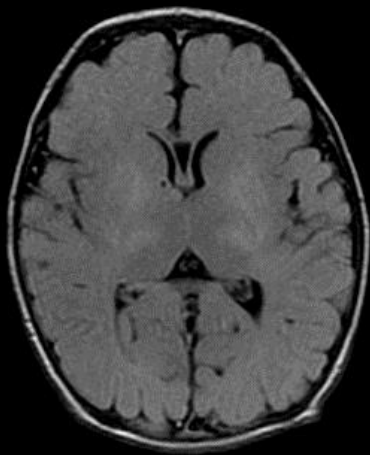
ANS: Heterotopic gray matter and callosal dysgenesis

Q03

性別：Female

年齡：5 day-old, Gestation period 40+4 weeks

主訴或重要病史或物理檢查：Much oral meconium, general cyanosis and apnea after birth



ANS: Hypoxic ischemic
encephalopathy, full-term

Hypoxic ischemic encephalopathy

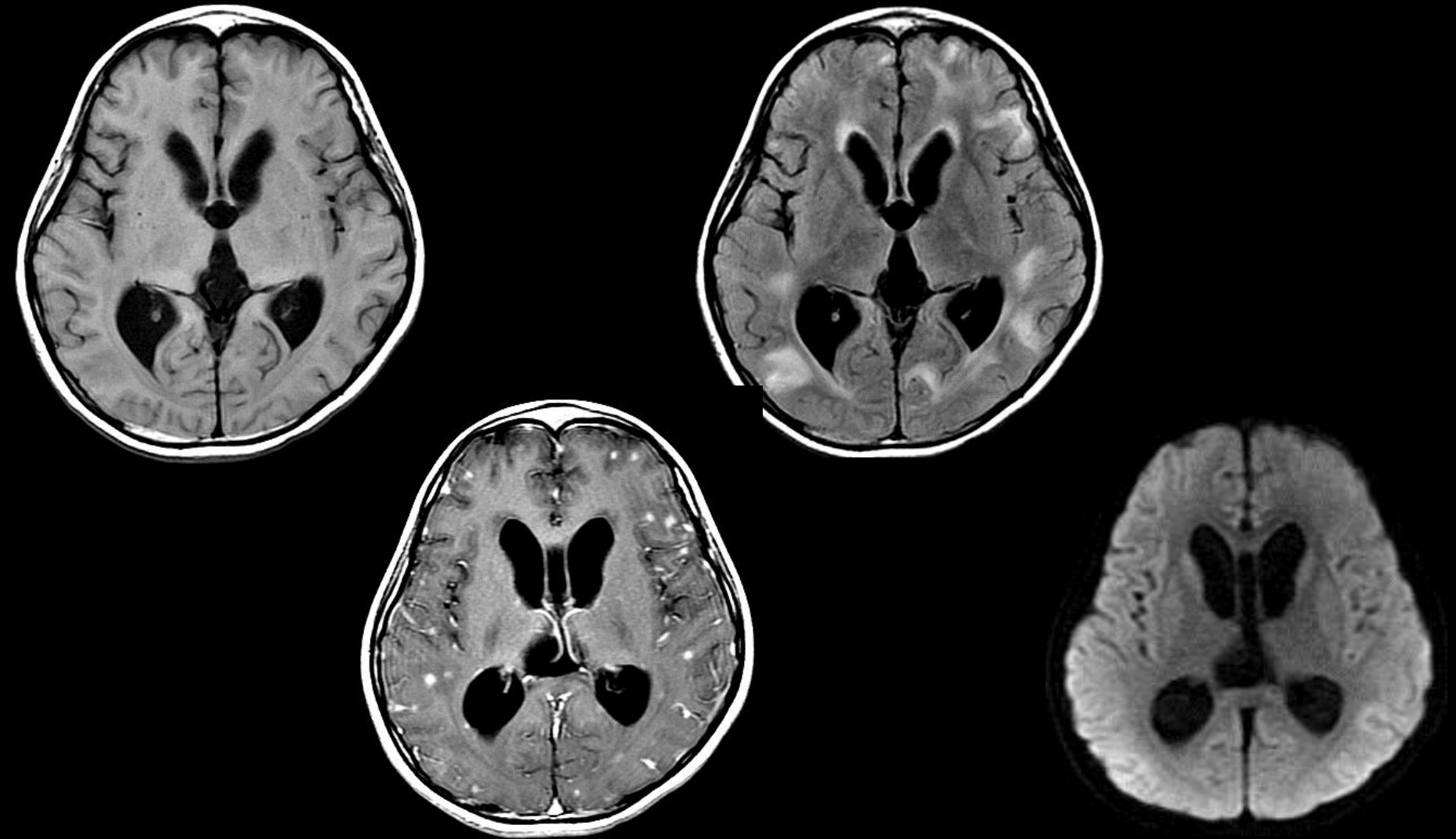
- Brain maturation
- Hypoperfusion: severity, duration
- Mild to moderate hypoperfusion: blood redistribution, damage of watershed regions
- Severe hypoperfusion: high metabolic regions injury.
 - Preterm: thalamus, brainstem
 - Fullterm: lateral thalamus, globus pallidus, posterior putamina, hippocampi, brainstem, sensorimotor cortex (perirolandic cortex)

Q04

性別：Male 年齡：10 y/o

主訴或重要病史或物理檢查：General lethargy for 16 days,
frequent vomiting, headache, fever up to 38C

According to mother's statement , patient was used to kissed 蛞 蝓



ANS: Eosinophilic meningoencephalitis
Caused by *Angiostrongylus cantonensis*

- *Angiostrongylus cantonensis*, also known as the rat lungworm, is prevalent in the Pacific Islands and southeast Asia and is the most common cause of **eosinophilic meningitis** in humans.
- **Rats** serve as the definitive host of the nematode.
- Humans are infected by ingestion of freshwater and terrestrial snails and **slugs**, or transport hosts, such as freshwater prawns, frogs, fish.
- Taiwan has recorded hundreds of cases of eosinophilic meningitis. Most of the cases occurred among children.
- There was usually a history of eating or playing with snails or slugs.

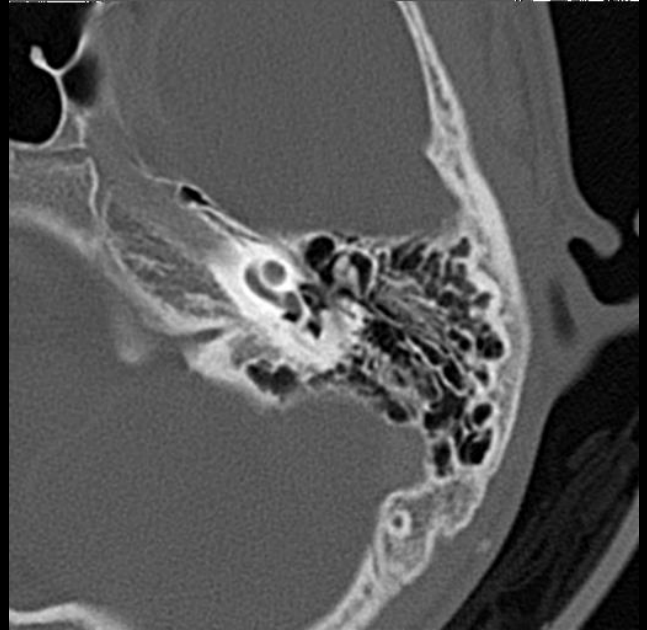
MRI

- Multiple enhancing nodules in the brain and linear enhancement in the leptomeninges, accompanied by stick-shaped enhancement.
- Leptomeningeal enhancement, ventriculomegaly and abnormal enhancement within the cerebral and cerebellar hemisphere.
- Significant correlation between the severity of headache, cerebrospinal fluid (CSF) pleocytosis, and CSF and blood eosinophilia with MRI signal intensity in T1-weighted imaging.

Q05

性別：male 年齡：22

主訴或重要病史或物理檢查：Hearing deteriorated recently



ANS: Mondini syndrome

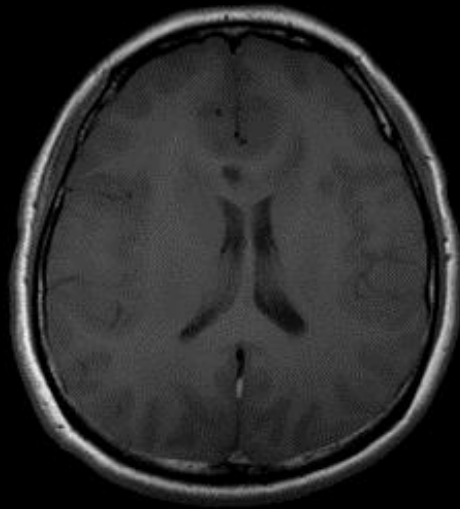
Q06-1

性別：Female 年齡：35 y/o

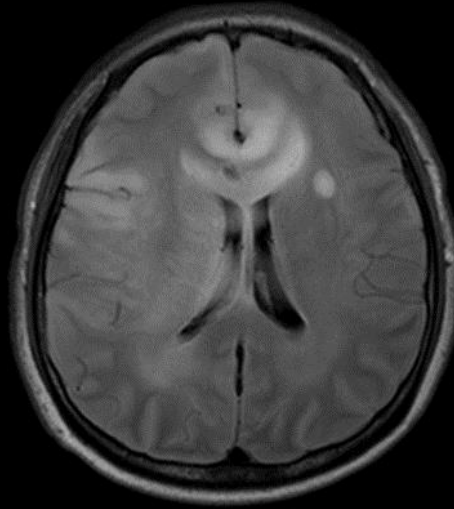
主訴或重要病史或物理檢查：Severe headache for 2 weeks

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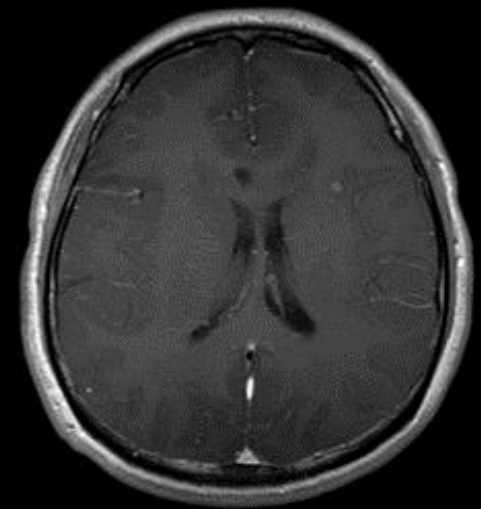
T1

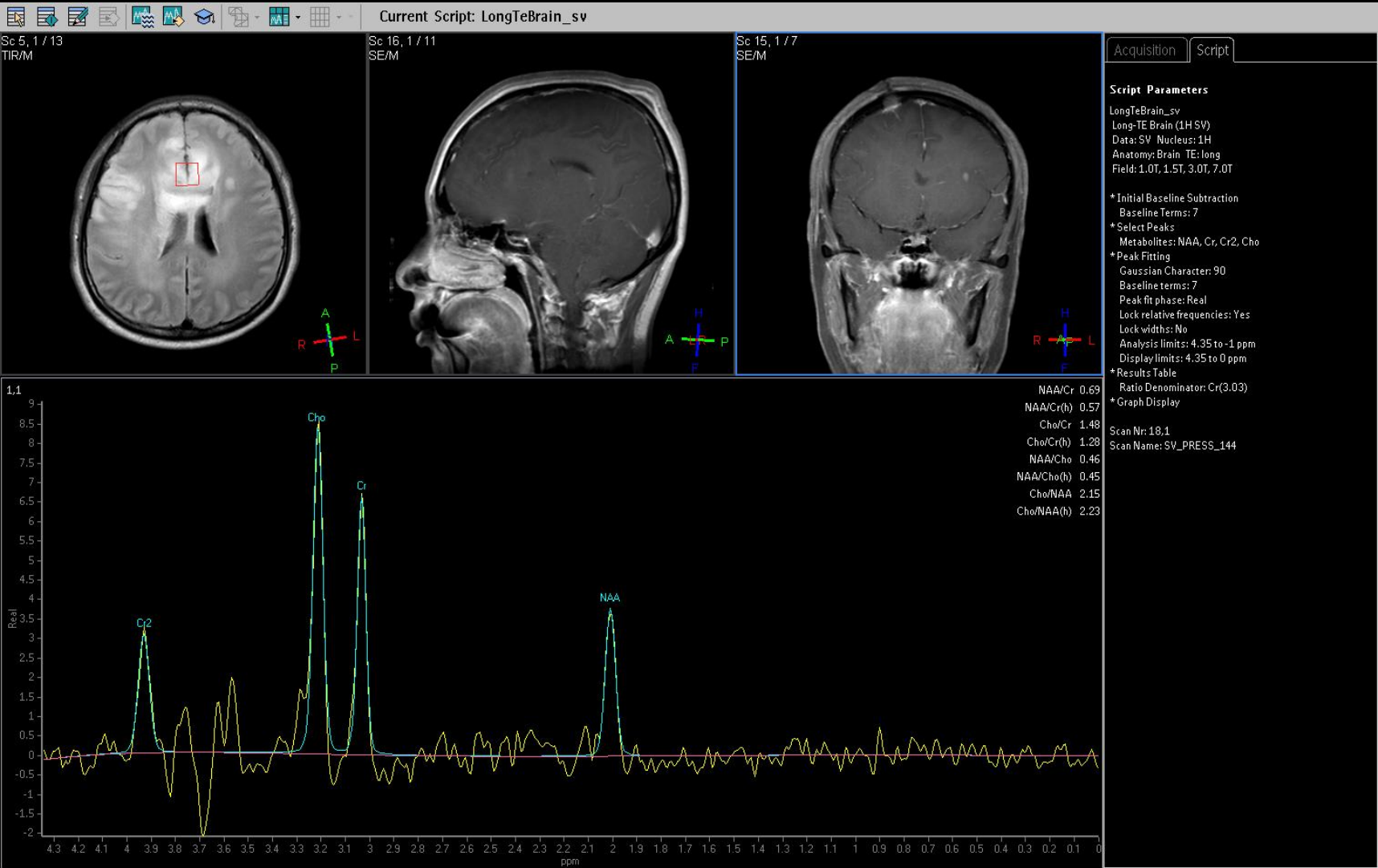


FLAIR



T1/C





Spectro Results

Metab	Position	SNR	Width	Height	Ht/Cr	Area	Ar/Cr	Metab	Position	SNR	Width	Height	Ht/Cr	Area	Ar/Cr
NAA	2.009	10.1	0.050	3.804	0.574	0.212	0.686	Cr	3.035	17.5	0.042	6.621	1.000	0.309	1.000
Cho	3.214	22.4	0.048	8.470	1.279	0.456	1.477	Cr2	3.931	8.1	0.054	3.055	0.461	0.186	0.603

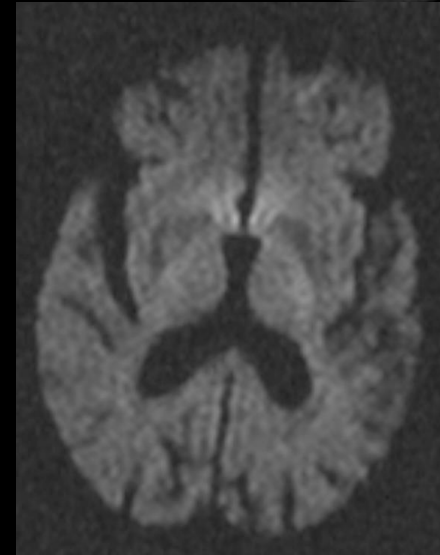
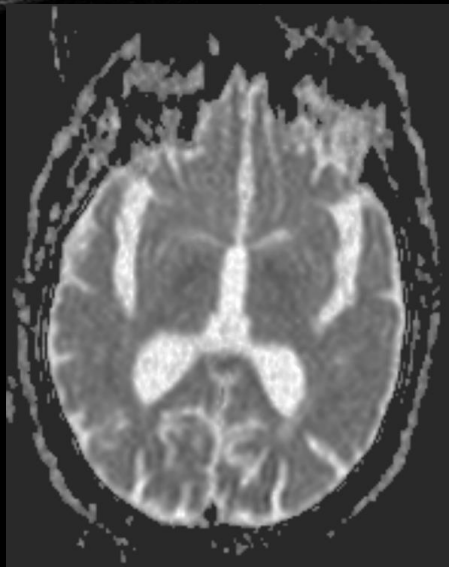
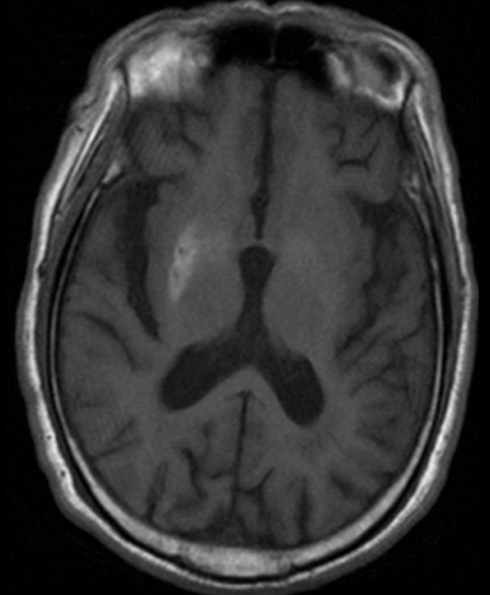
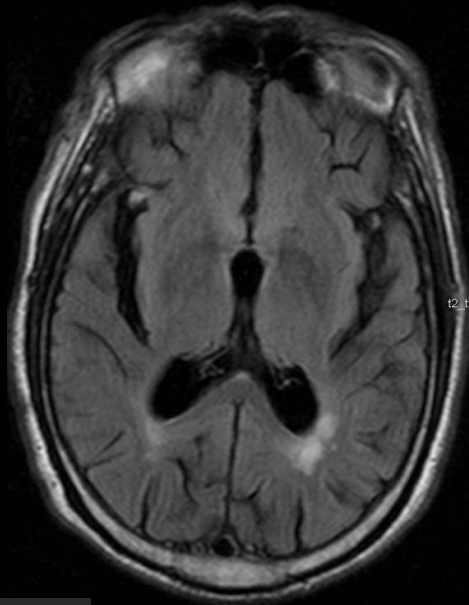
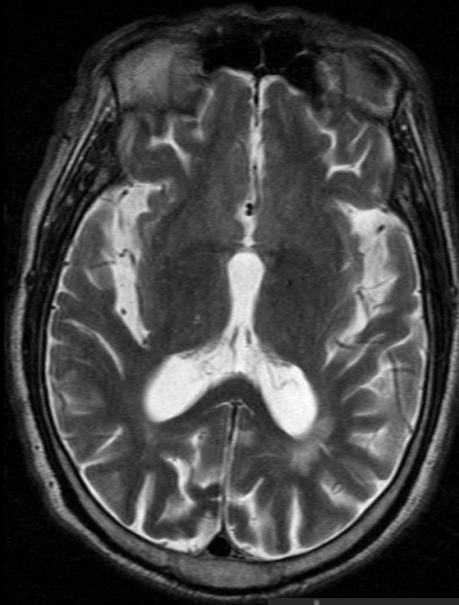
ANS: Gliomatosis cerebri

Q07

性別：Male

年齡：80 y/o

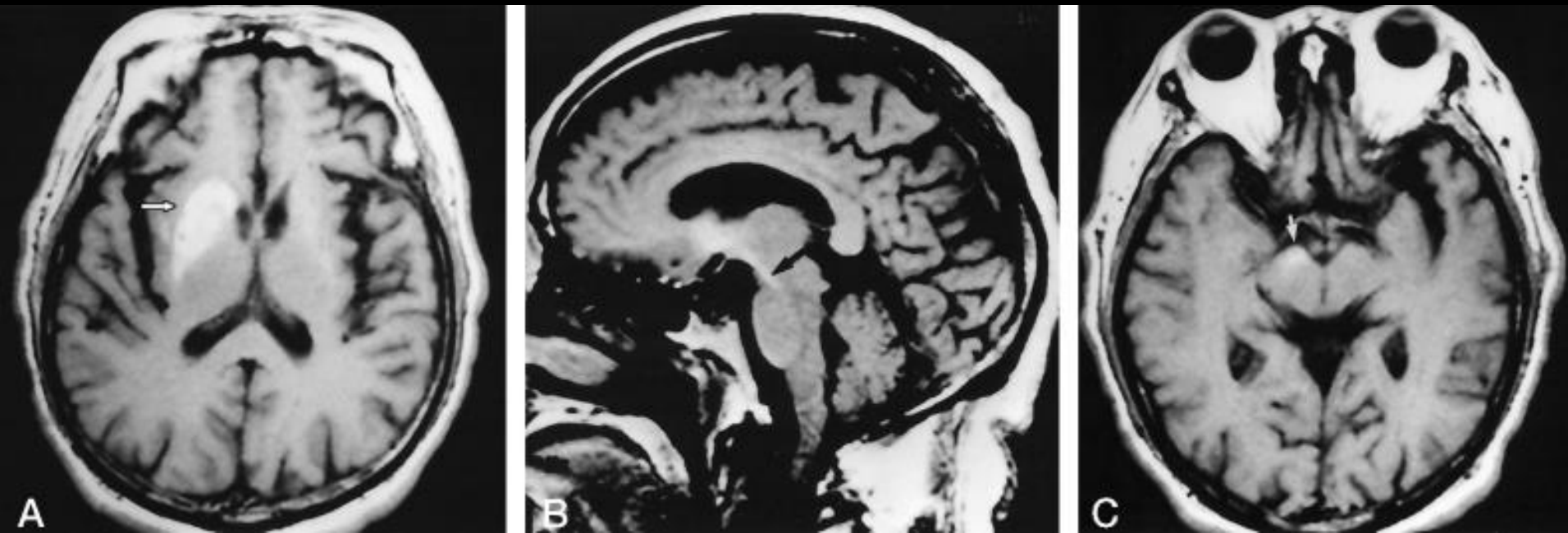
主訴或重要病史或物理檢查：Involuntary movement of left side limbs for 2 weeks



ANS: hyperglycemic hemichorea

hemichorea-hemiballism

- Since hemiballism often evolves into hemichorea: hemichorea-hemiballism (HCHB)
- The involuntary movements of chorea consist of random and fast jerking motions in distal parts of the limbs, whereas those of ballism consist of larger-amplitude, random, and violent flinging or kicking, mainly in the proximal joints.
- The most common cause : vascular lesion, hyperglycemia
- HCHB that accompanies hyperglycemia may exhibit a **hyperintense putamen on T1WI** and transient presence of high density in the corresponding regions on CT scans.



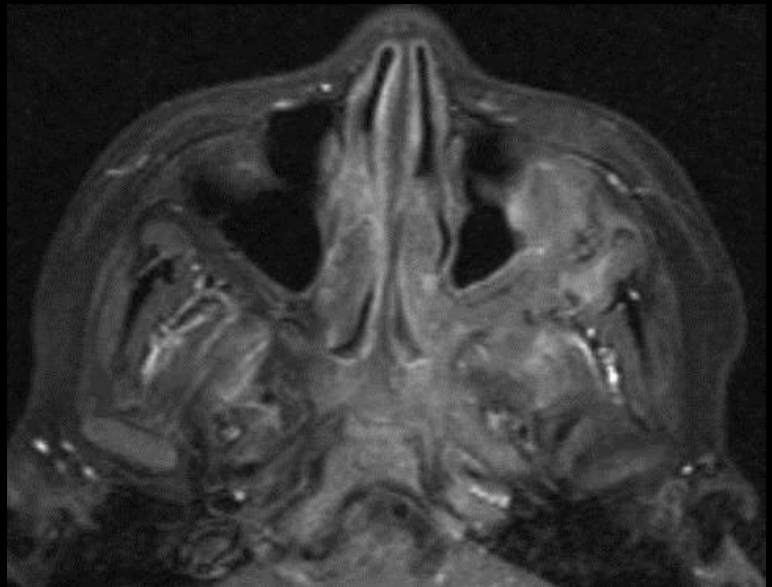
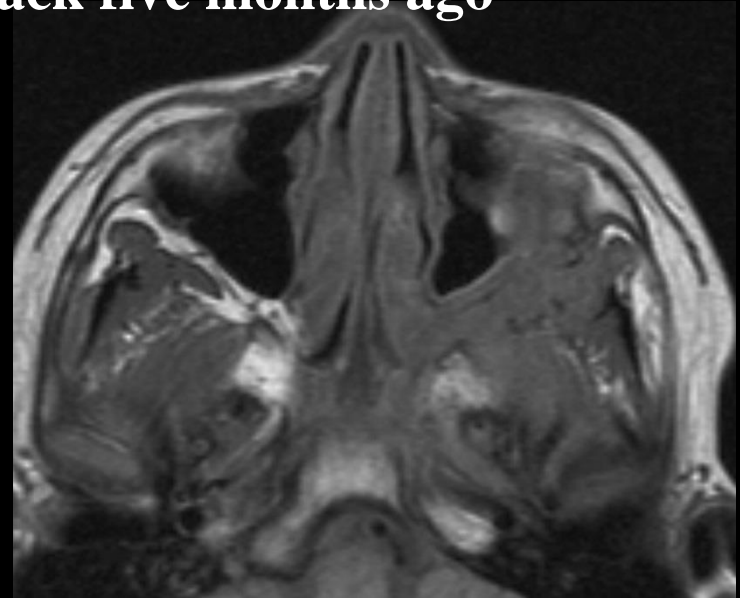
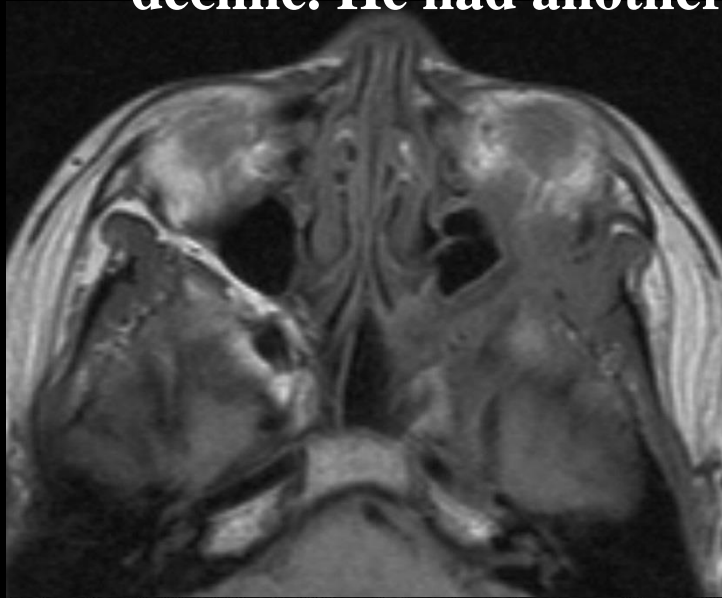
- A, hyperintensities in the right caudate nucleus, the putamen, globus pallidus (arrow).
- B, Sagittal section shows hyperintensities extending from the anteroventral part of the right lentiform nucleus to the anterior part of the midbrain (arrow).
- C, Axial section at the level of the midbrain shows hyperintensity in medial part of the right cerebral peduncle (arrow).

Q08-1

性別：Male 年齡：13 y/o

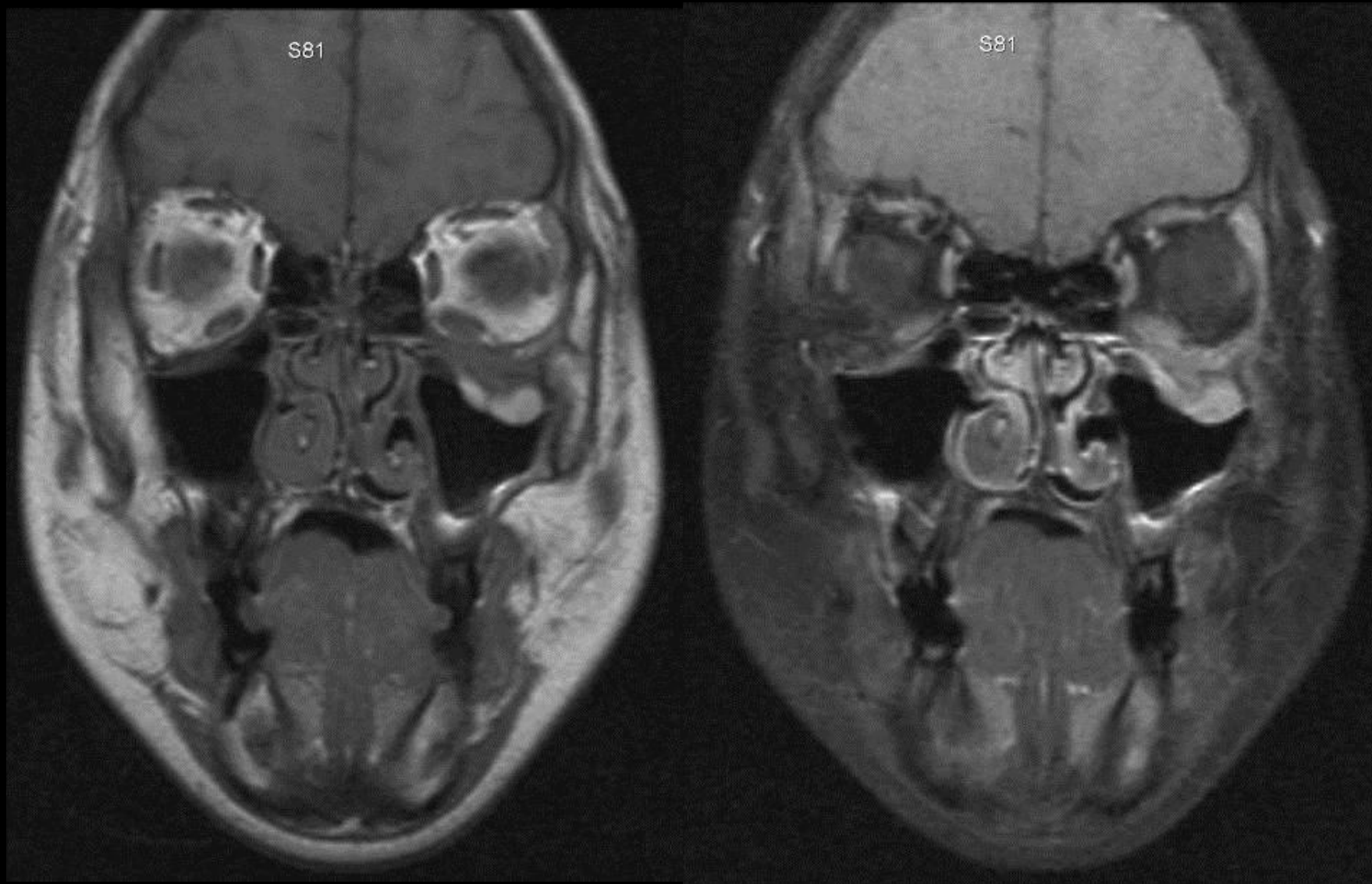
主訴或重要病史或物理檢查：Acute left eye visual decline. He had another attack five months ago

本題有二張投影片，第一張



Q08-2

本題有二張投影片，第二張



ANS: Rosai-Dorfman disease

Rosai-Dorfman disease

- Sinus histiocytosis with massive lymphadenopathy (SHML), is a rare histiocytosis of unknown cause.
- Epstein-Barr virus and human herpes virus 6 have been isolated in a few patients, but no clear association has been identified.
- Extranodal involvement occurs in 43% cases, with 75% occurring in the head and neck, including upper respiratory tract (73%), Orbit (50%), and salivary glands (25%).
- The symptoms include nasal obstruction, rhinitis, and epistaxis, and clinical signs are exophthalmos and nasal polyps according to the location of the lesion

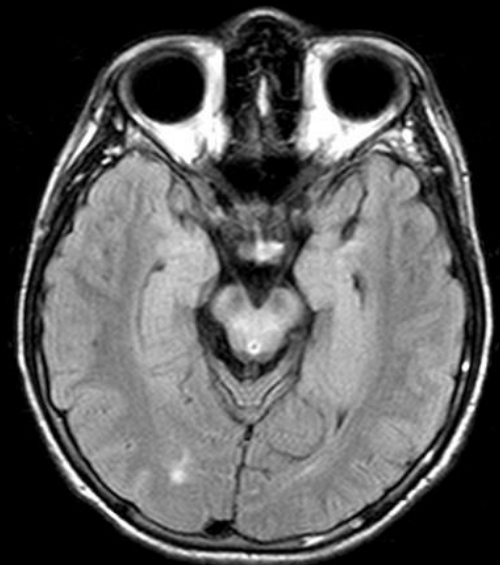
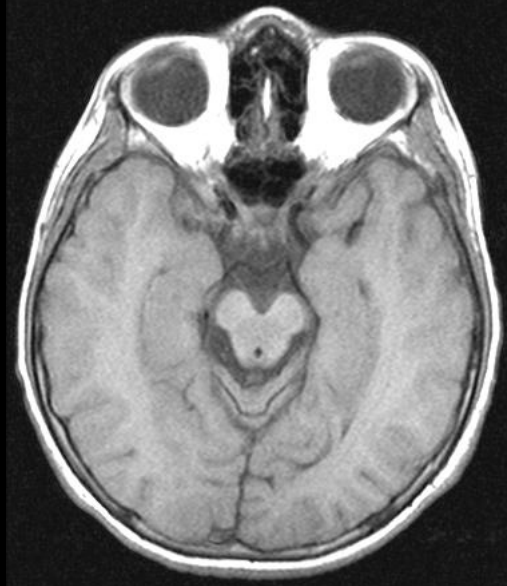
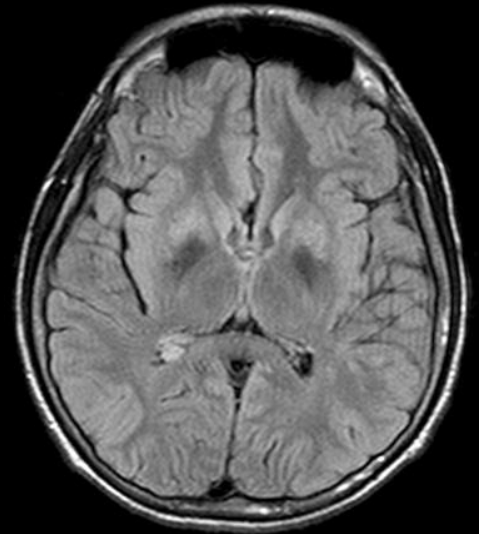
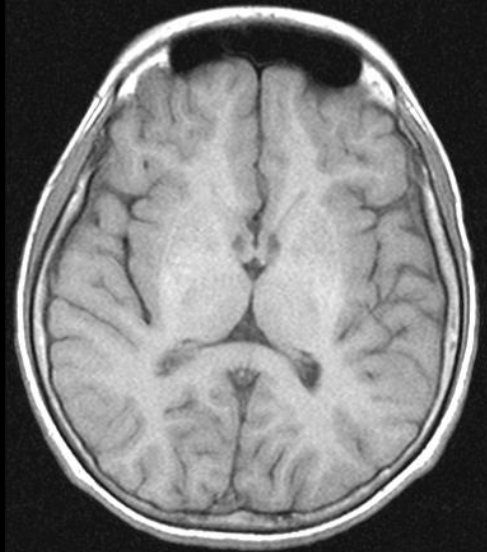
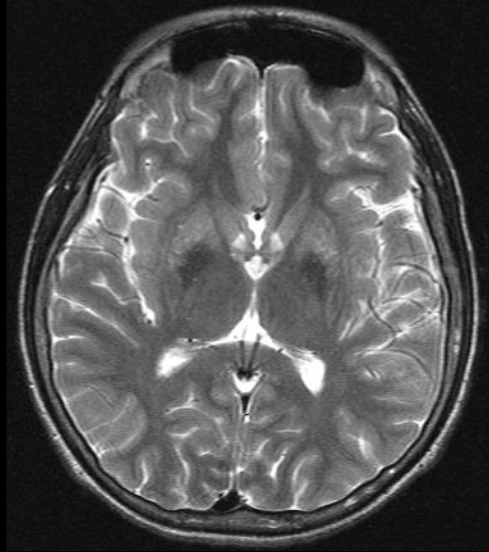
- The diagnosis is based on the pathologic findings of emperipolesis and S-100 protein positivity.
- There is no ideal treatment, and the disease is often self-limited.
- Steroid, chemotherapy, radiotherapy, and surgery have been reported for the management of Rosai-Dorfman disease.

Q09-1

性別：Male 年齡：16 y/o

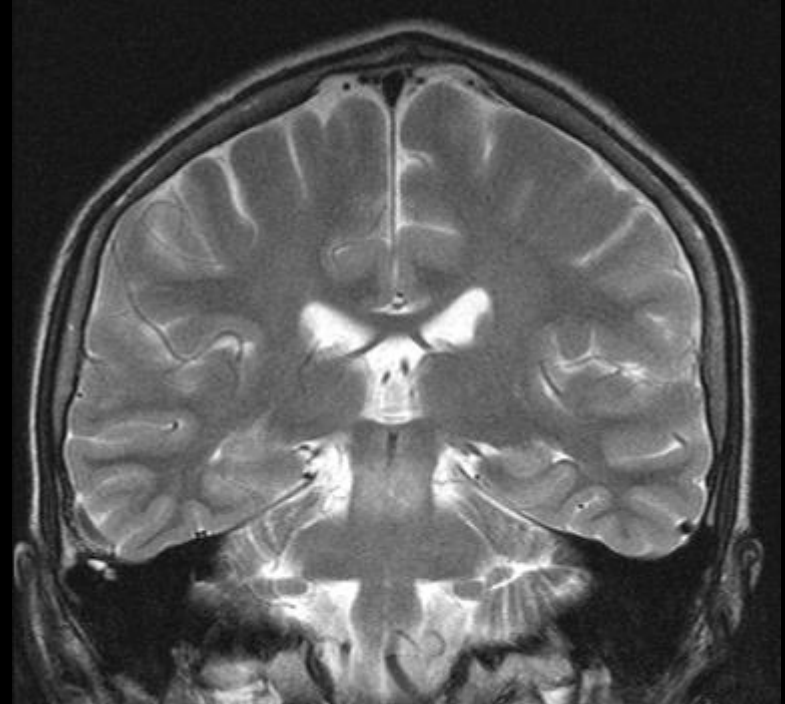
主訴或重要病史或物理檢查：mild dizziness

本題有二張投影片，第一張



Q09-2

本題有二張投影片，第二張



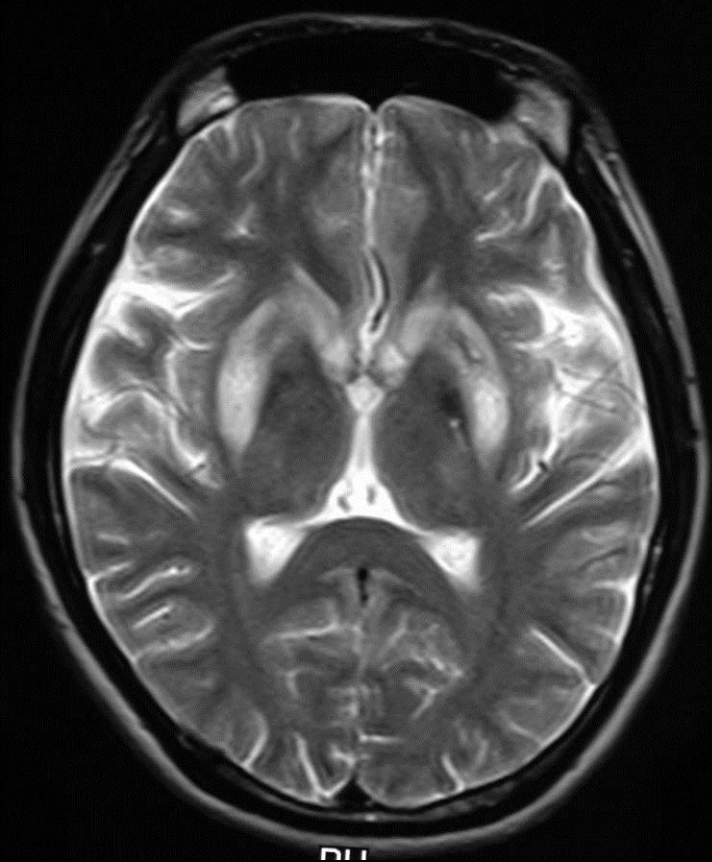
ANS: Wilson disease

Lab

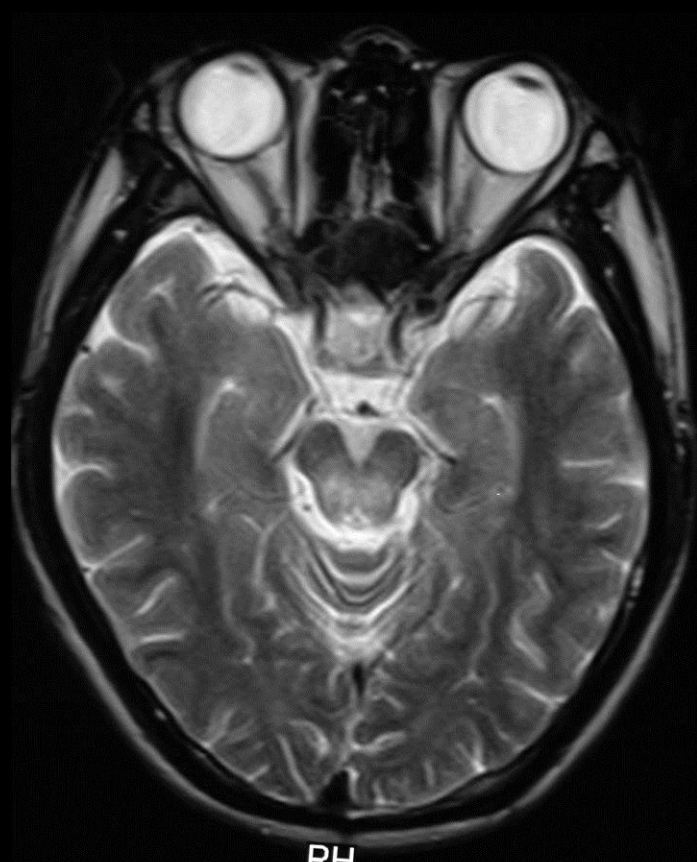
- Ceruloplasmin: 0.097 (0.21-0.42)
- Urine cu: 134 (15-50)
- Blood cu: 47 (70-150)

Wilson disease

- Wilson's disease is an autosomal-recessive disorder caused by mutation in the ATP7B gene, with resultant impairment of biliary excretion of copper
- Diagnosis:
 - Symptomatic pt: presence of **Kayser-Fleischer rings** and ceruloplasmin levels of less than 20 mg/dL
 - Asymptomatic: isolated liver disease, and lacks corneal rings, the coexistence of a hepatic copper concentration of more than 250 mg/g of dry weight and a low serum ceruloplasmin level



PH



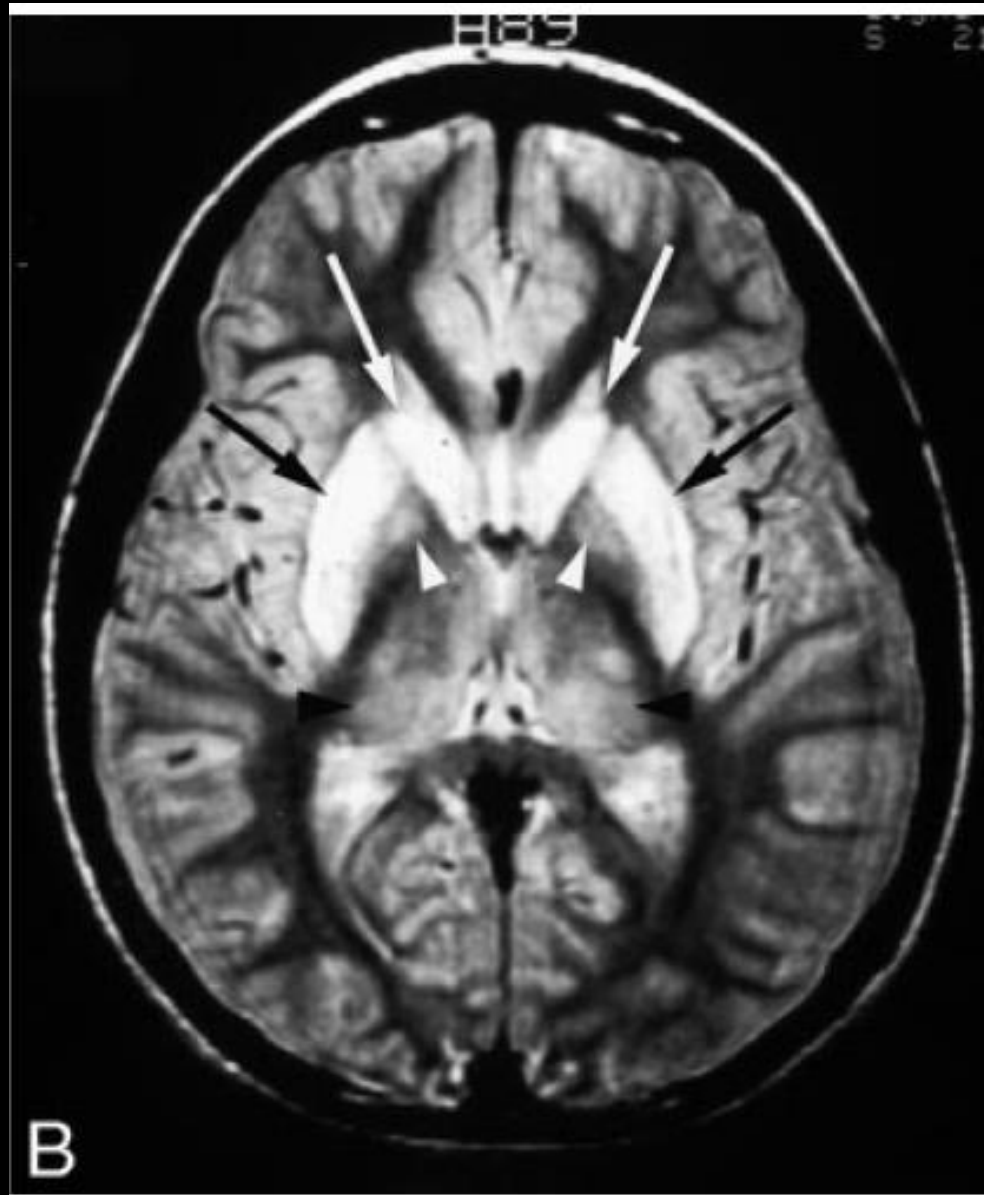
PH

Wilson disease

- Bilateral symmetric involvement of the **putamen, caudate nuclei, thalamus, globus pallidus, dentate nucleus, pons, substantia nigra, periaqueductal gray matter, tectum, and red nucleus** can be seen.
- Subcortical and centrum semiovale white matter involvement may also be seen.
- Hypointensity on T2-weighted images may be seen sometimes, secondary to copper deposition or iron deposition.
- **Restricted diffusion** : **early** in the disease process due to cytotoxic edem, or inflammation due to excessive copper deposition. However, this restricted diffusion is not seen in chronic cases. which are characterized by necrosis, spongiform degeneration, and demyelination.

Wilson disease

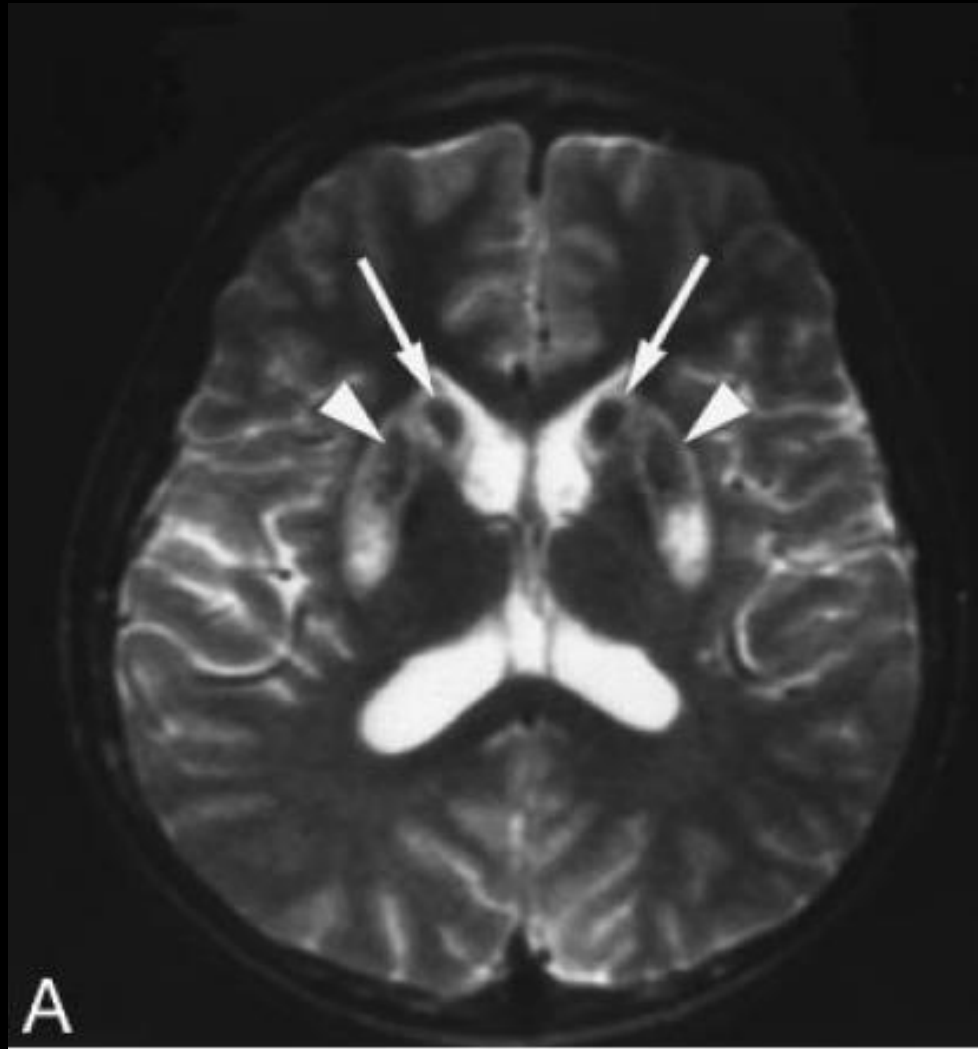
- The lentiform nuclei are involved most often, followed by the thalami, pons, midbrain, superior and middle cerebellar peduncles, and cerebellar nuclei.
- Cause: edema, gliosis, demyelination, neuronal necrosis, or cystic degeneration
- Some of the lesions showed reversible changes following copper chelating Tx



T2-weighted axial MR image shows bilateral symmetric high signal intensity in the putamen (*black arrows*) and caudate nuclei (*white arrows*). Slightly increased signal intensity in both thalami (*black arrowheads*) and globus pallidi (*white arrowheads*) is also noted.

Wilson disease

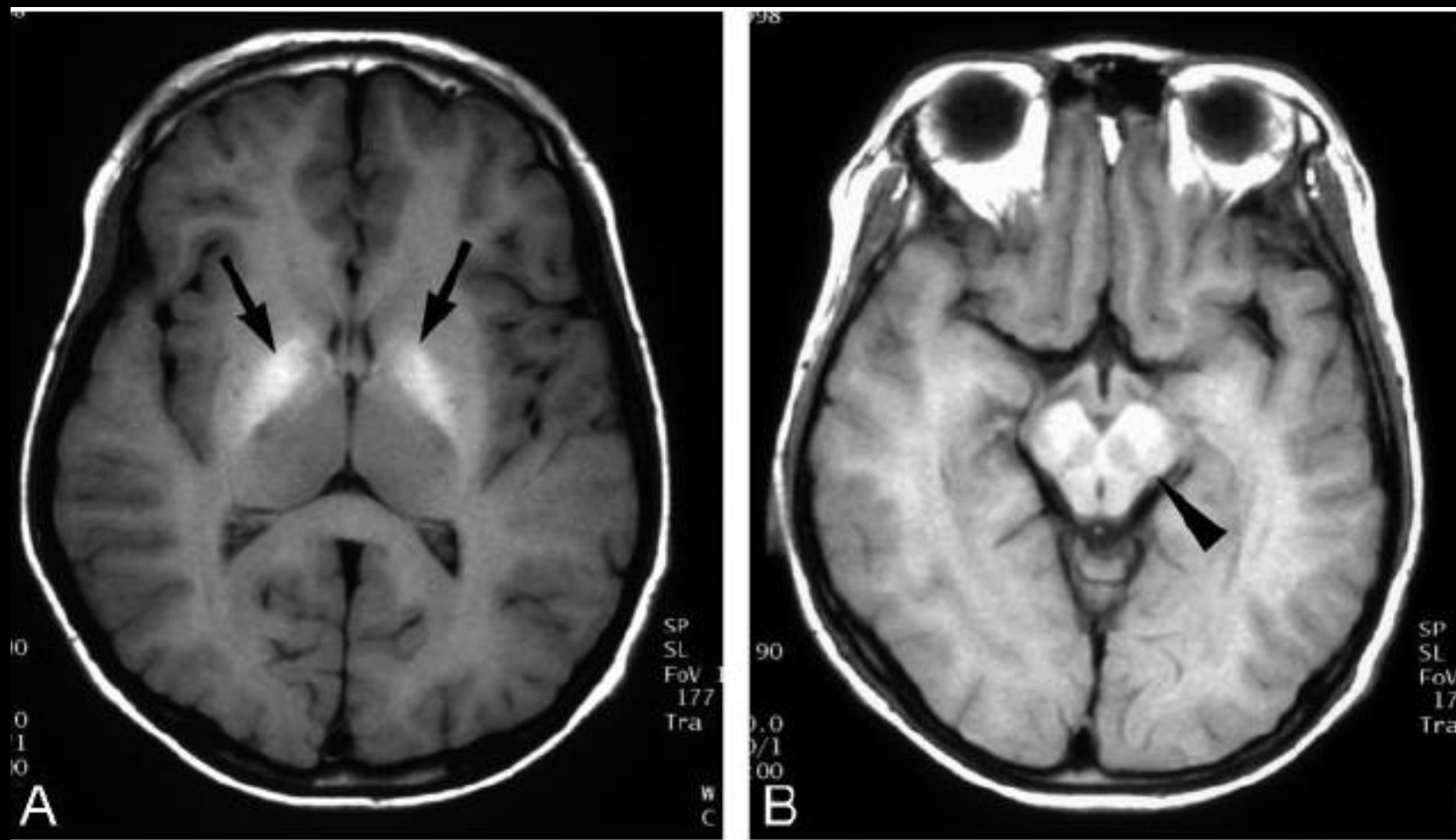
- Dark SI in the globus pallidus, putamen, or caudate nucleus, surrounded by peripheral high signal intensity on T2WI
- Cause: increased iron deposition in the areas with accumulation of copper.
- The reversible process of copper metabolism can be a possible explanation for the reversibility of hypointensity after copper chelating therapy,



T2-weighted axial MR image shows bilateral high signal intensity with central dark signal intensity in the putamen (*arrows*) and caudate nuclei (*arrowheads*).

Wilson disease

- **bilateral T1 hyperintensity** in the GP, putamen, midbrain, and pons, without signal-intensity abnormality on T2WI.
- result from the toxic effect of copper overload in the brain and indirectly from **liver failure** as a result of copper intoxication.

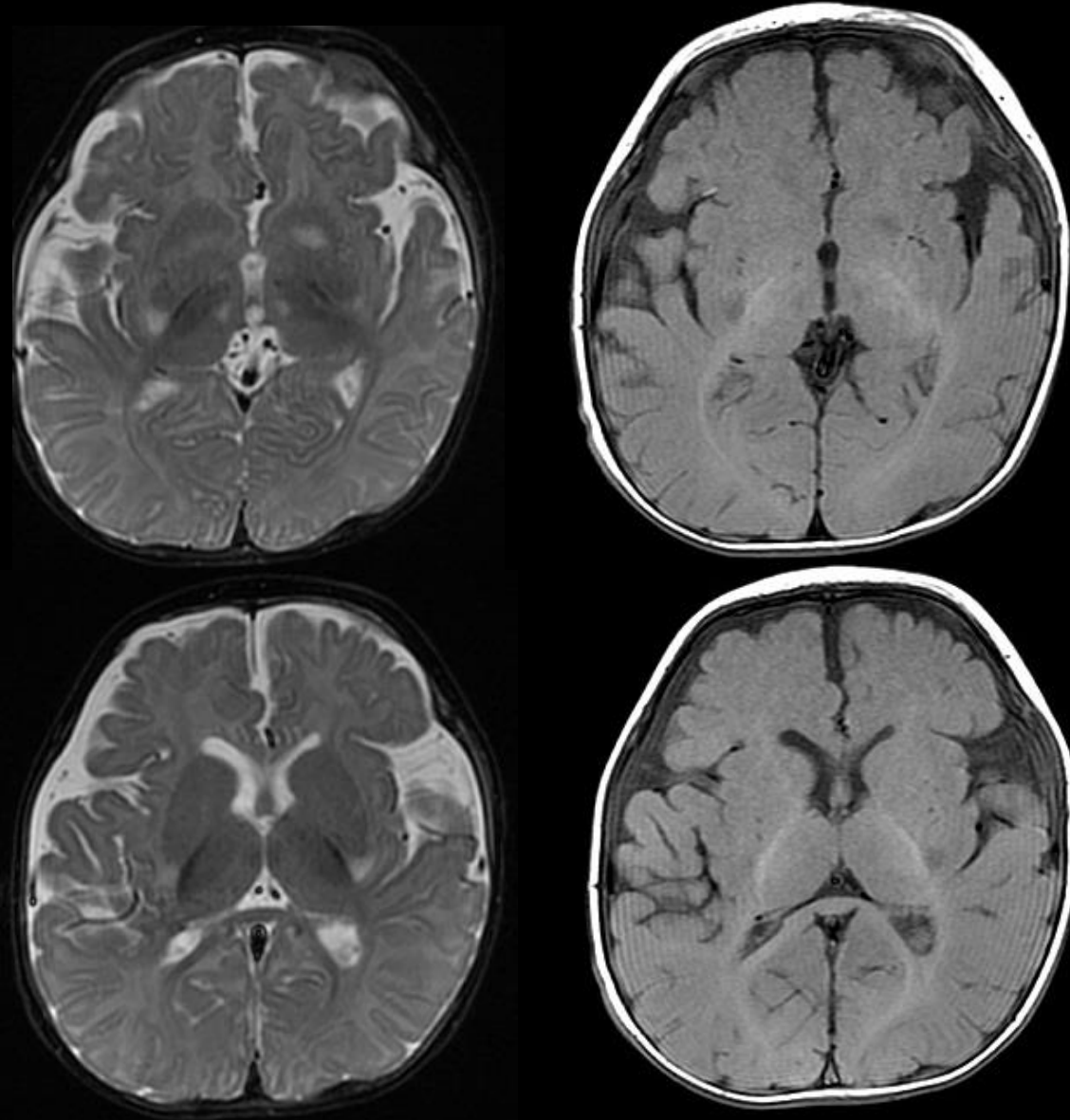


T1-weighted axial MR images show bilateral increased signal intensity in the globus pallidus (*arrows*) and midbrain (*arrowhead*).

Q10

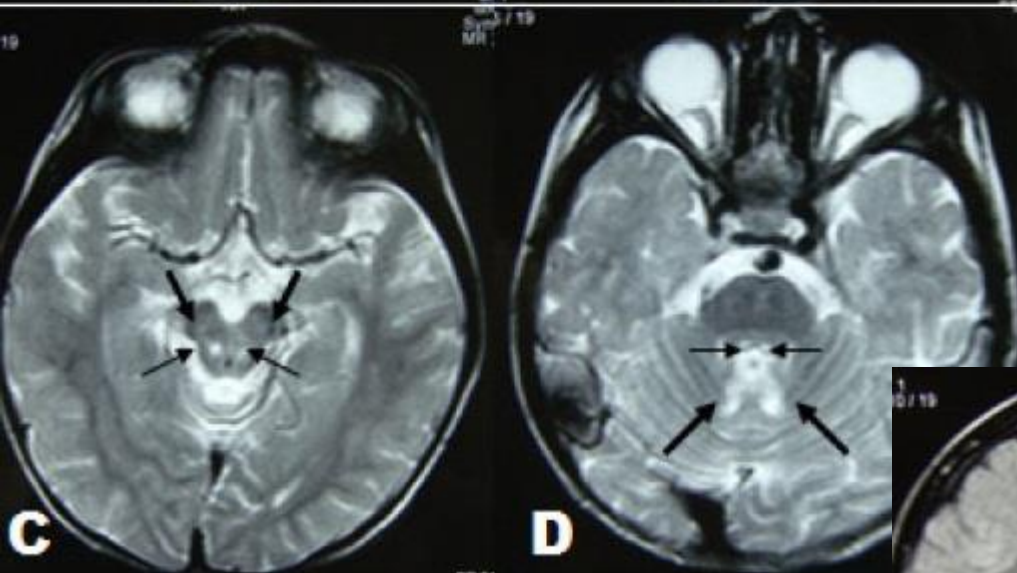
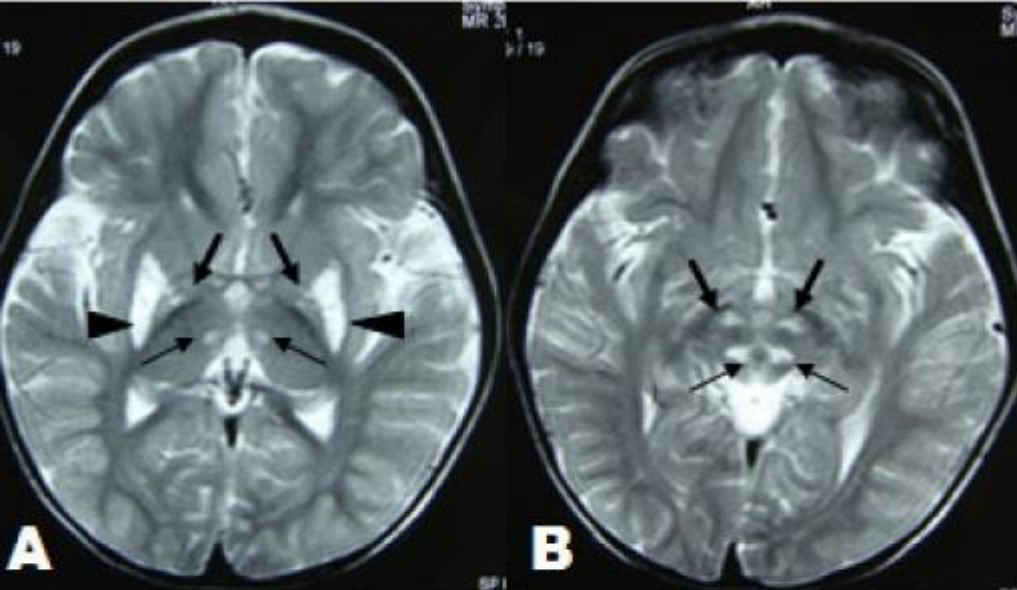
性別：Male 年齡：4 m/o

主訴或重要病史或物理檢查：Poor head control was noted. Developmental delay with obvious head lag

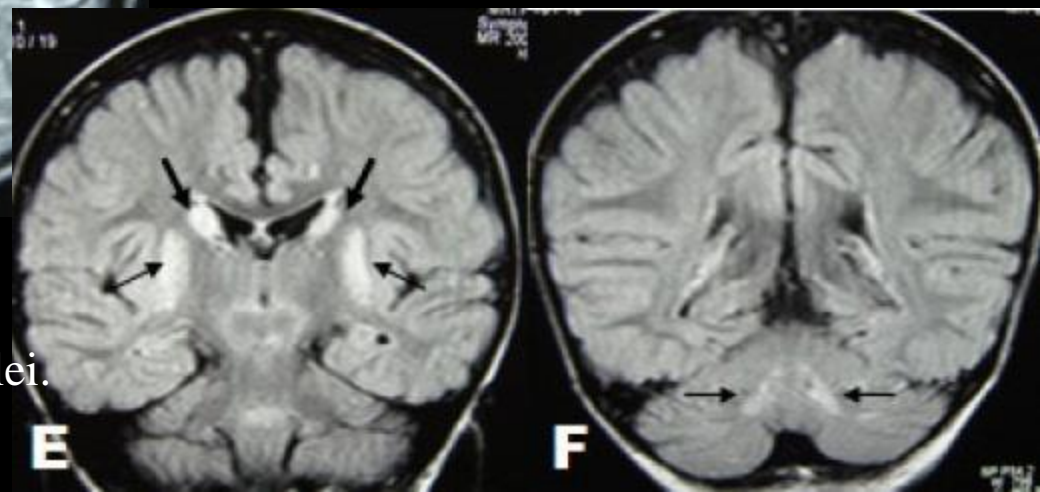


ANS: Leigh syndrome

- Bilateral symmetric hyperintense on T2WI over bilateral dorsal putamina and periaqueductal gray matter.
- Thalami, dentate nuclei.
- Progressive neurodegeneration leading to respiratory failure and death in childhood



Symmetrical involvement of head of caudate nuclei, putamina and dentate nuclei.



Symmetrical hyperintense lesions involved thalamic posteromedial ventral nuclei, globus pallidi and putamina.

Symmetrical involvement of reticular formation of midbrain (thin arrow in B), subthalamic nuclei (thick arrow in B), substantia nigra (thick arrow in C), dorsal midbrain (thin arrow in C) central tegmental tracts (thin arrow in D) and cerebellar nuclei region (thick arrow in D).

Q11-1

性別：male

年齡：55

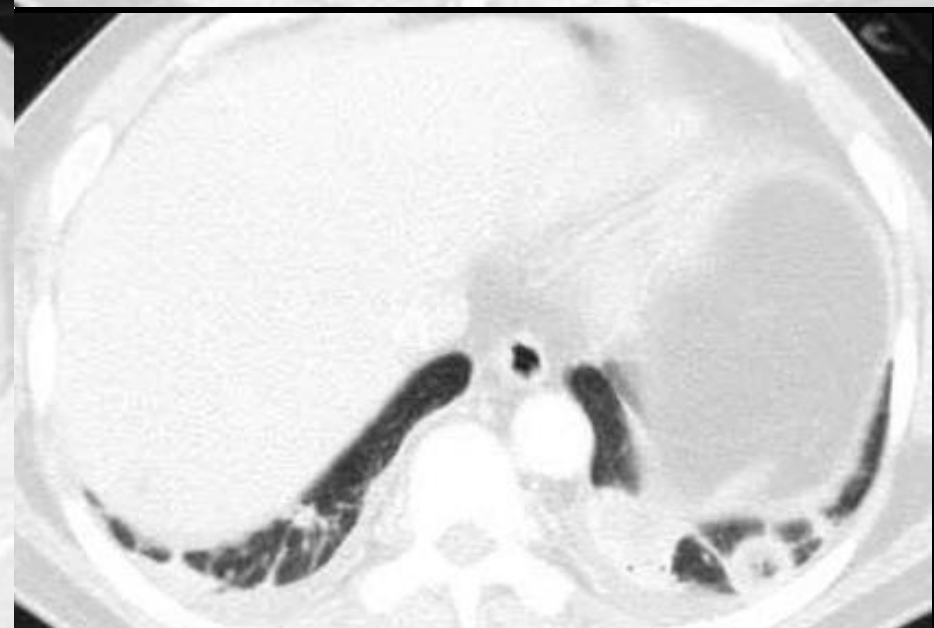
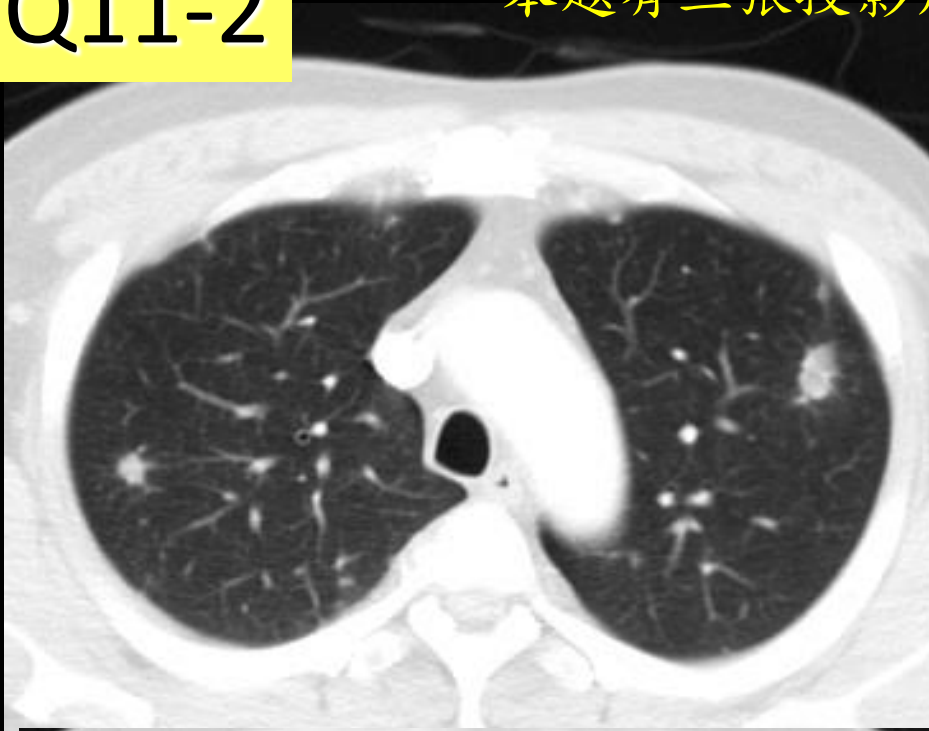
主訴或重要病史或物理檢查：history of infective endocarditis

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Q11-2

本題有三張投影片，第二張



Q11-3

本題有三張投影片，第三張



ANS: septic emboli over bilateral
lung

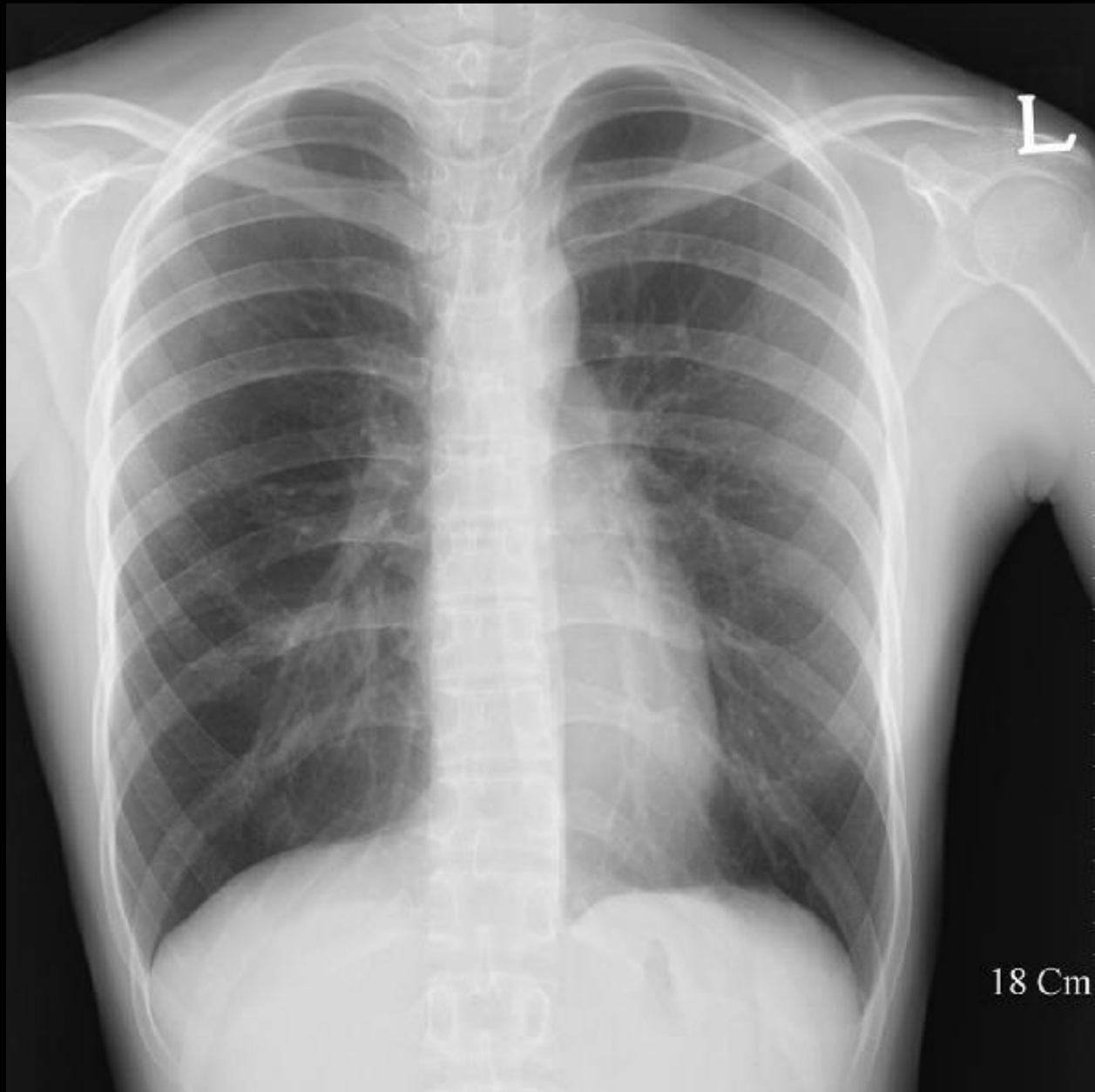
Q12-1

性別：female

年齡：19

主訴或重要病史或物理檢查：Asymmetric breasts

本題有二張投影片，第一張



Q12-2

本題有二張投影片，第二張



ANS: Poland syndrome

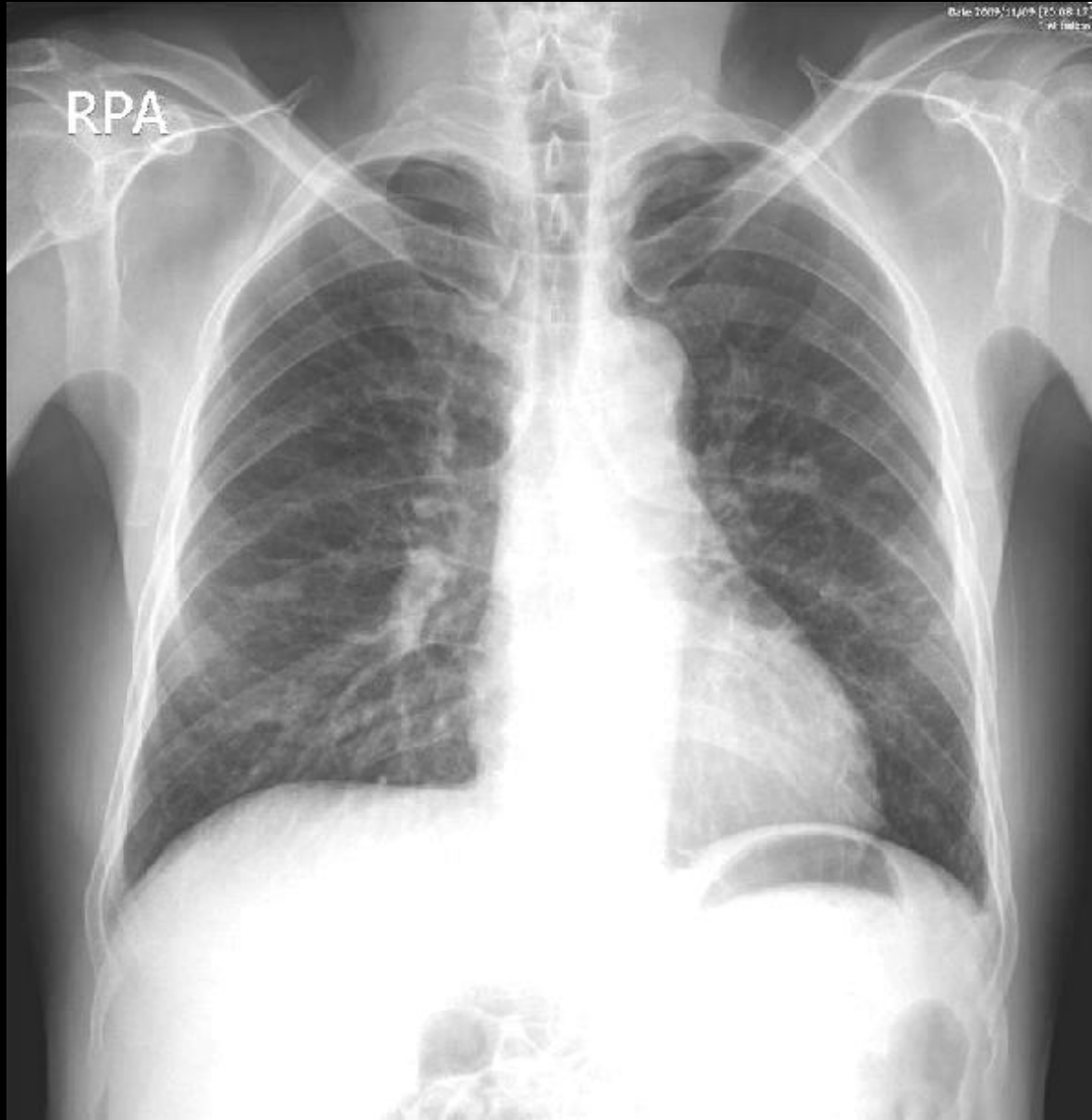
Q13-1

性別：Male

年齡：68

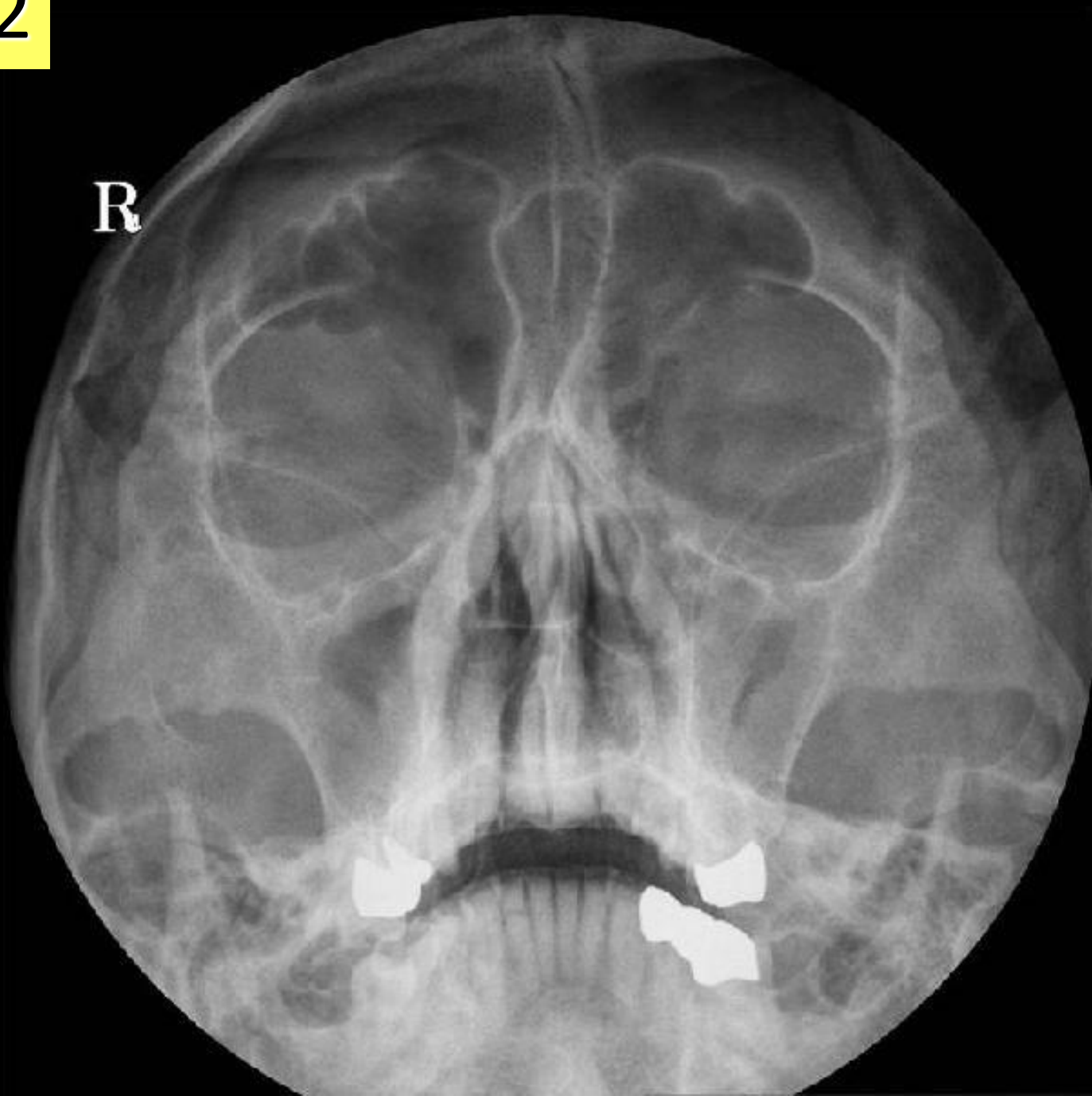
主訴或重要病史或物理檢查：Myalgia for 40 days and fever with chilliness

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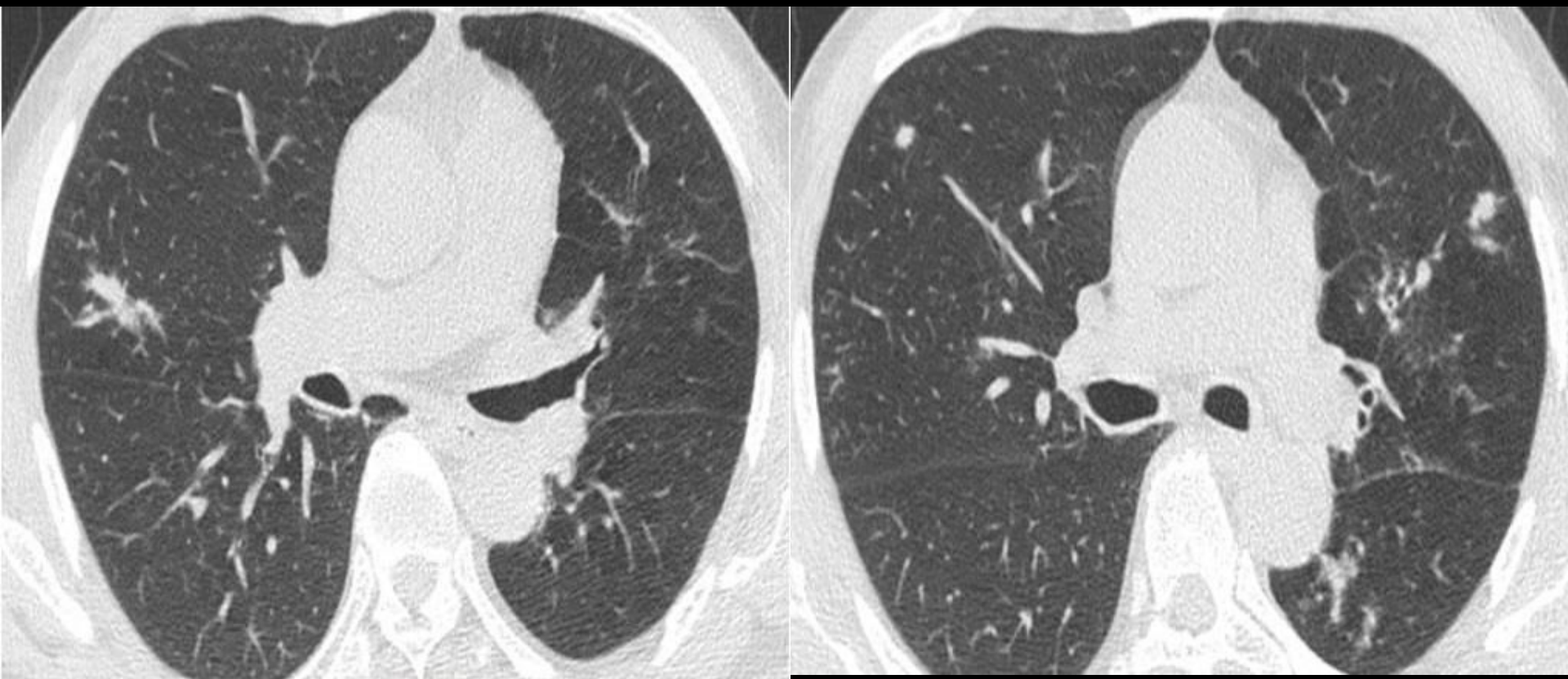
Q13-2

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Q13-3

本題有三張投影片，第三張



ANS: Wegener's granulomatosis

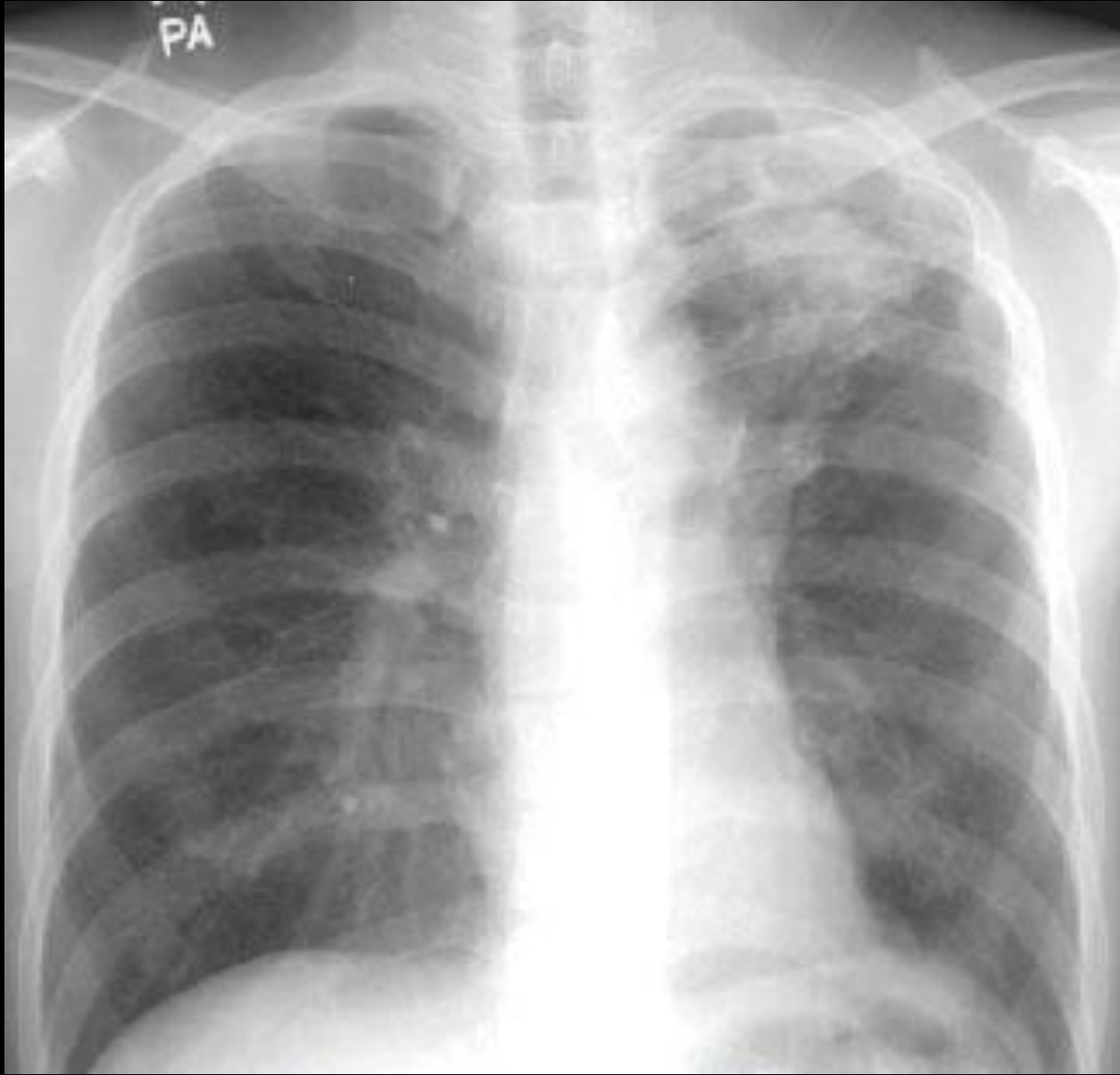
Q14-1

性別：Male

年齡：34

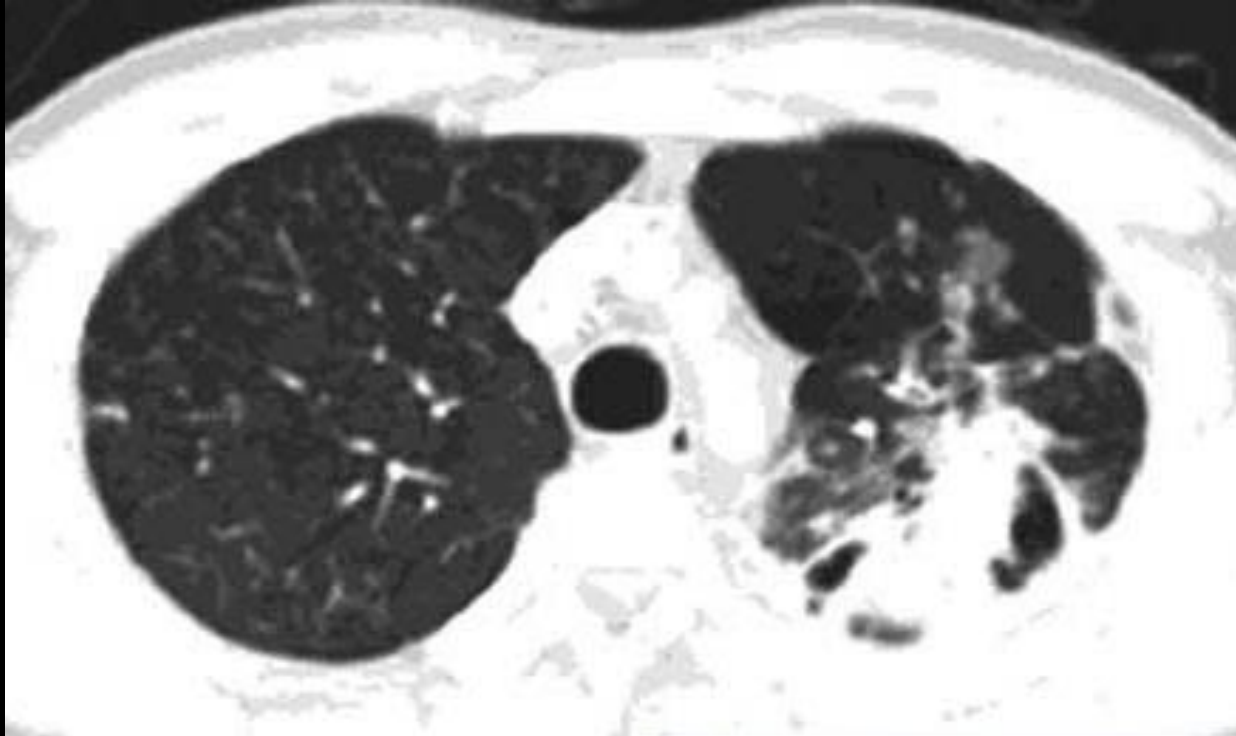
主訴或重要病史或物理檢查：Hemoptysis for several months

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Q14-2

本題有二張投影片，第二張



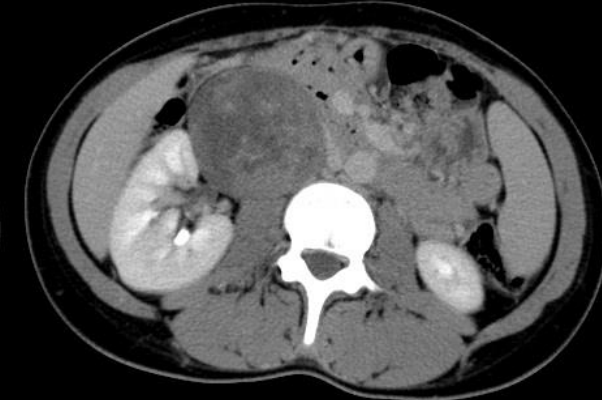
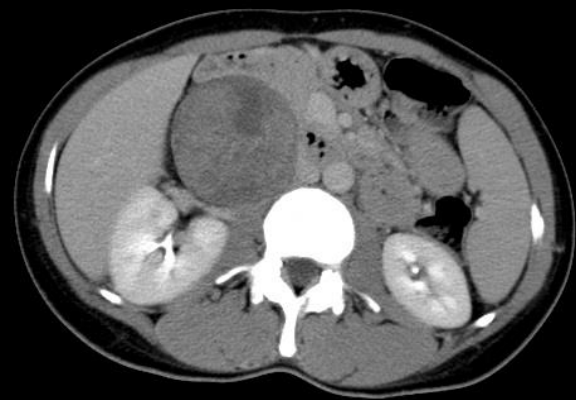
ANS: Pulmonary TB with
Rasmussen aneurysm

Q15

性別：female

年齡：32

主訴或重要病史或物理檢查：Abdominal pain



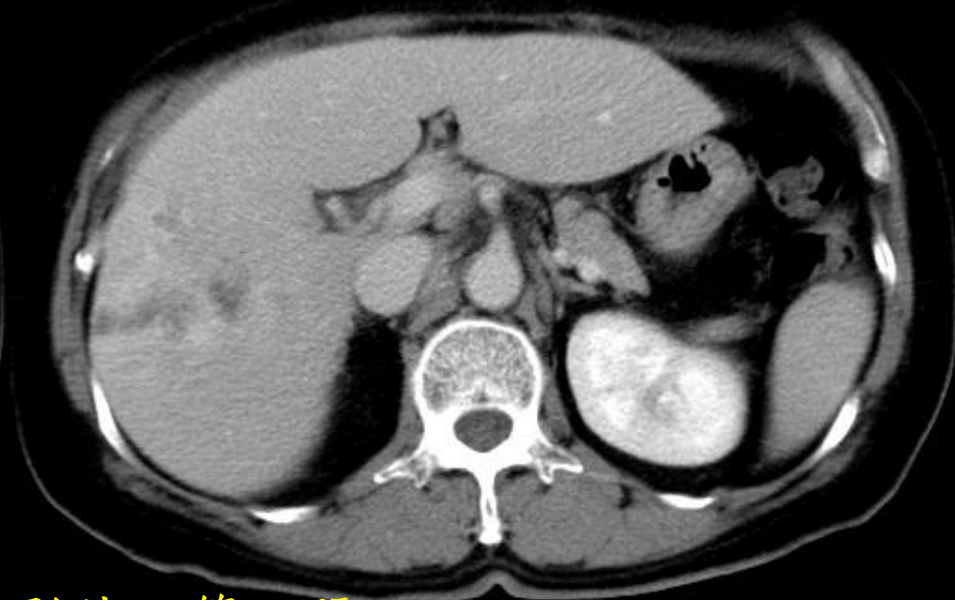
ANS: Neurilemmoma
(Schwannoma)

Q16-1

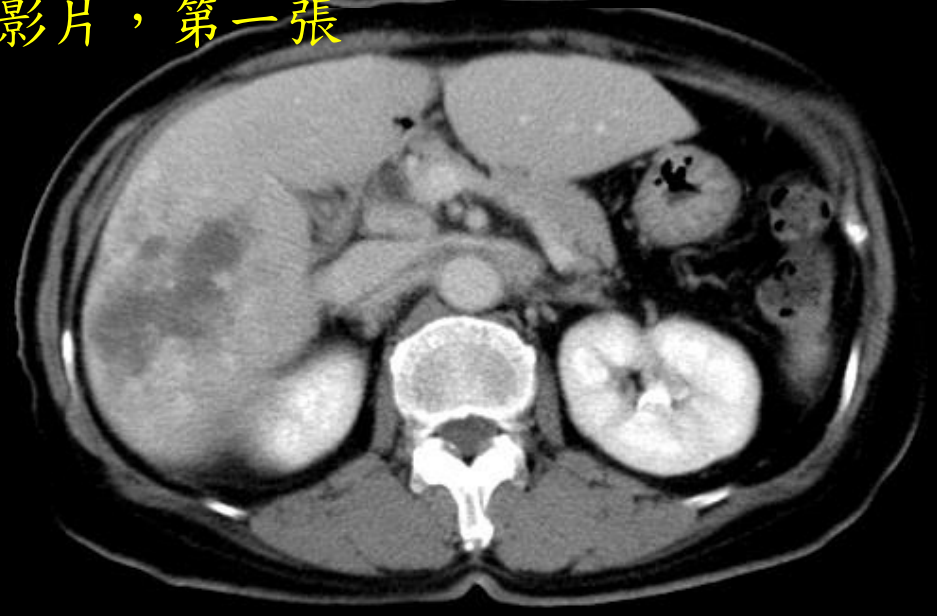
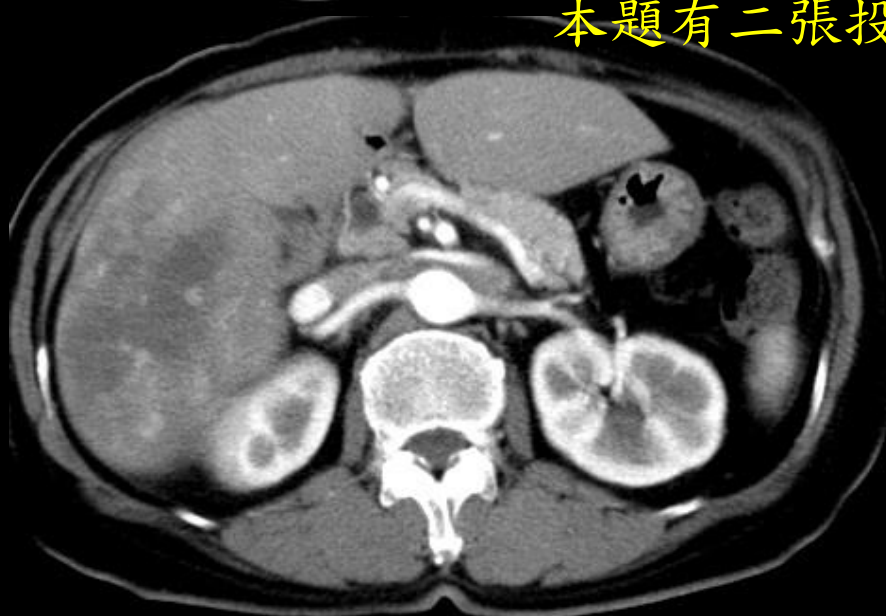
性別：Female

年齡：64

主訴或重要病史或物理檢查：Incidentally found to have a liver tumor by sono in LMD 2 weeks ago. No abdominal discomfort



本題有二張投影片，第一張



Q16-2

本題有二張投影片，第二張



ANS: Cholangiocarcinoma

Q17

性別：Male

年齡：75

主訴或重要病史或物理檢查：Abdominal fullness



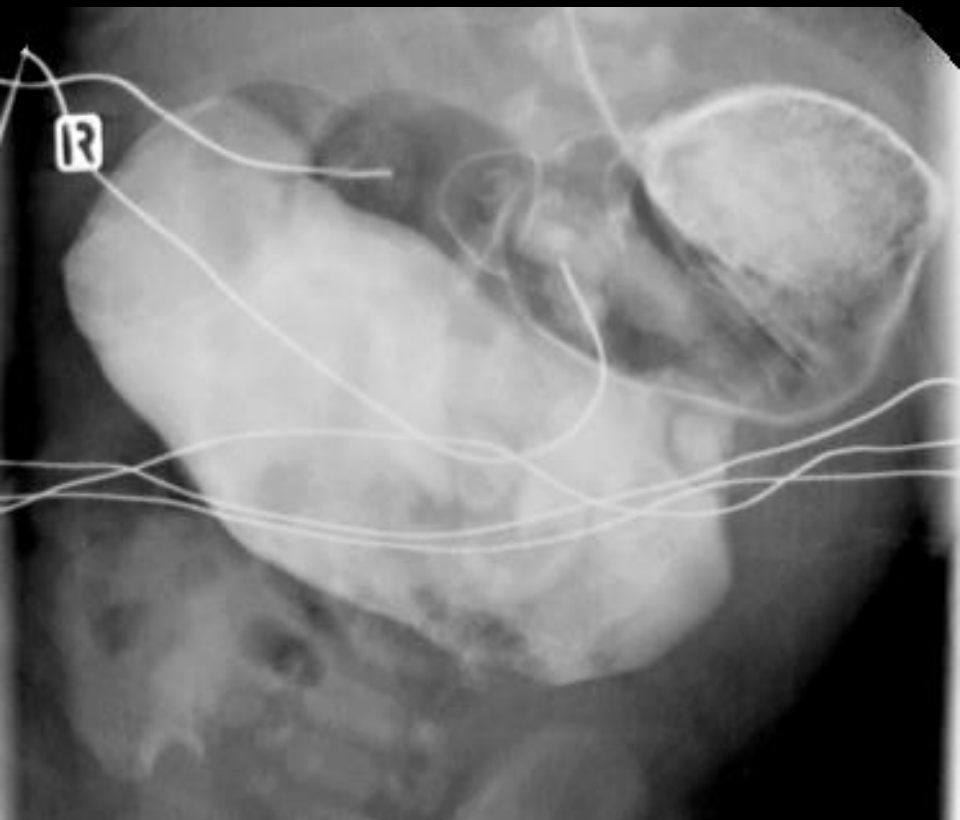
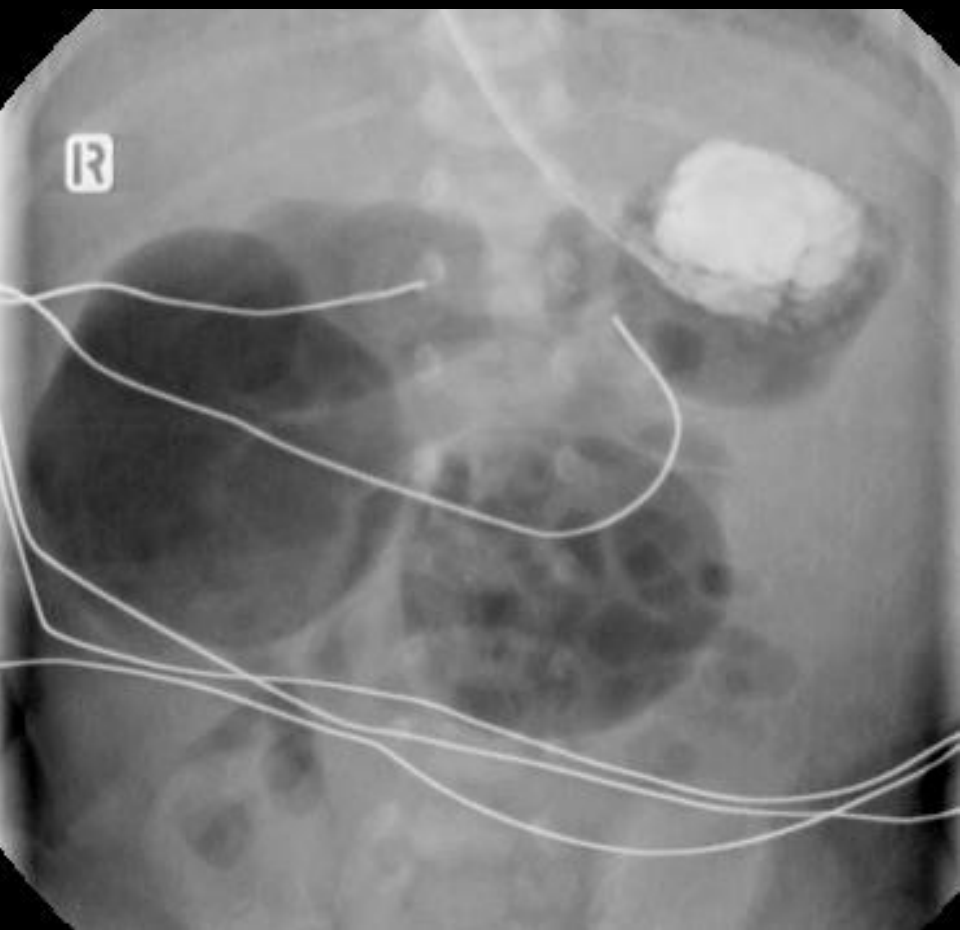
ANS: Icteric type HCC

Q18

性別：female

年齡：1 day

主訴或重要病史或物理檢查：vomiting



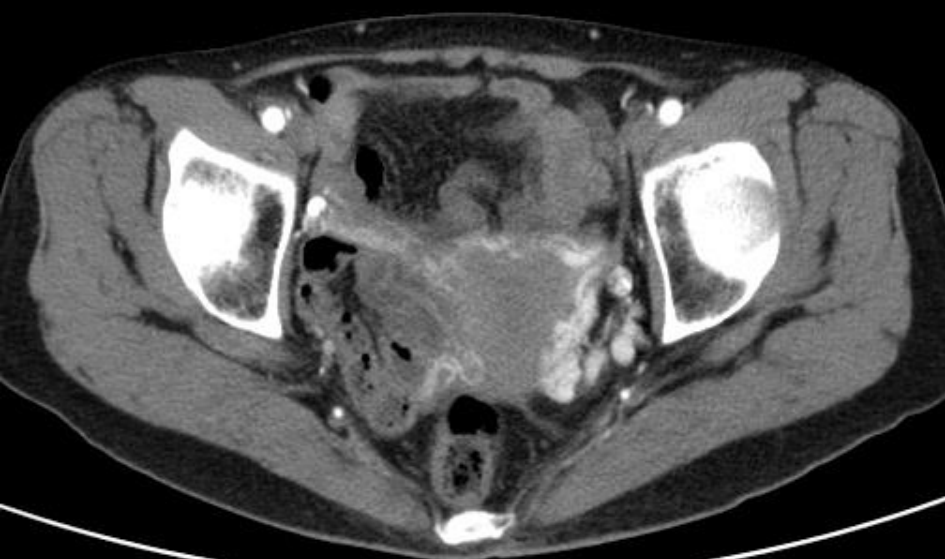
ANS: Jejunal stenosis

Q19

性別：female

年齡：56

主訴或重要病史或物理檢查：Hematuria with left flank pain



ANS: Nutcracker syndrome,
causing pelvic congestion
syndrome

Q20

性別：Female

年齡：57 y/o

主訴或重要病史或物理檢查：abdominal fullness



RMN

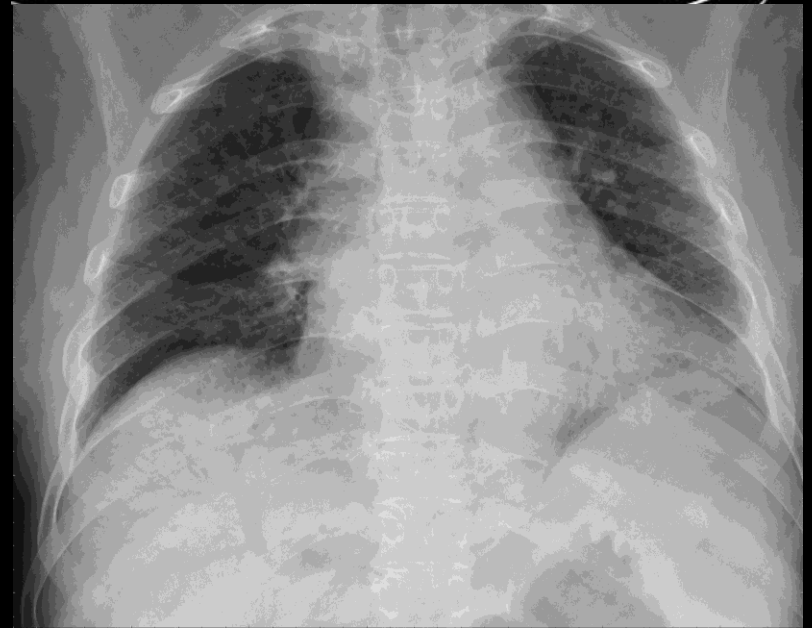
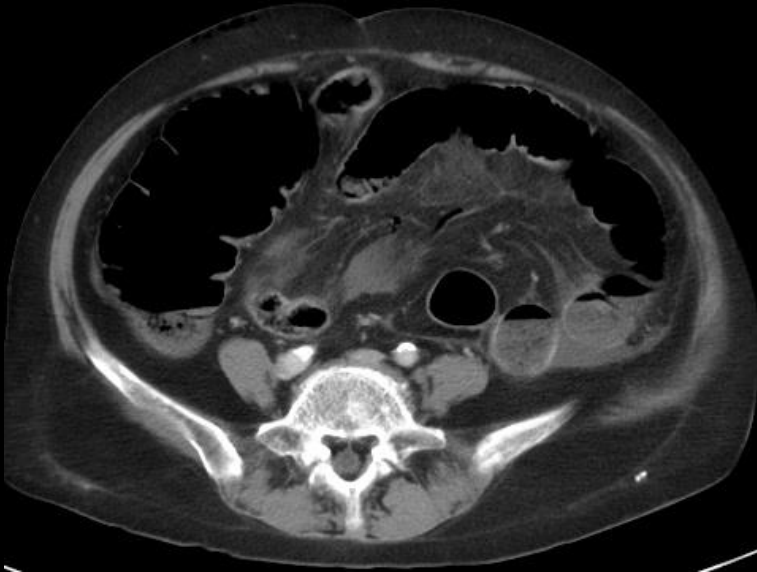
ANS: Encapsulated sclerosing
peritonitis

Q21

性別：Male

年齡：65 y/o

主訴或重要病史或物理檢查：Acute onset abdominal pain



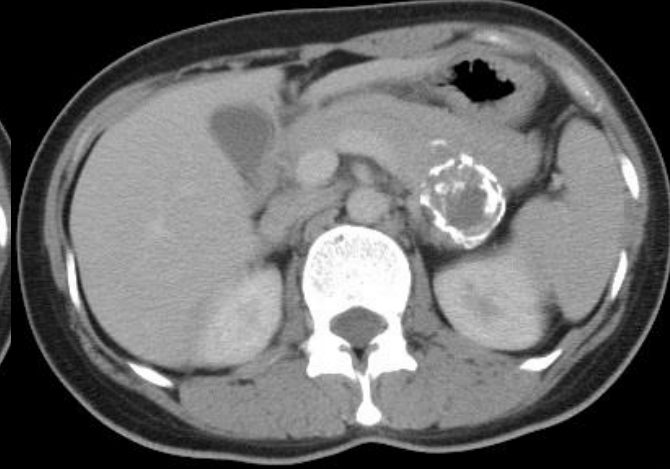
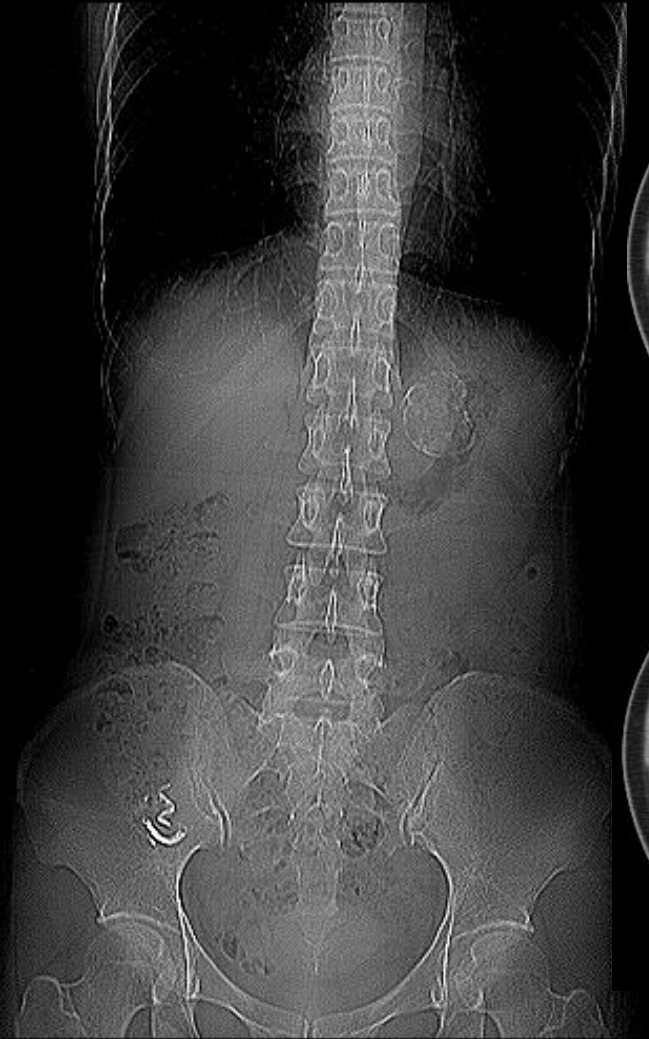
ANS: Ischemic enteritis with portal
vein air

Q22

性別：Female

年齡：34 y/o

主訴或重要病史或物理檢查：LUQ abdominal pain off
and on for 2 months



ANS: Solid and papillary epithelial
neoplasm (SPEN)

Q23-1

Female 14 year-old

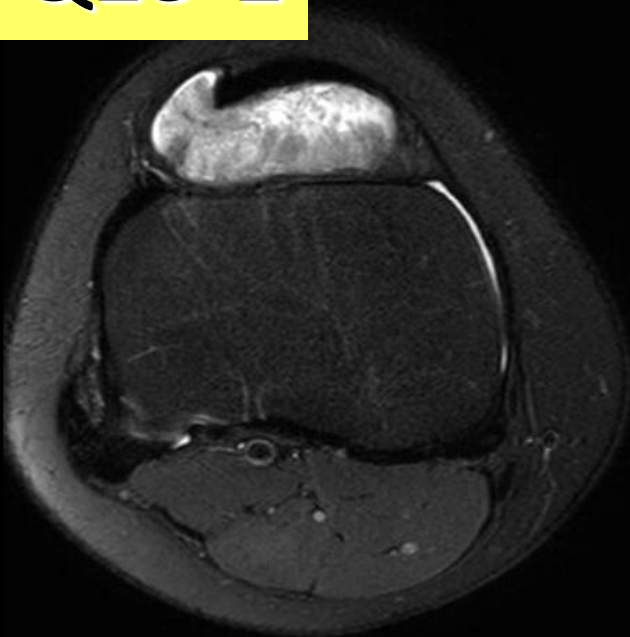
Right knee pain for 2 months

本題有三張投影片
第一張

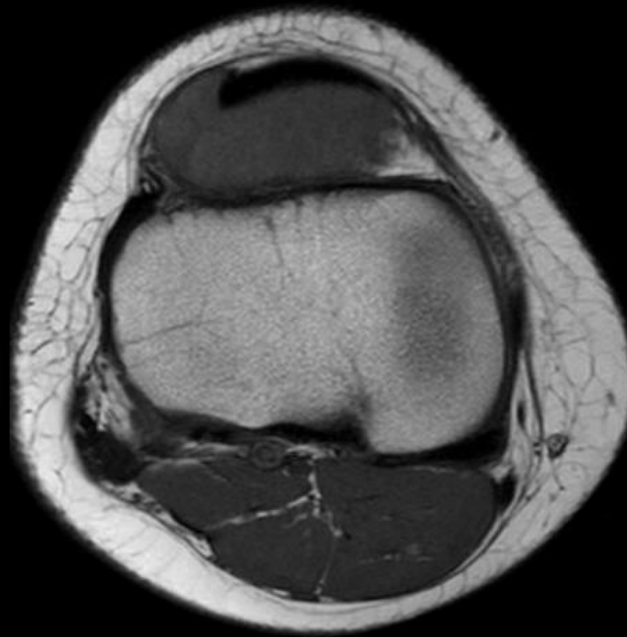


Q23-2

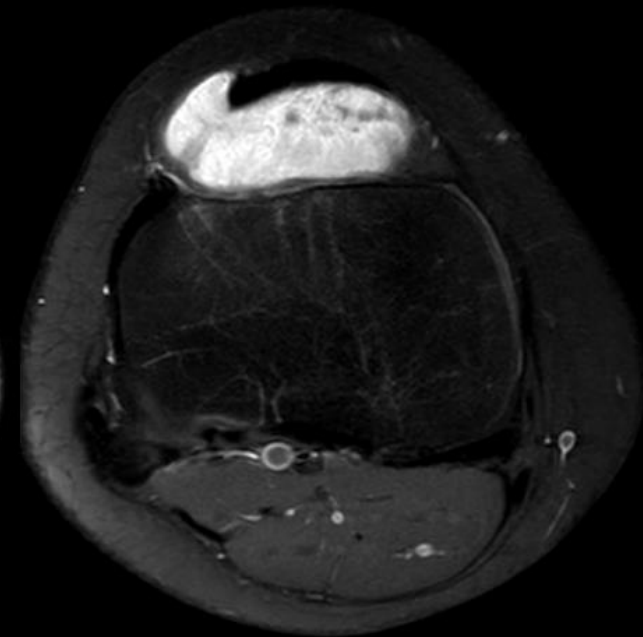
本題有三張投影片，第二張



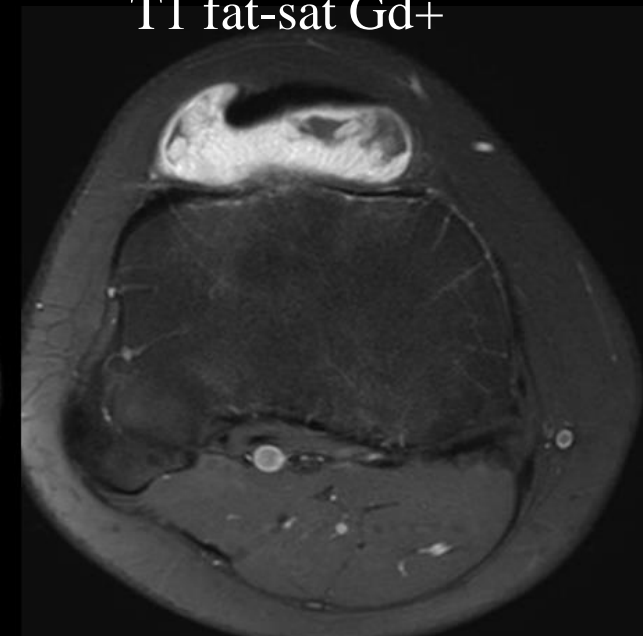
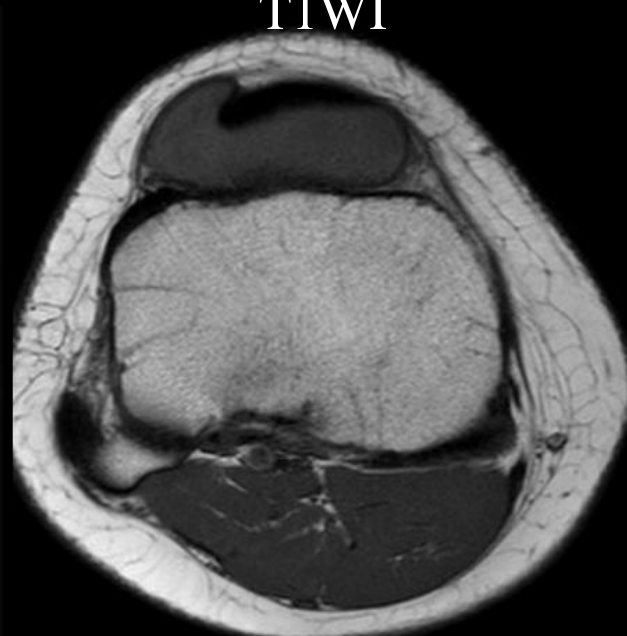
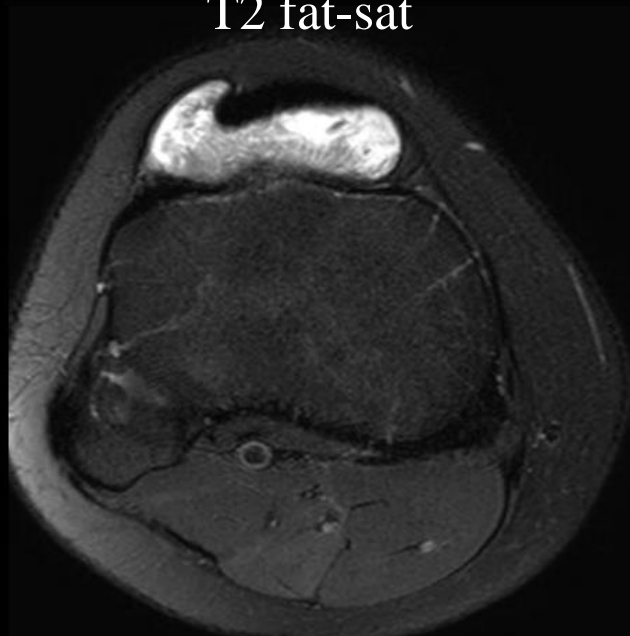
T2 fat-sat



T1WI



T1 fat-sat Gd+



Q23-3

本題有三張投影片，第三張



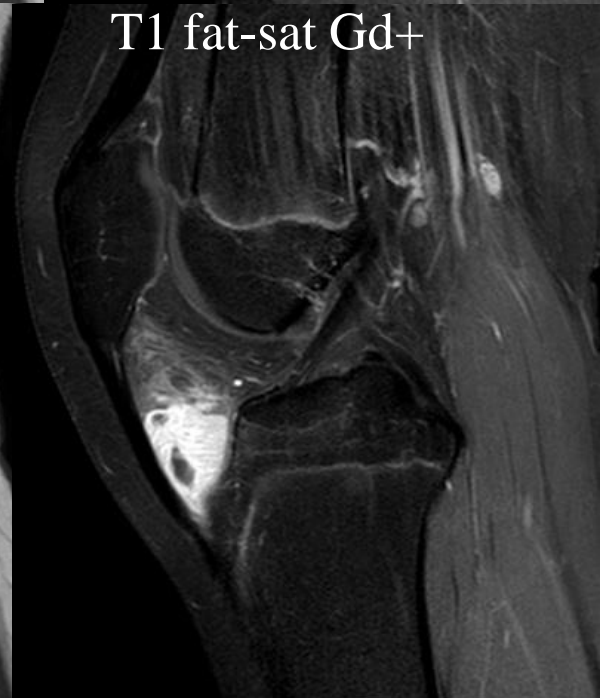
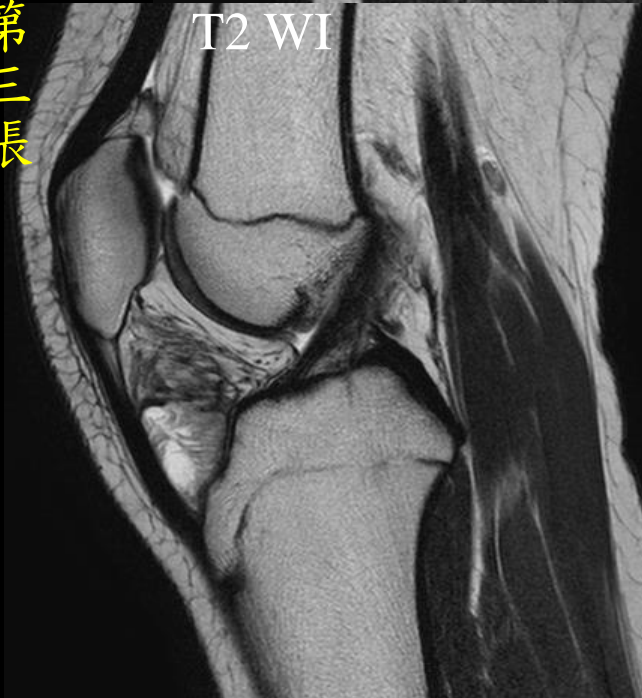
T2 WI



T1WI



T1 fat-sat Gd+



ANS: Pigmented villonodular
synovitis

Q24-1

Male 38 year-old
Back pain after slip down

本題有二張投影片，第一張



Q24-2

本題有二張投影片，第二張



ANS: Transvertebral fracture in AS

Q25

Male 45 year-old

Left knee in recent months. Tenderness over knee joint line,
Genu varus. No trauma. DM for years



ANS: DM neuroarthropathy

Q26

Male 20 year-old

Right ankle pain. Had gouty arthritis history since high school



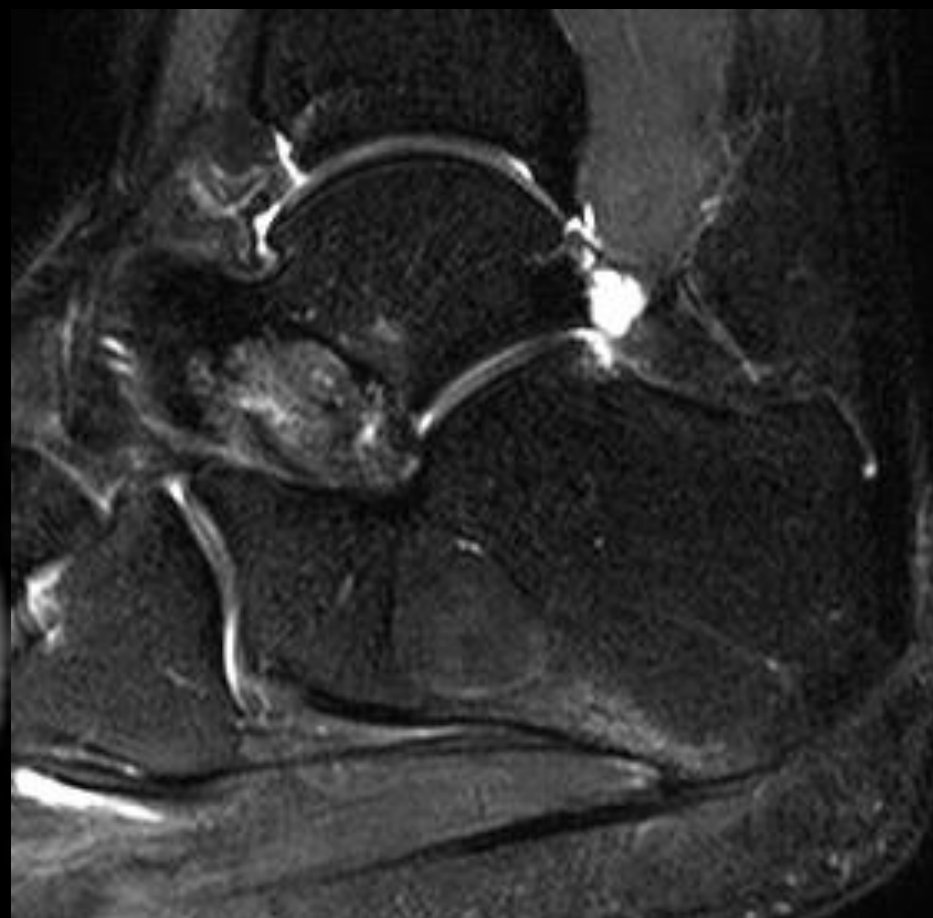
ANS: Talocalcaneal coalition

Q27

**Female 30 year-old
Bilateral heel pain for 1 year**



ANS: Intra-osseous lipoma



Q28

What's your
diagnosis ?

性別：Male

年齡：18



ANS: Intra-osseous gout

Q29

What's your diagnosis?

性別：Male

年齡：27



ANS: Hemophilic arthropathy,
right knee

Q30

Male 2 year-old

Deformity of left lower leg for 6+ months.

Unable to walk. Pain over left lower leg for weeks



ANS: Congenital pseudoarthrosis

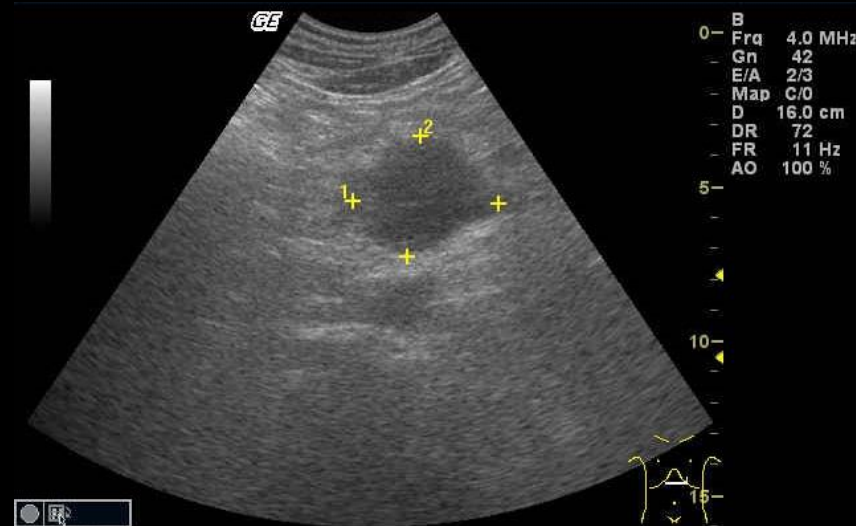
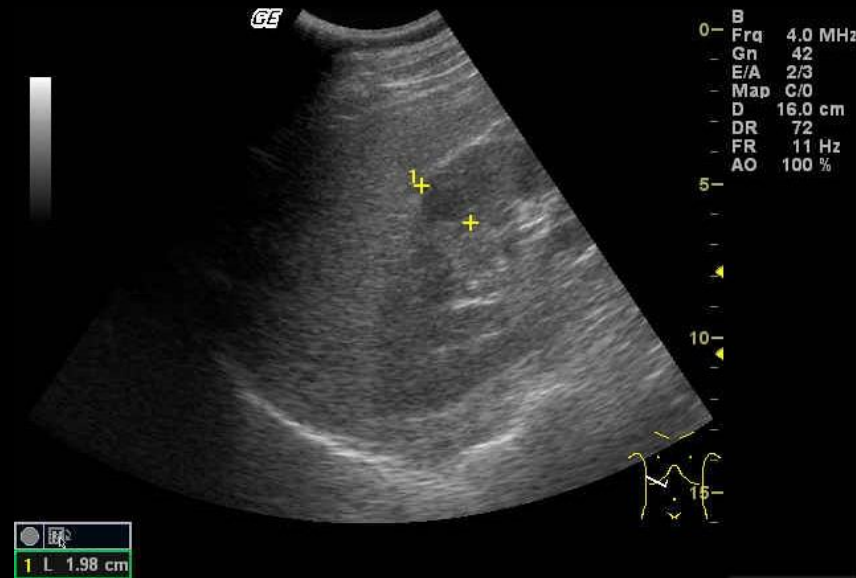
Q31-1

性別：Male

年齡：55

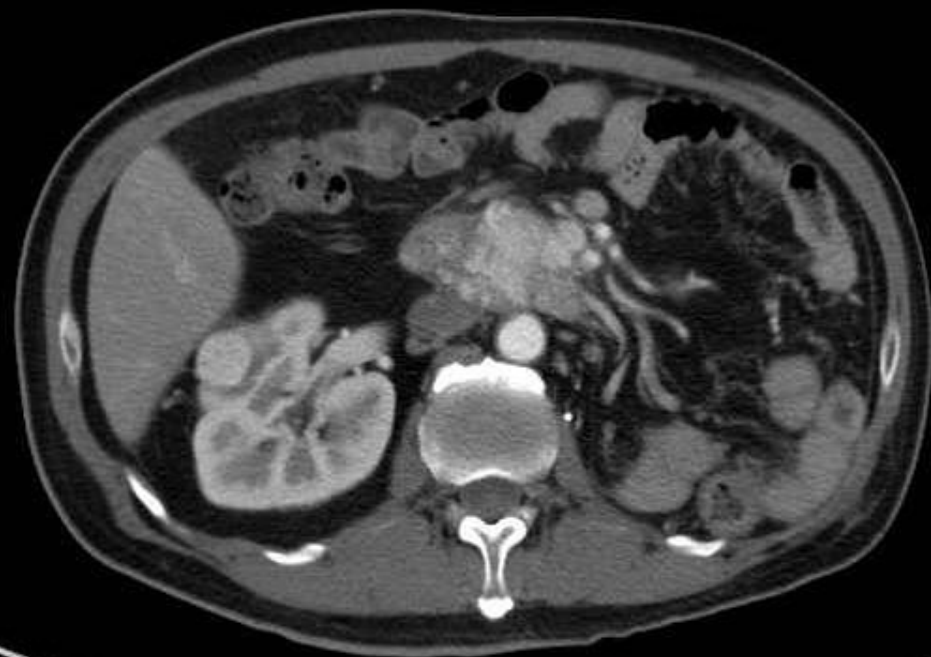
主訴或重要病史或物理檢查：RCC of left kidney about six years ago post left nephrectomy

本題有二張投影片，第一張



Q31-2

本題有二張投影片，第二張



ANS: Metastatic renal cell carcinoma in the right kidney and pancreas, (Gallstone)

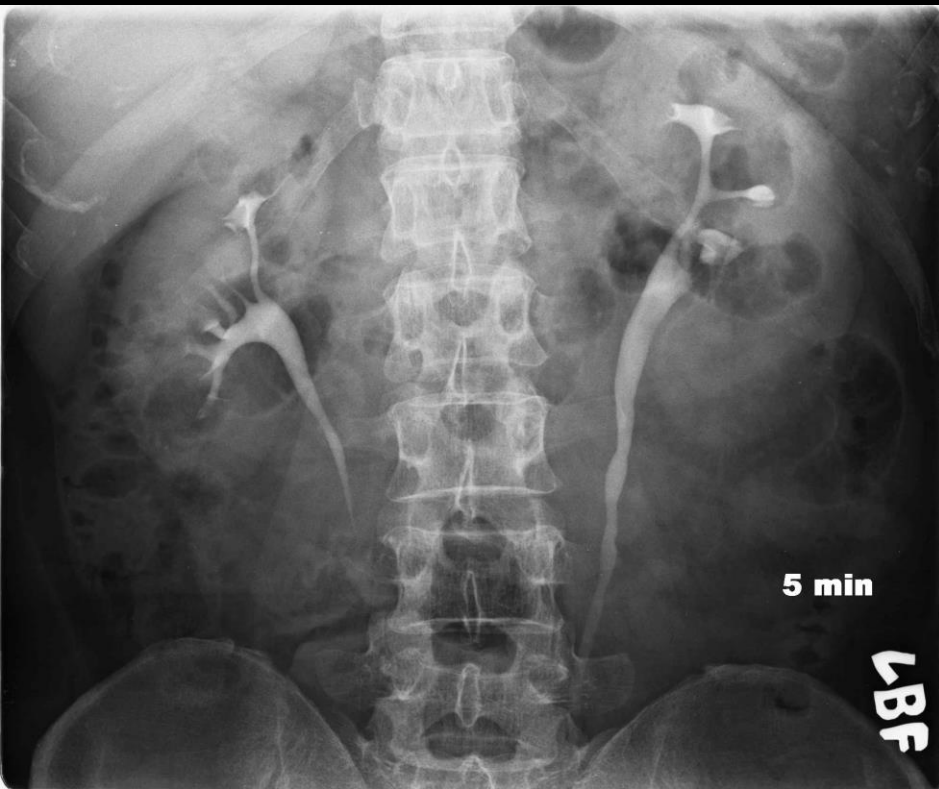
Q32-1

性別：Male

年齡：52

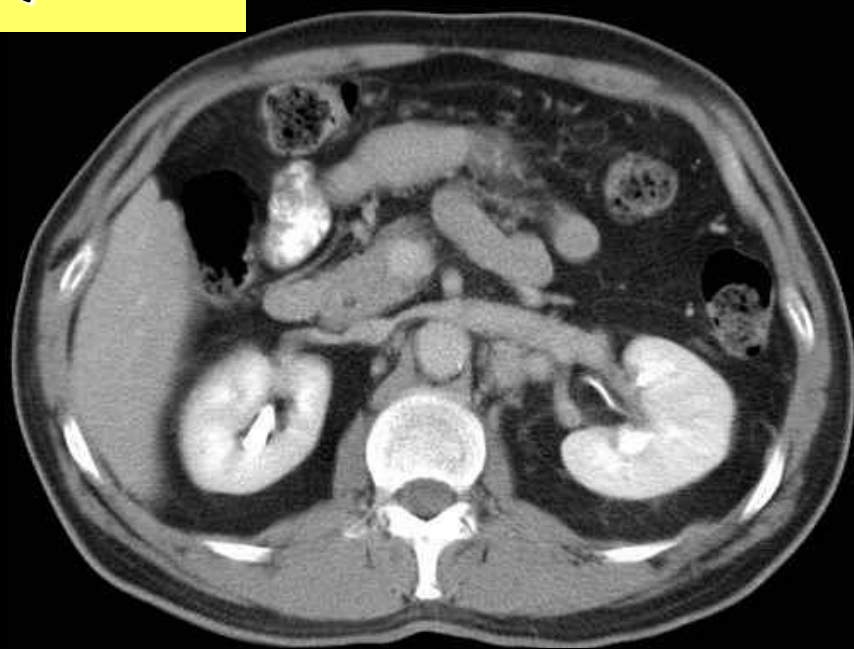
主訴或重要病史或物理檢查：Painless gross hematuria off and on for one month

本題有二張投影片，第一張



Q32-2

本題有二張投影片，第二張



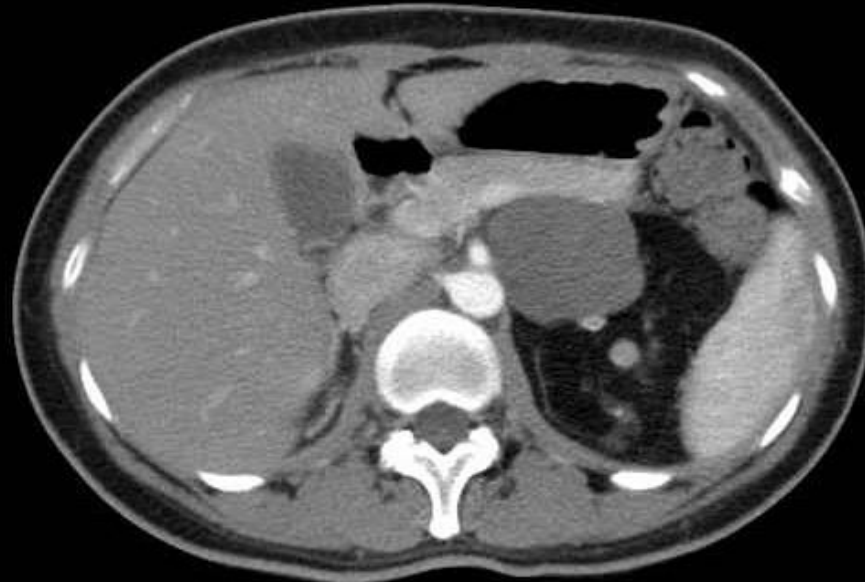
ANS: Left renal UC with lymph
node metastasis

Q33

性別：Female

年齡：30

主訴或重要病史或物理檢查：Supra-renal lesion was noted at LMD



ANS: Retroperitoneal mature
teratoma

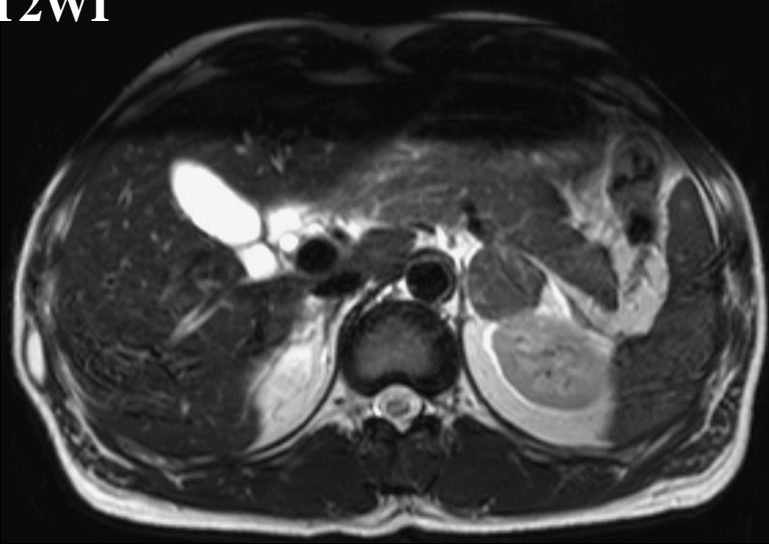
Q34

性別：Male

年齡：45

主訴或重要病史或物理檢查：Incidental found left adrenal tumor on CT scan

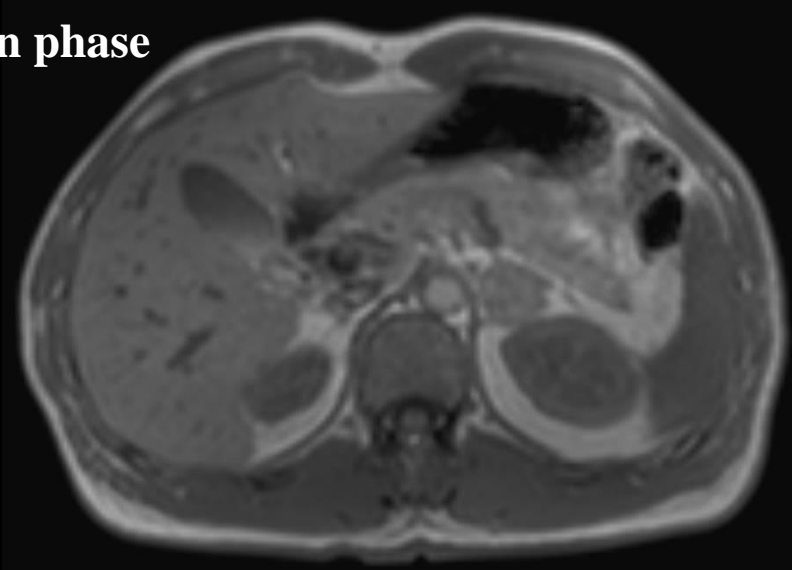
T2WI



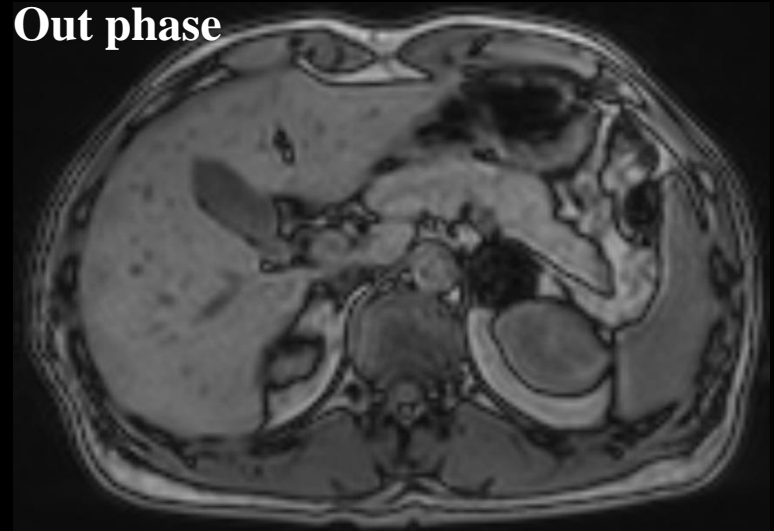
T2 with fat saturation



In phase



Out phase



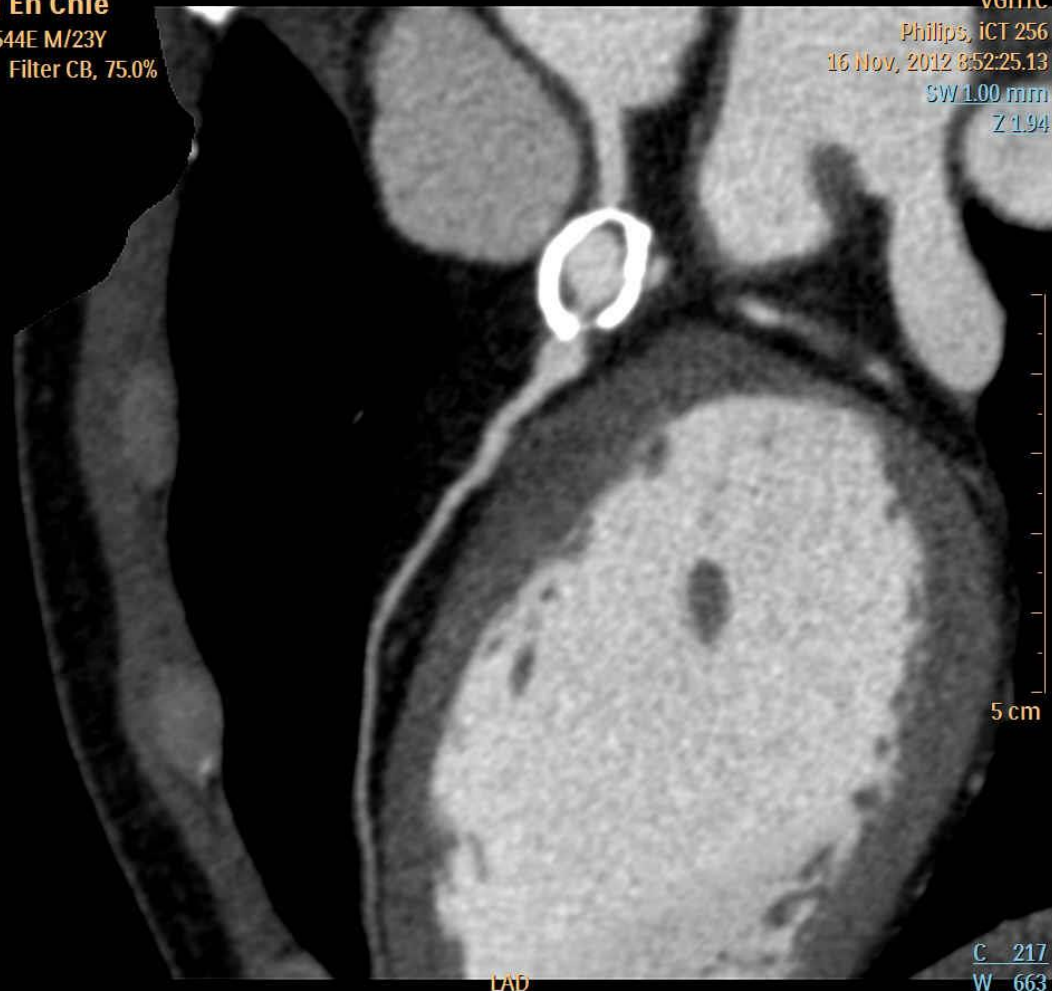
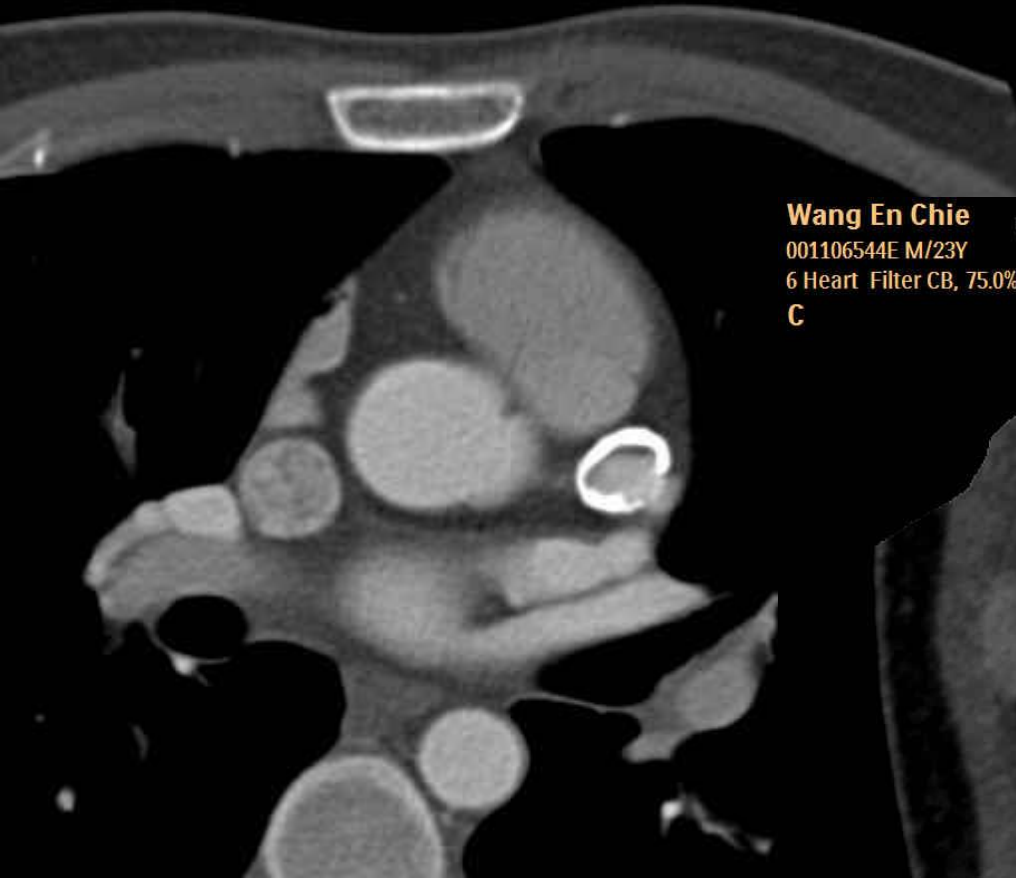
ANS: Cortical adenoma of left
adrenal gland

Q35-1

性別：male

年齡：23 y/o

主訴或重要病史或物理檢查：chest tightness and
dyspnea on exertion for months



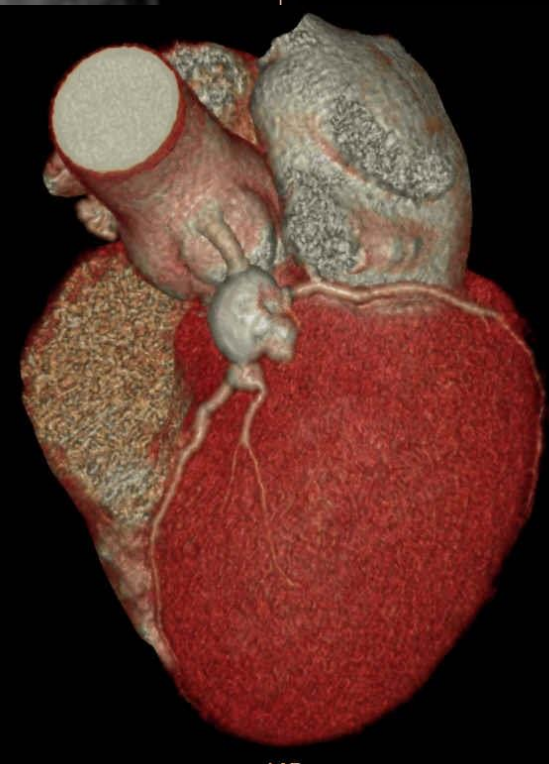
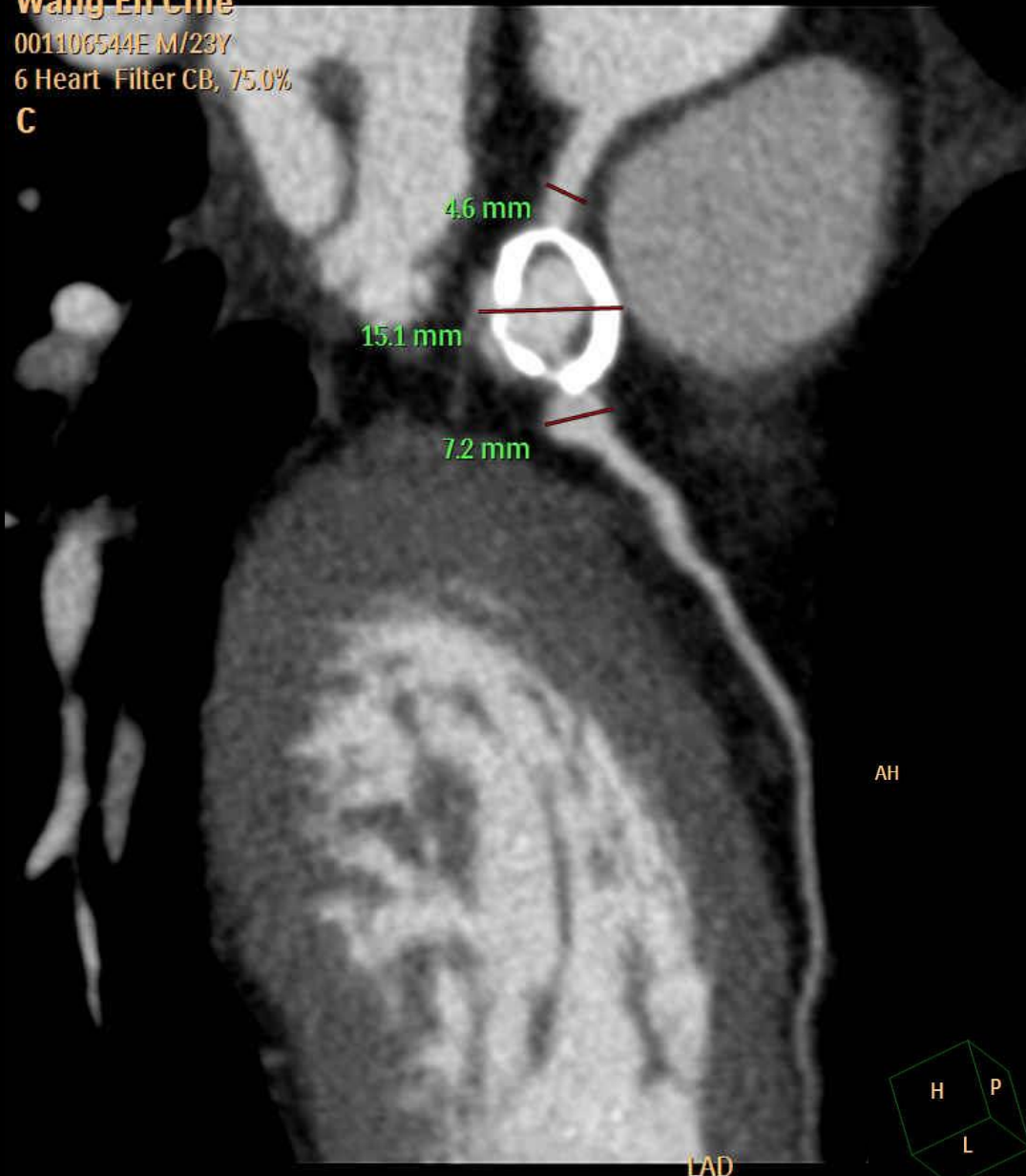
本題有二張投影片，第一張

Q35-2

本題有二張投影片，第二張

Wang En Chie
001106544E M/23Y
6 Heart Filter CB, 75.0%
C

VGHTC
Philips, iCT 256
16 Nov, 2012 8:52:25.13
SW 1.00 mm
Z 1.97



LAD

AH

LAF

5 cm

Ans: Kawasaki disease with aneurysm formation of left main coronary artery

Q36-1

性別：male

年齡：1 y/o

主訴或重要病史或物理檢查：mild tachypnea since birth

本題有三張投影片，第一張



Q36-2

本題有三張投影片，第二張



Q36-3

本題有三張投影片，第三張



Ans: Hypoplastic Left Heart Syndrome (HLHS) with ASD

Q37-1

性別：female

年齡：37 y/o

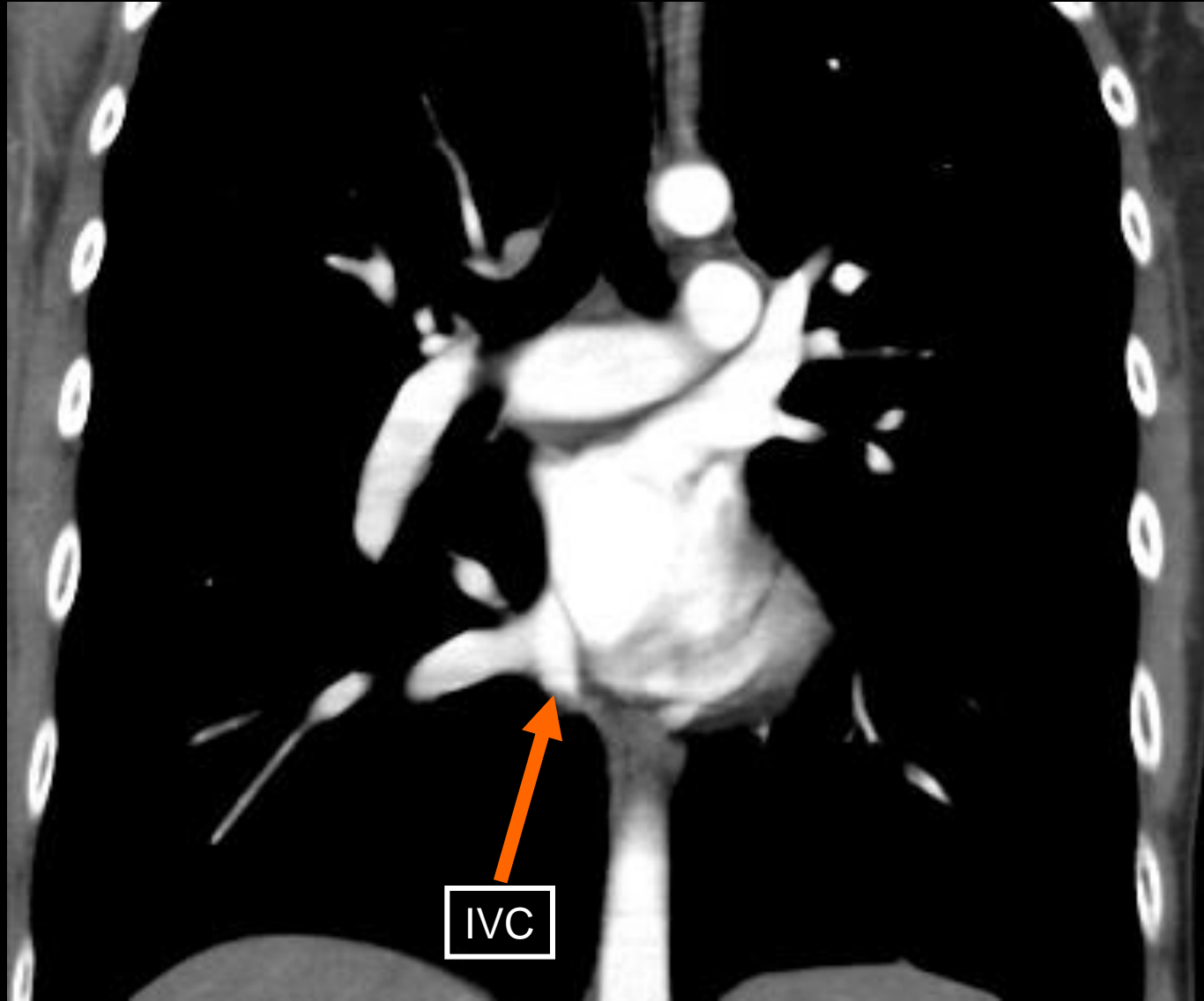
主訴或重要病史或物理檢查：easily fatigue,
exercise intolerance, frequent chest tightness

本題有三張投影片，第一張



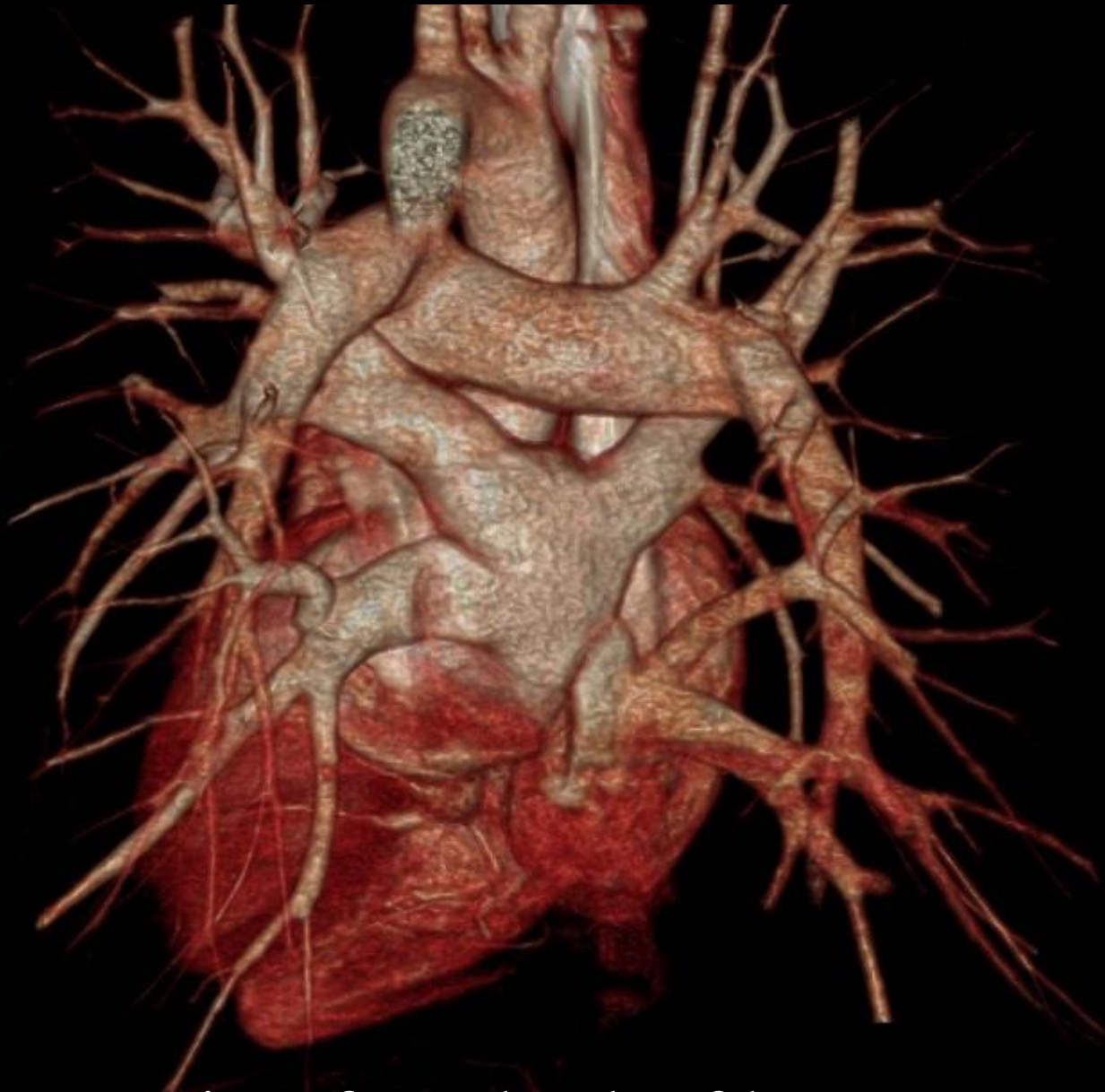
Q37-2

本題有三張投影片，第二張



Q37-3

本題有三張投影片，第三張



View form back of heart

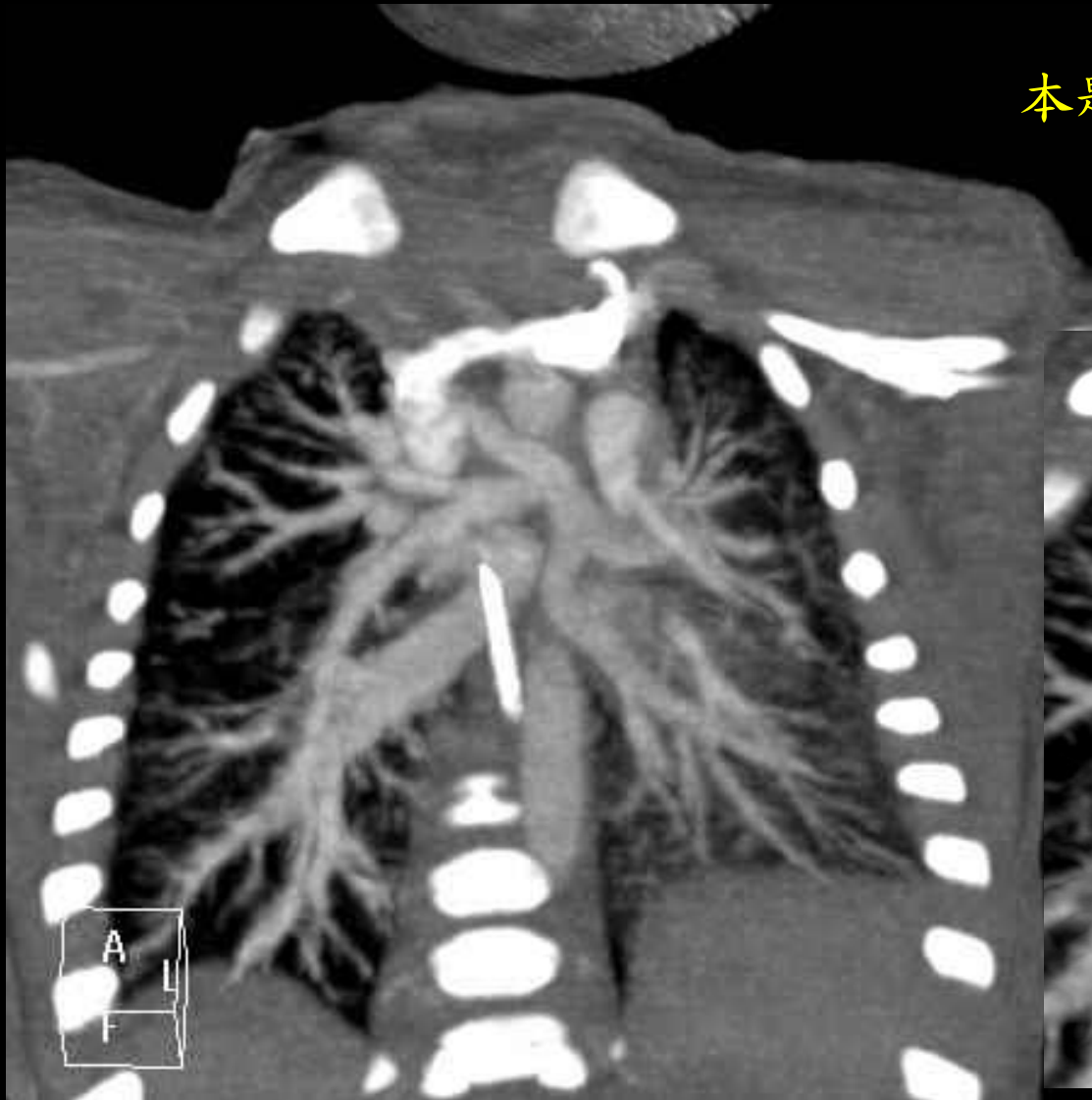
Ans: PAPVR (partial anomalous pulmonary venous return)

Q38-1

性別：female 年齡：1 m/o

主訴或重要病史或物理檢查：tachypnea, mild
suprasternal retraction

本題有三張投影片，第一張



Q38-2

本題有三張投影片，第二張



Q38-3

本題有三張投影片，第三張



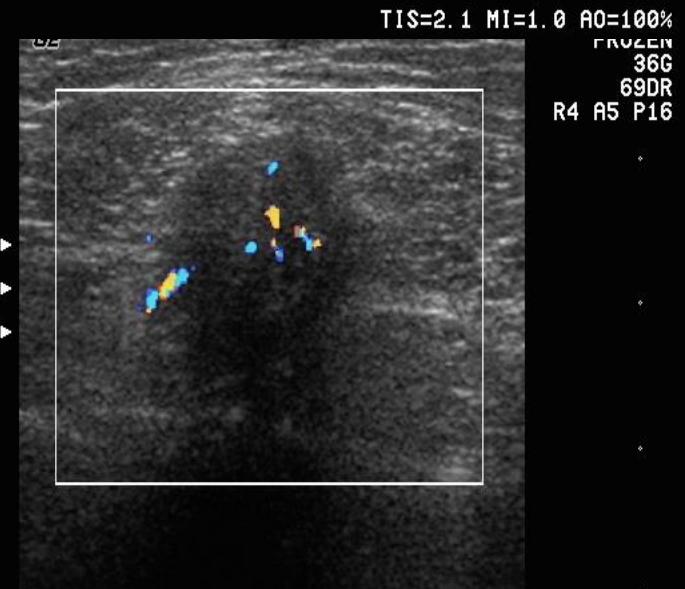
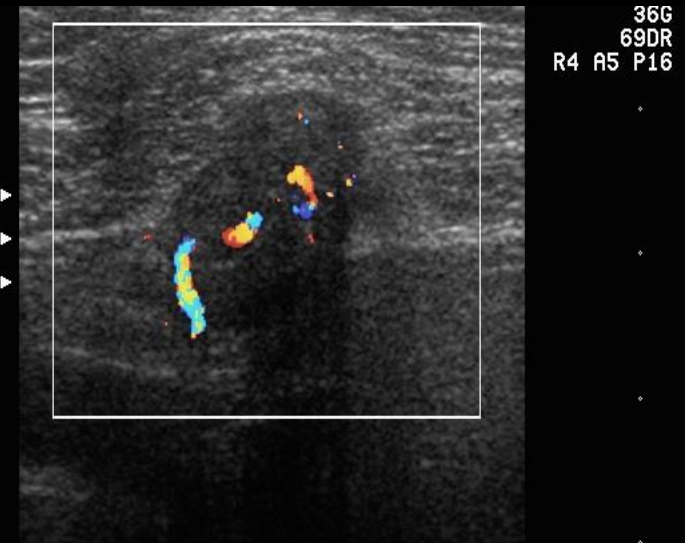
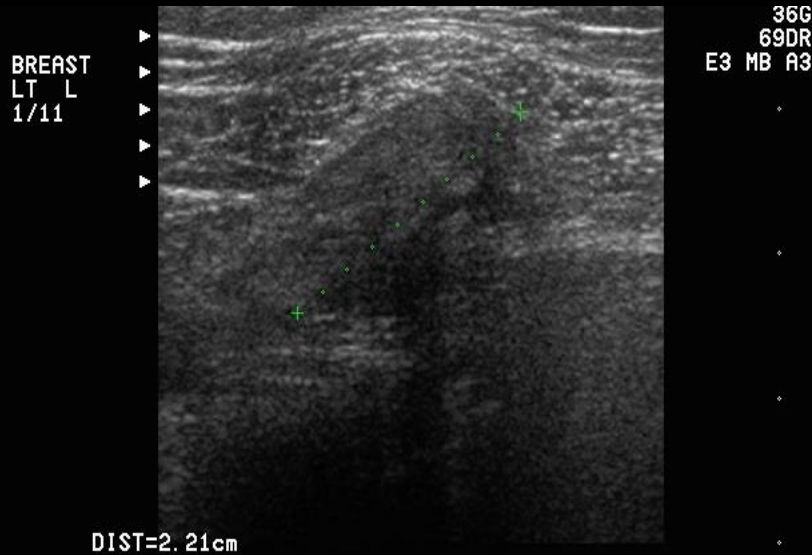
ANS: TAPVR (Total anomalous pulmonary venous return)

Q39-1

· 52 years old female
超音波所見病灶為何？

· Ca of right breast post OP

本題有三張投影片，第一張

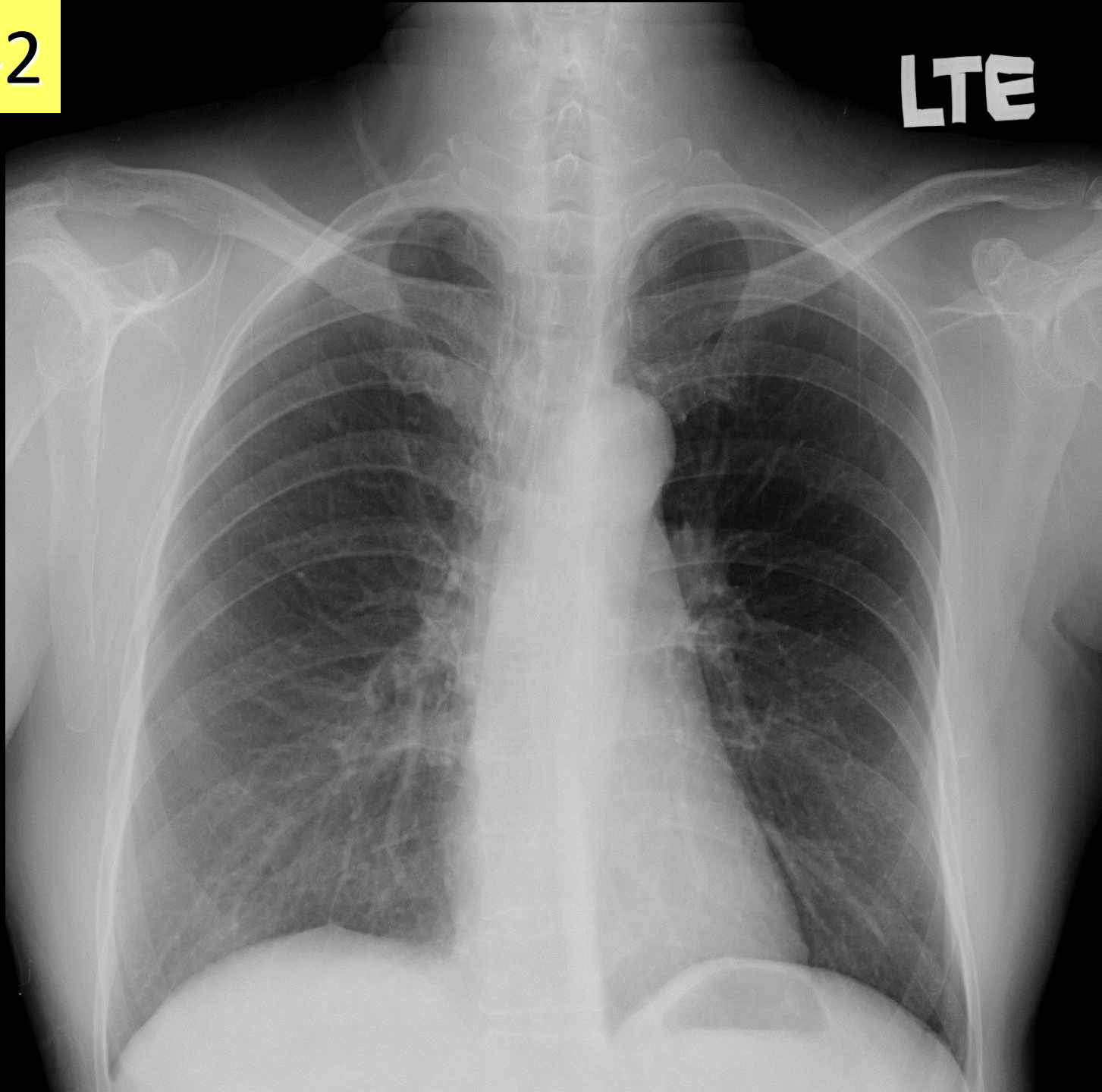


TIS=2.2 MI=1.1 AO=100%

Q39-2

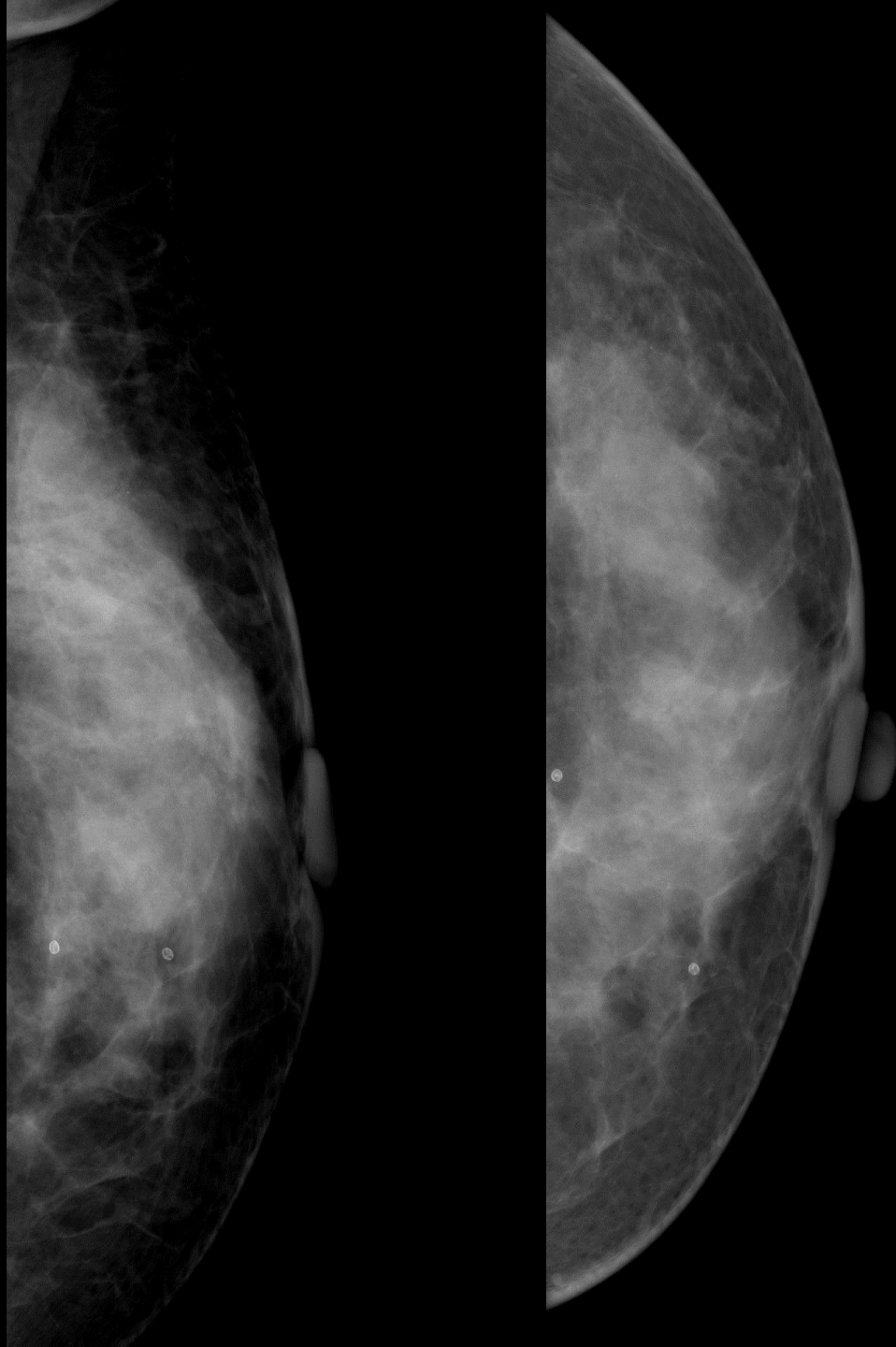
LTE

本題有三張投影片，第二張



Q39-3

本題有三張投影片，第三張

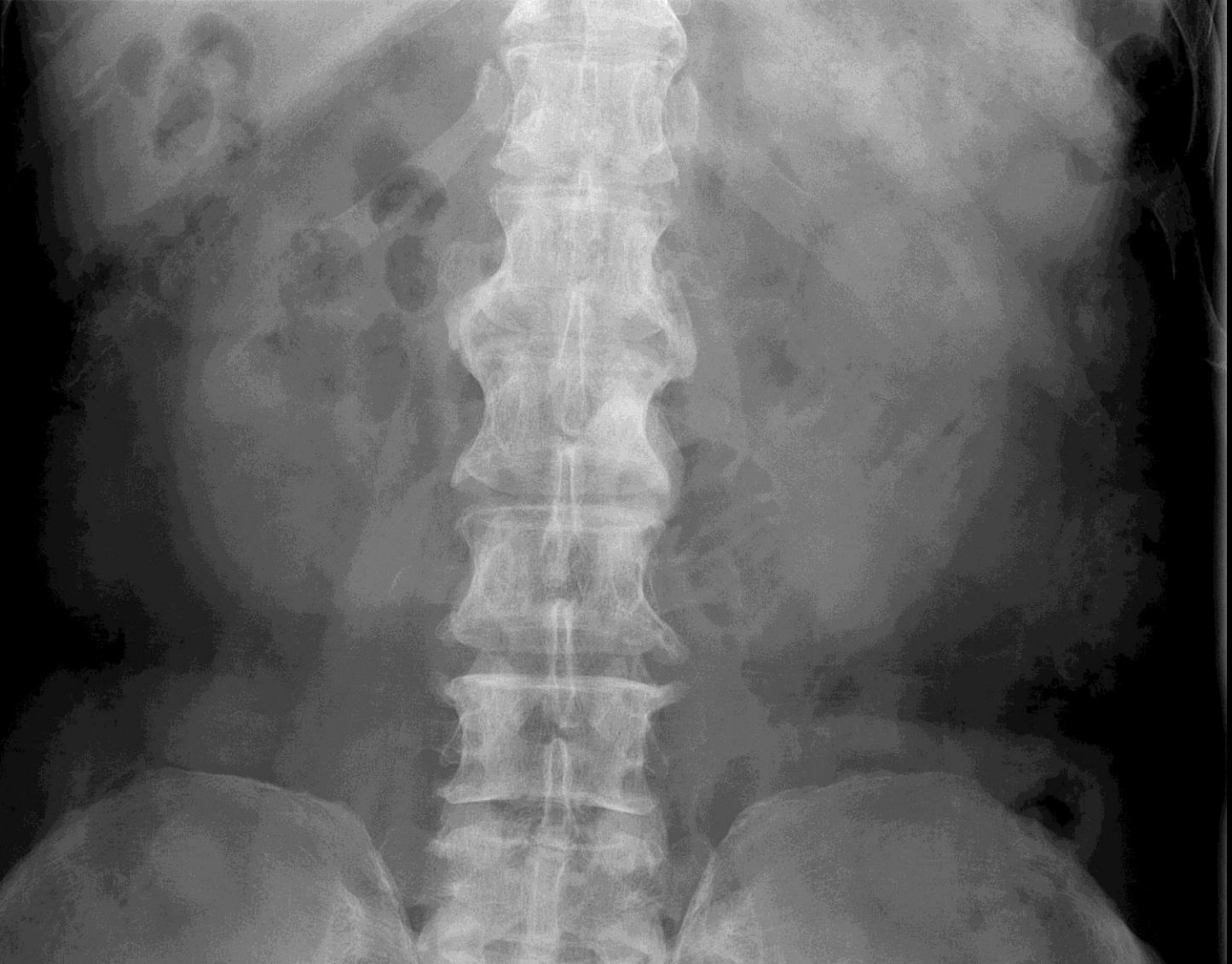


ANS: Rib metastasis, left first
(from breast Ca)

Q40-1

55 years old male
Routine physical
examination

本題有二張投影片，第一張



Q40-2



MI<0.4

本題有二張投影片，第二張



MI<0.4



MI<0.4



The DICOM image transferring completed

MI<0.4

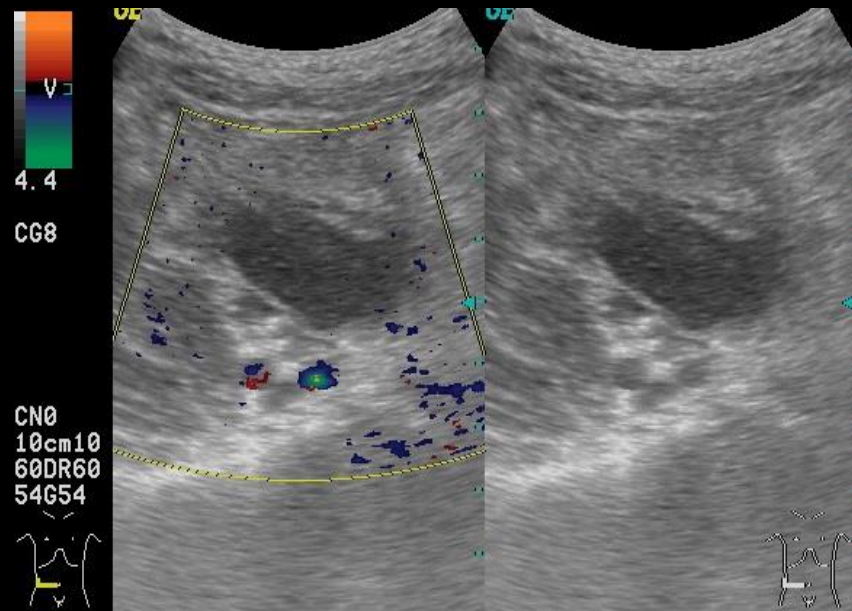
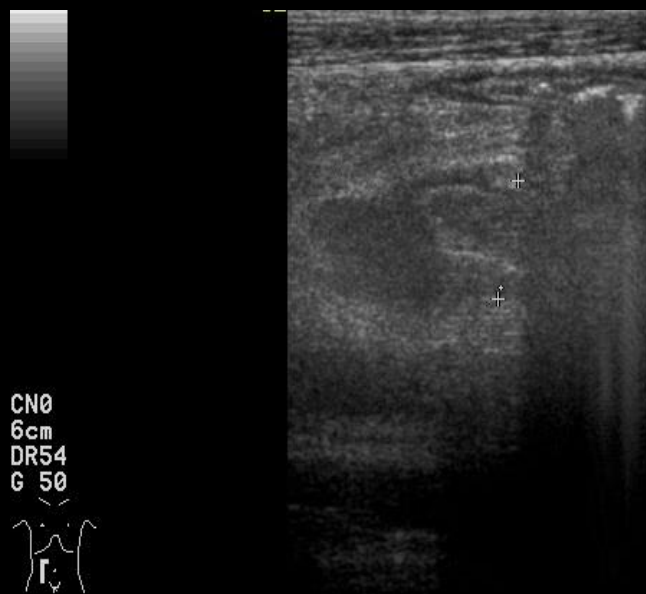
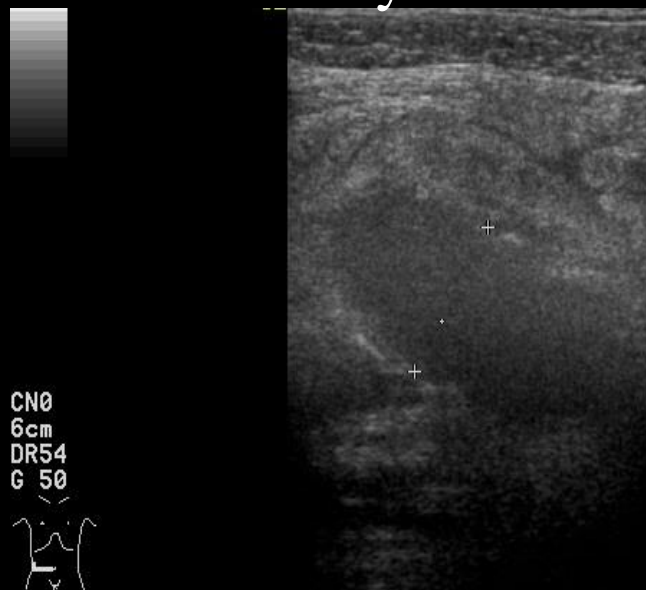
ANS: Horseshoe kidney

Q41

性別：Female

年齡：57

主訴或重要病史或物理檢查：RLQ pain, off and on for more than 5 days



ANS: Acute appendicitis with
rupture

Q42-1

性別：Female

年齡：87

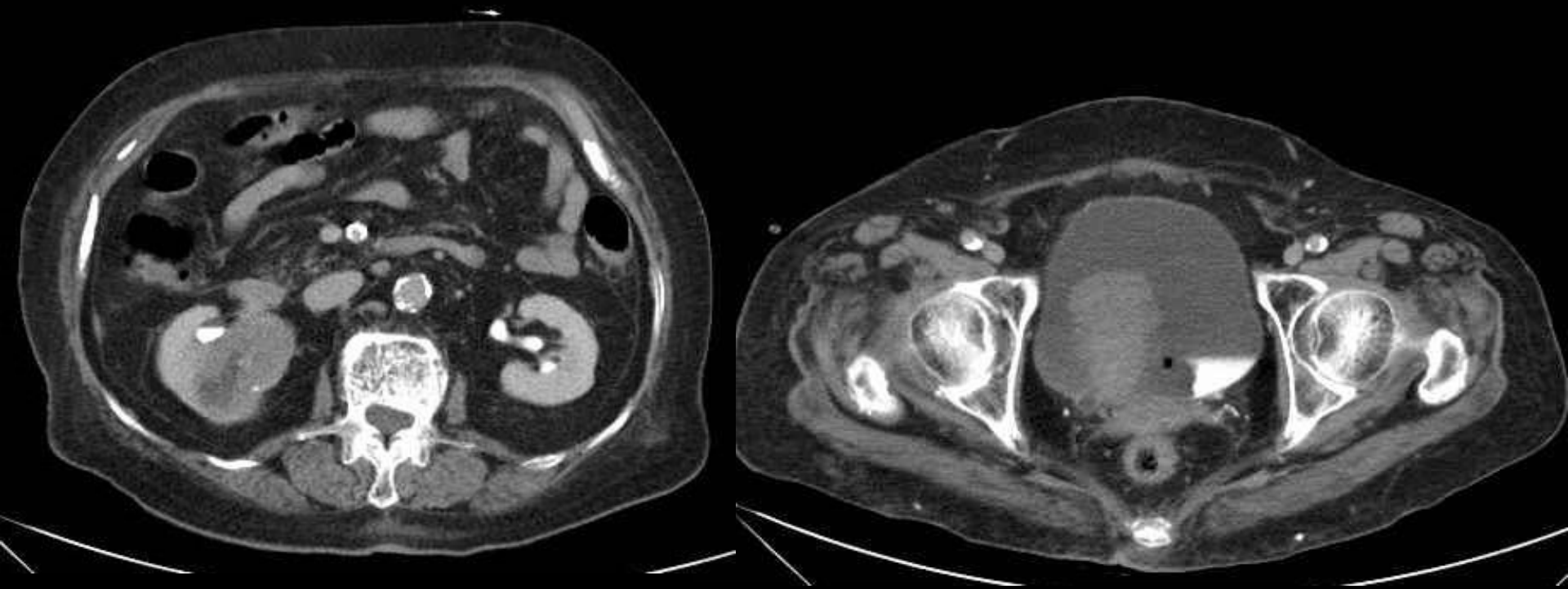
主訴或重要病史或物理檢查：Hematuria for several days



本題有二張投影片，第一張

Q42-2

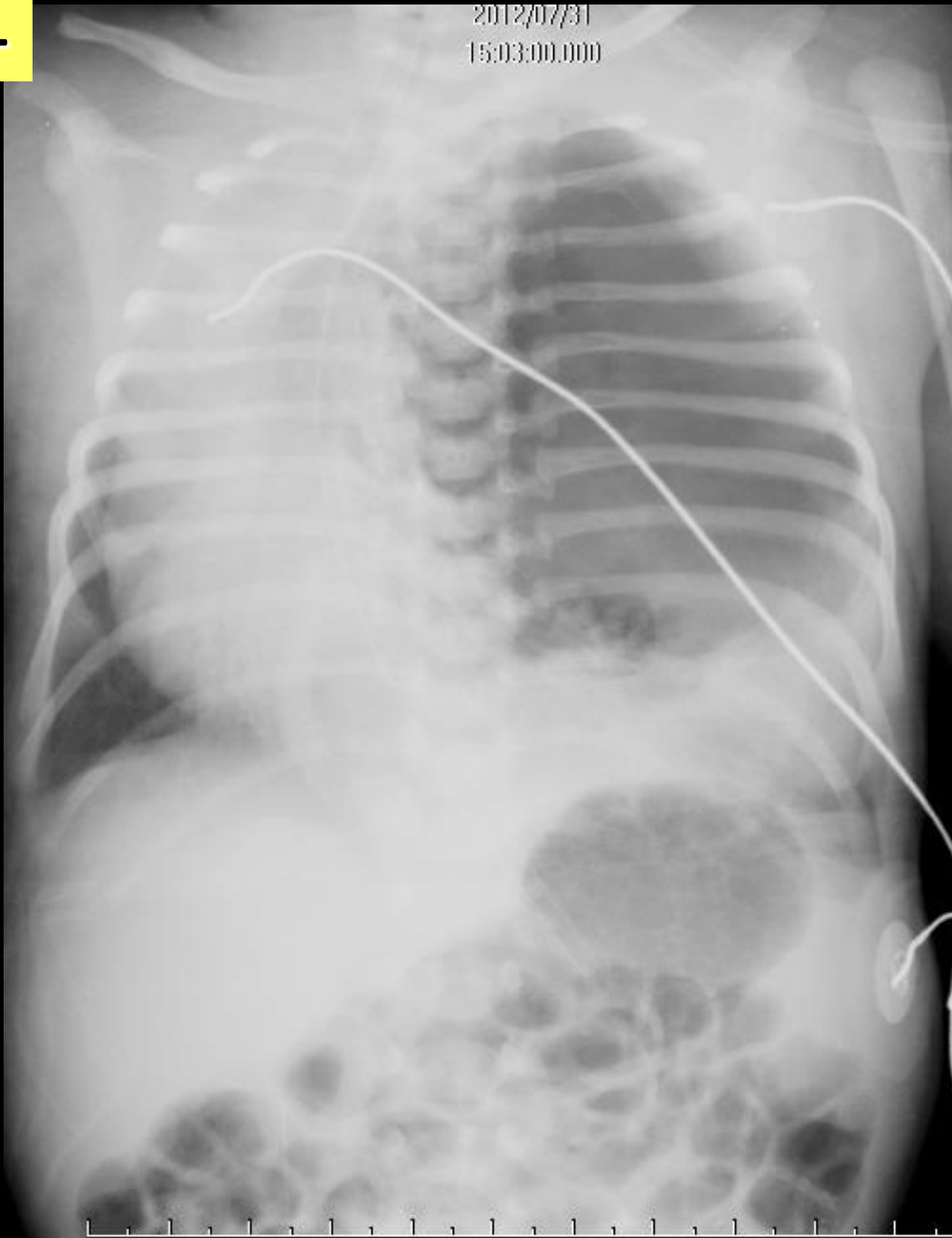
本題有二張投影片，第二張



ANS: Synchronous urothelial cell carcinoma in the right renal pelvis and urinary bladder

Q43-1

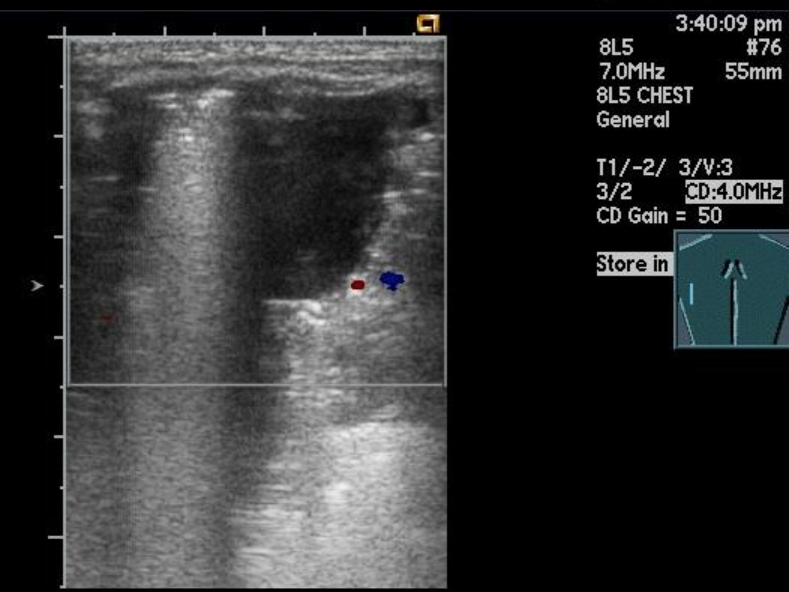
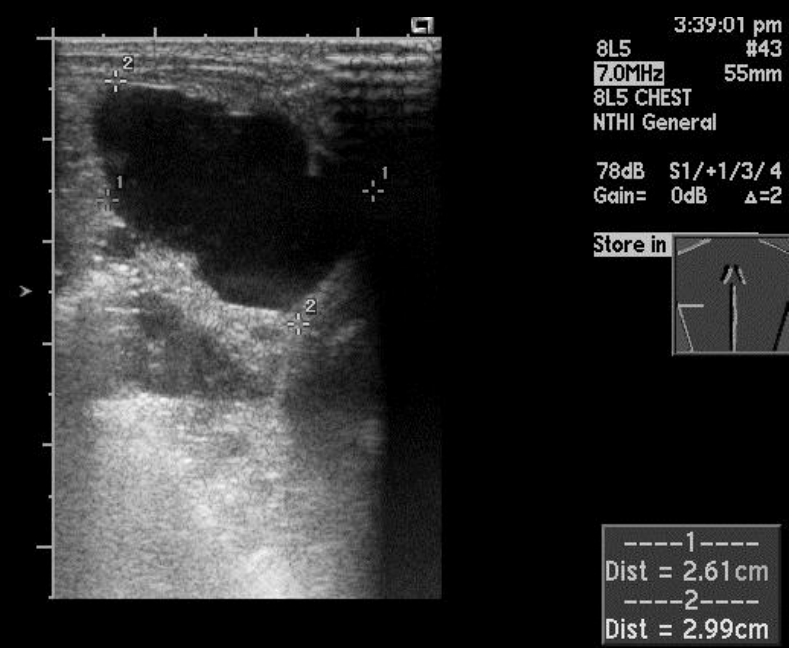
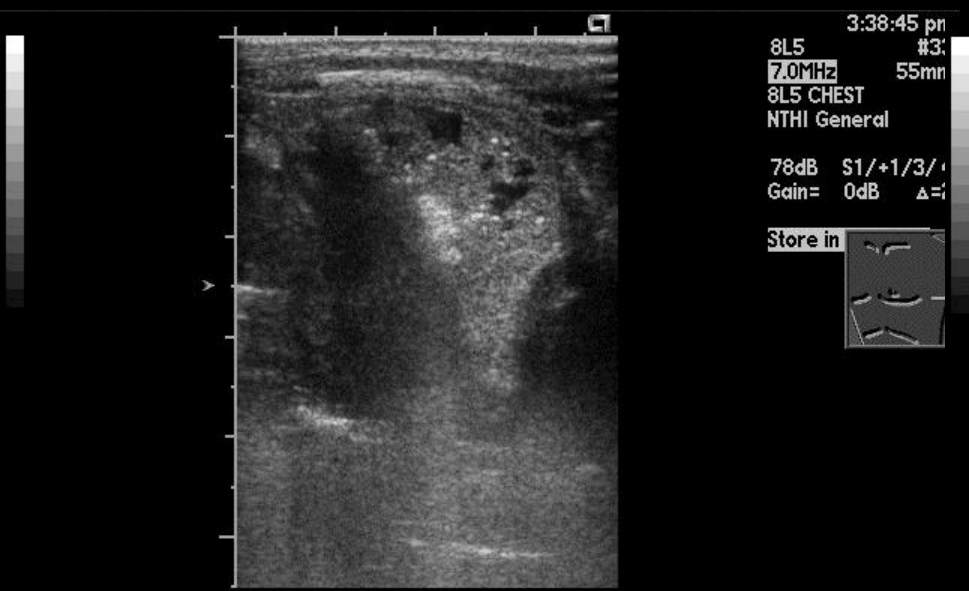
本題有二張投影片，第一張



- 1 d/o male infant, birth hx: GA 40+2wk, BBW 2506gm
- Prenatal exams showed pleural effusion since GA 21wk
- Respiratory distress with cyanosis noted 3 hours after birth

Q43-2

本題有二張投影片，第二張



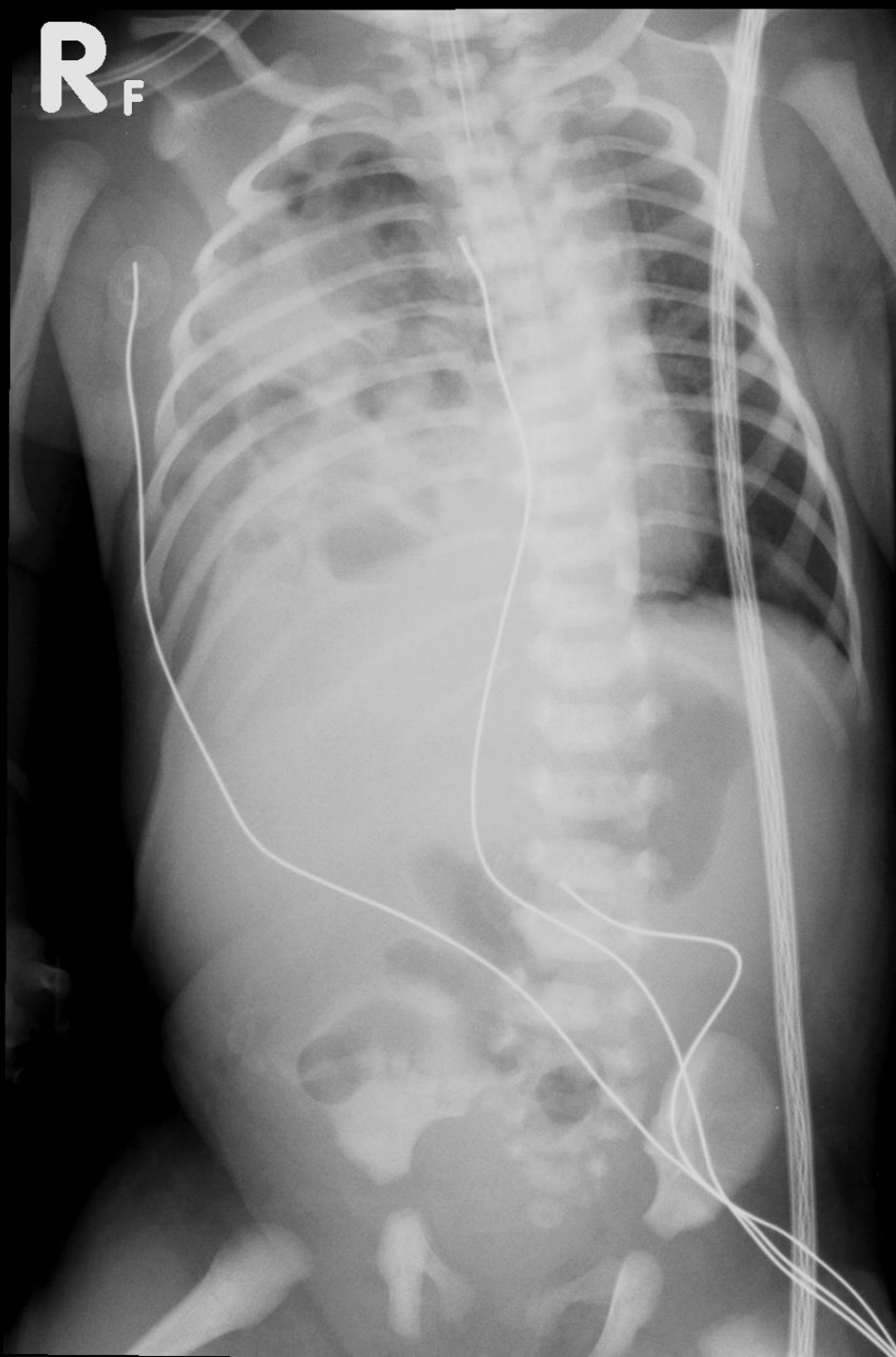
ANS:

- OP finding: congenital lung cyst, LLL
- Pathology: Congenital cystic adenomatoid malformation, type 1

Q44-1

R_F

本題有二張投影片，第一張

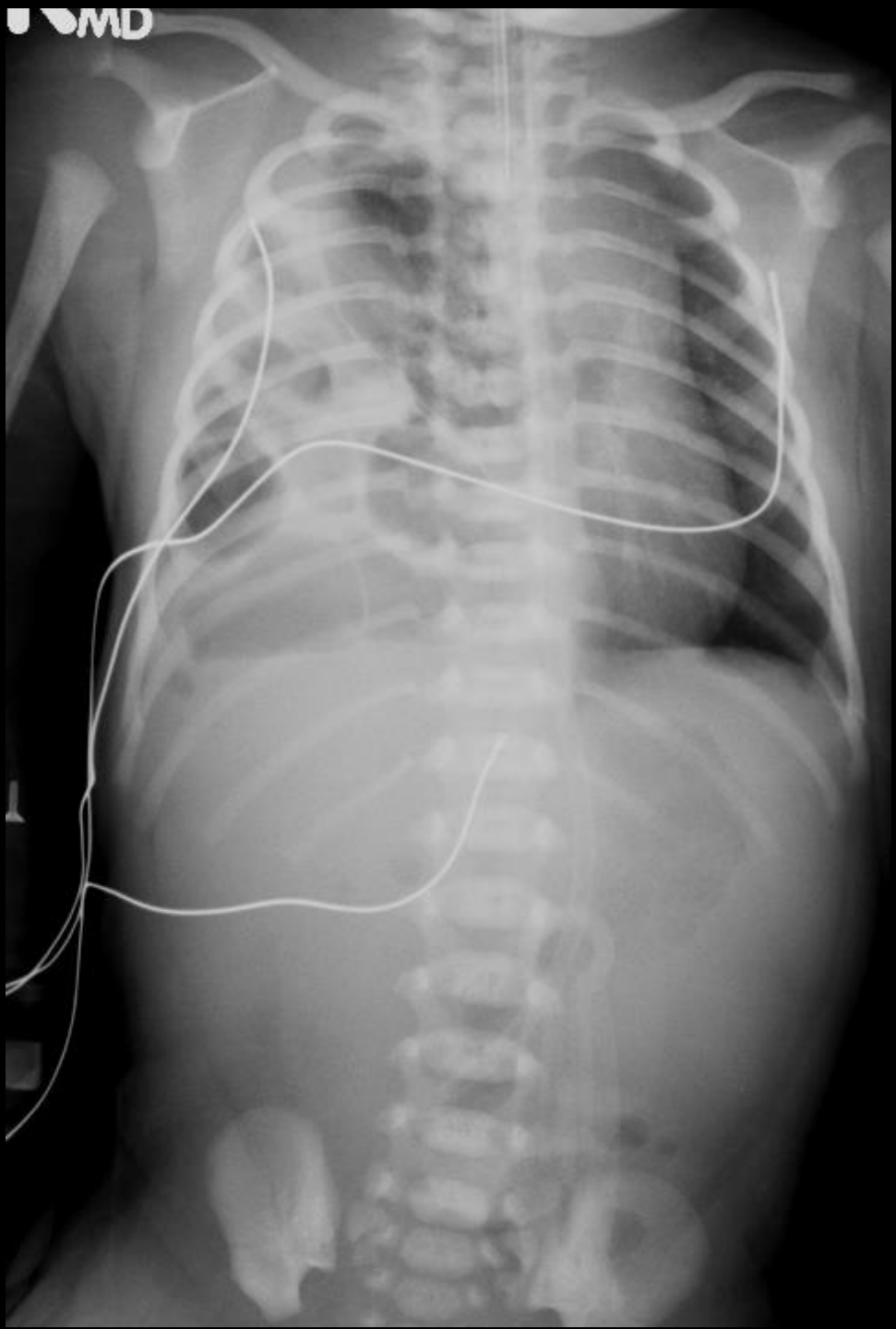


1 d/o female
newborn,
presented with
bradycardia and
cyanosis after
birth

Q44-2

本題有二張投影片，第二張

- After ambu-bagging and ventilation for 1 hour



ANS: Congenital
diaphragmatic hernia,
right side

Q45



- A one day old baby boy
- GA 39Wk BW 3286g
- NSD with Apgar score 3'->7'.

ANS: Gastroschisis

Q46-1

性別：male

年齡：3

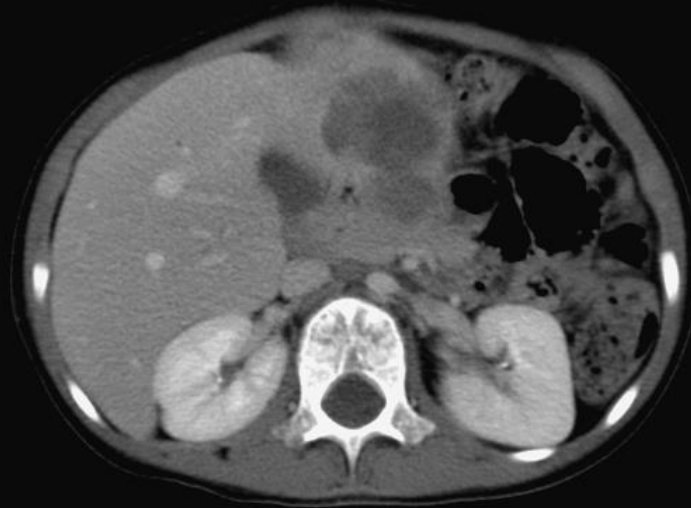
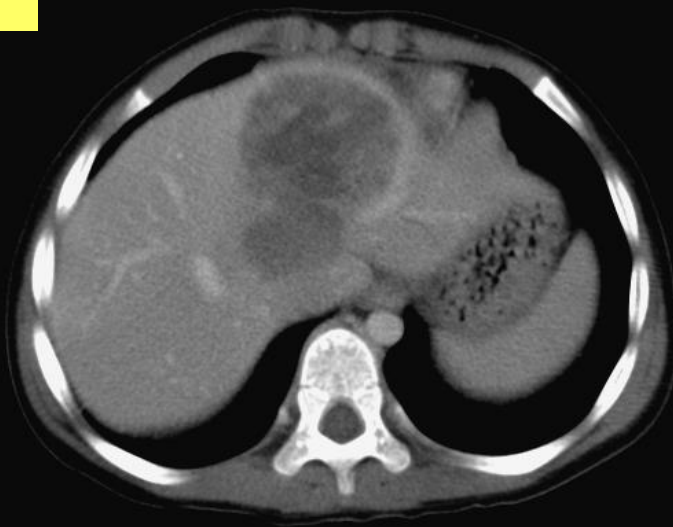
主訴或重要病史或物理檢查：Palpable abdominal mass

本題有二張投影片，第一張



Q46-2

本題有二張投影片，第二張



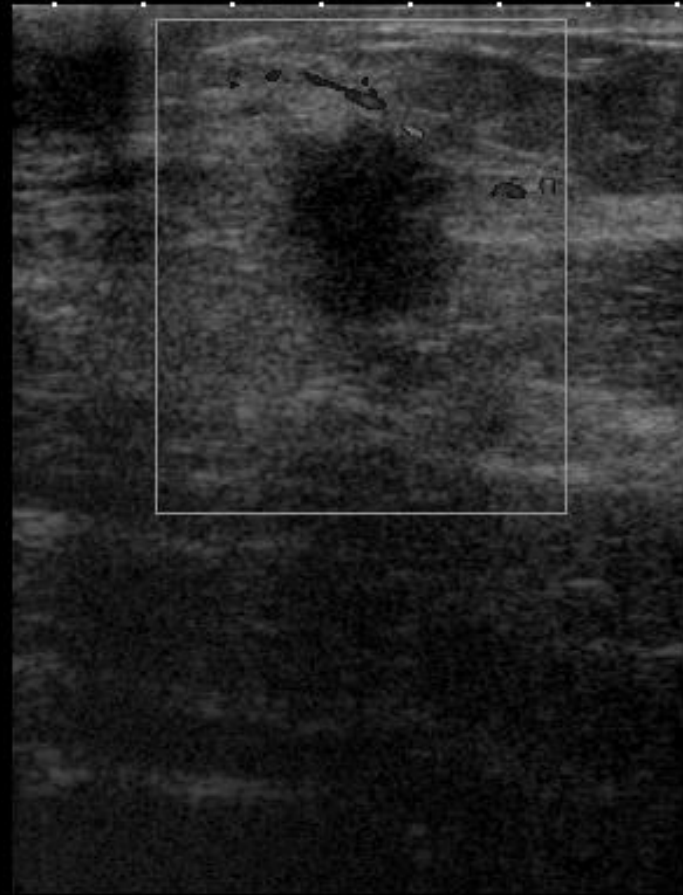
ANS: Hepatoblastoma

Q47

- Q1: BI-RADS ?
- Q2: Diagnosis ?



Rt Breast L 3 /SAI



Rt Breast T 3 /SA

- Ans (1): **BIRADS category 5 or 4c**
- Ans (2): **Breast cancer**

Q48

性別：Female

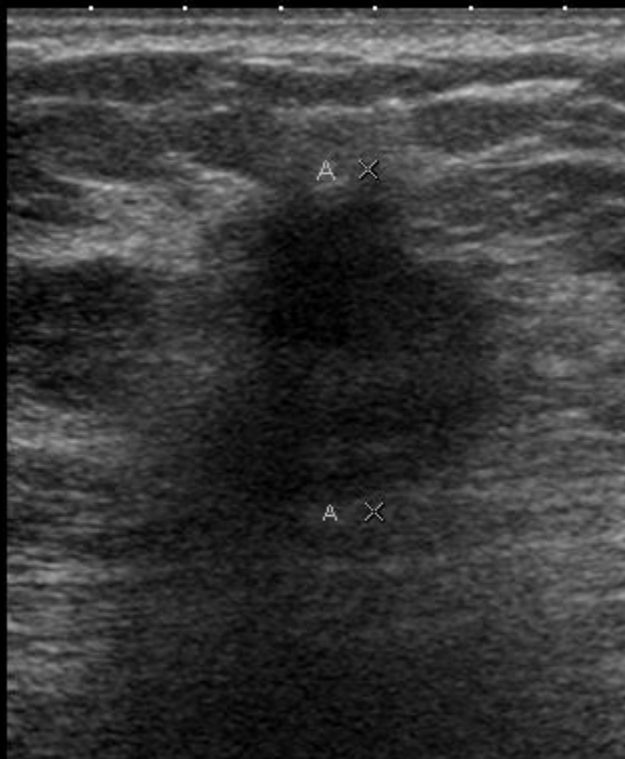
年齡：59 year-old

主訴或重要病史或物理檢查：palpable right breast nodule for 1 year

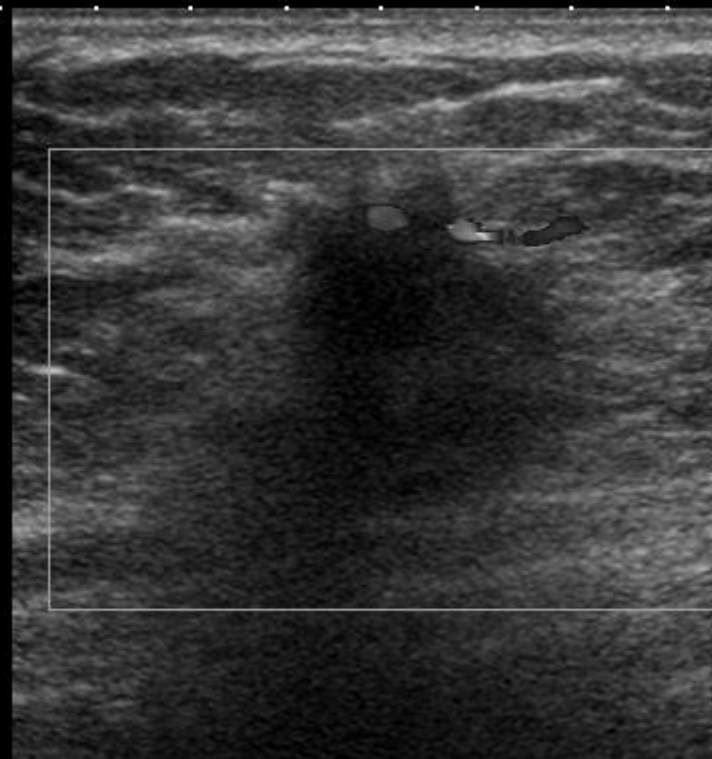
Q1: BI-RADS ?

Q2: Diagnosis ?

0 ♦
.
.
1 ♦
.
.
2 ♦ ▶
.
.
3 ♦ ▶
.
.
4 ♦



RT BREAST L 8/4



RT BREAST L 8/4

- Ans (1): **BIRADS category 5 or 4c**
- Ans (2): **Breast cancer**

Q49-1

性別：Female

年齡：42 year-old

主訴或重要病史或物理檢查：Breast mass noted for 1 week

本題有三張投影片，第一張

R-MLO



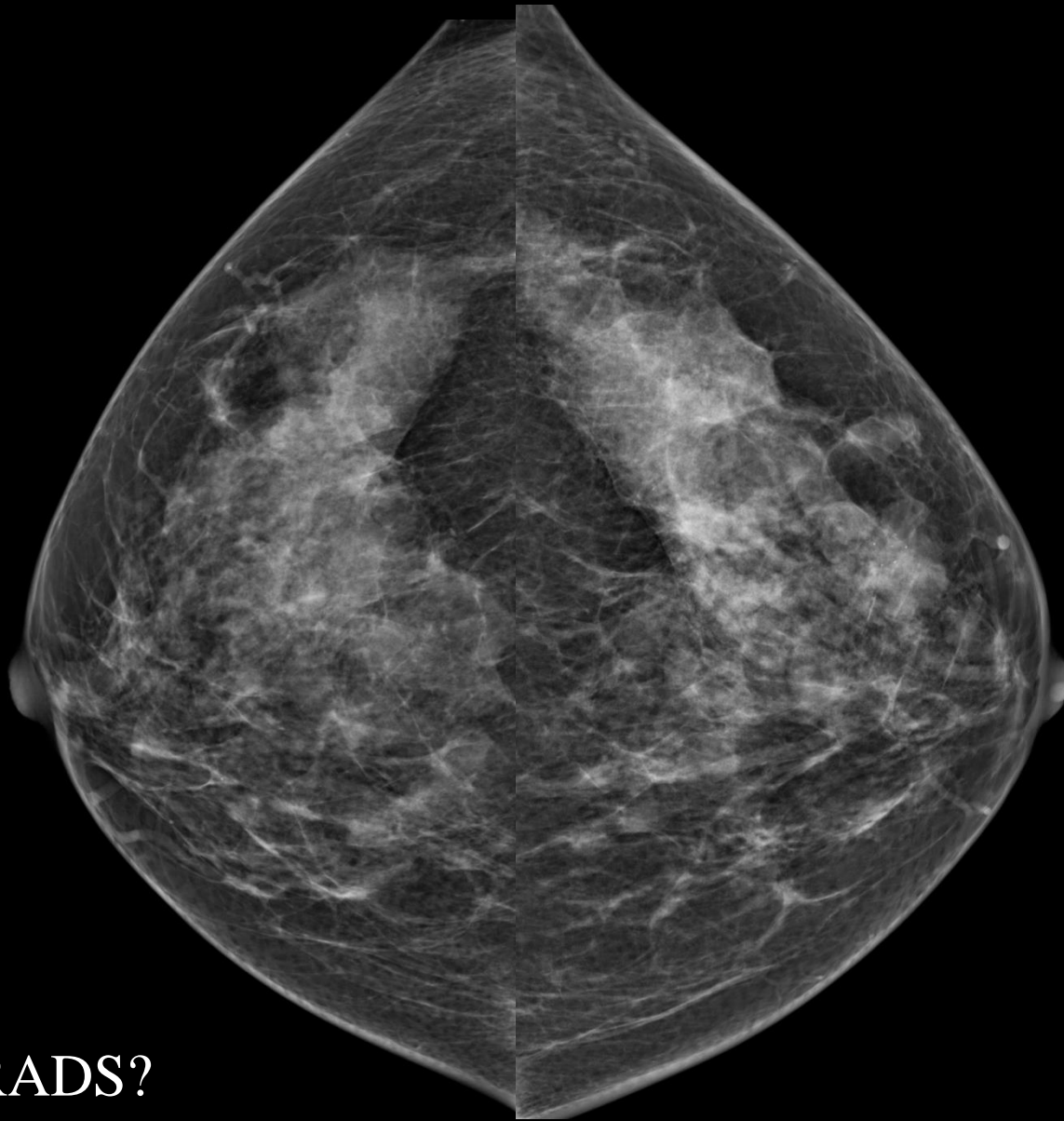
L-MLO

Q49-2

R-CC

L-CC

本題有三張投影片，第二張

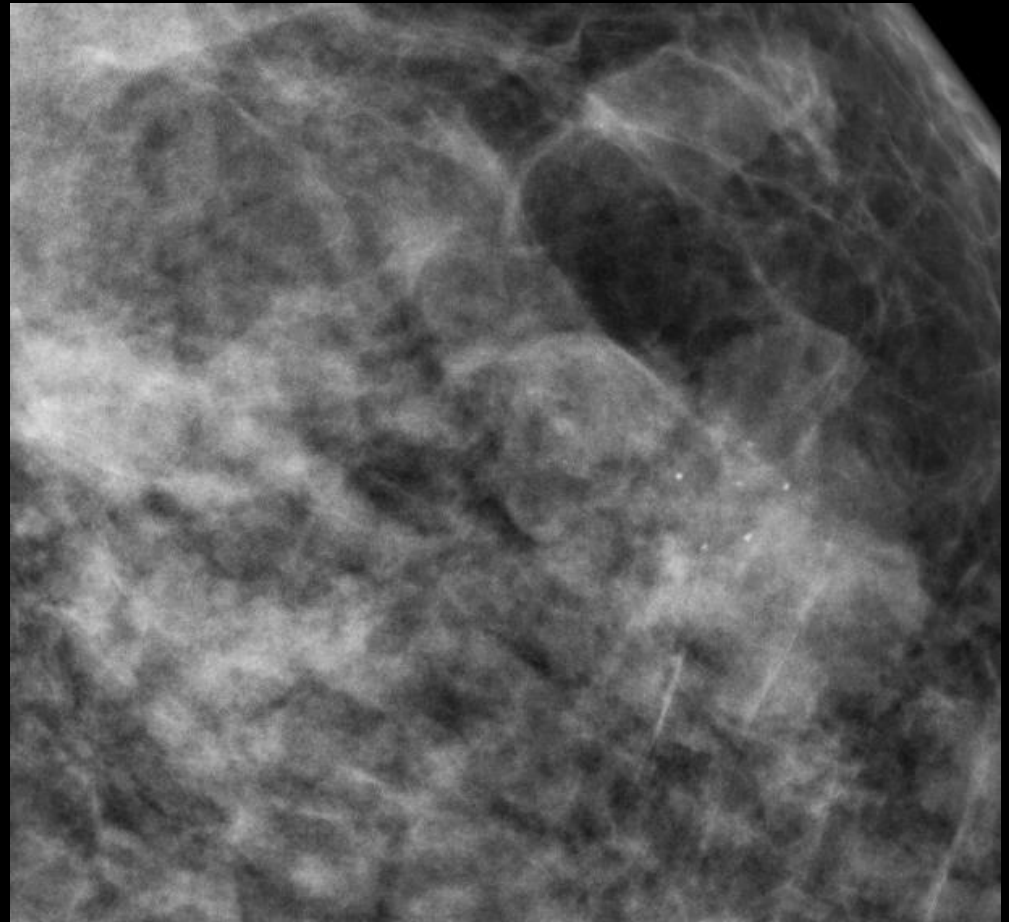
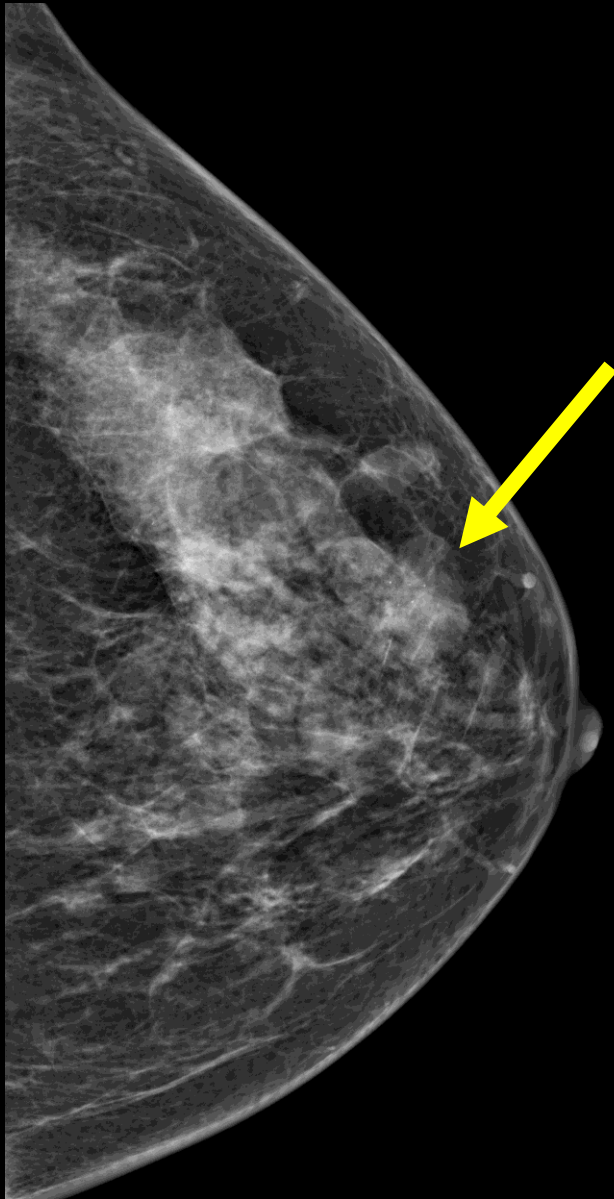


Q1: BI-RADS?

Q2: What is the diagnosis?

Q49-3

本題有三張投影片，第三張



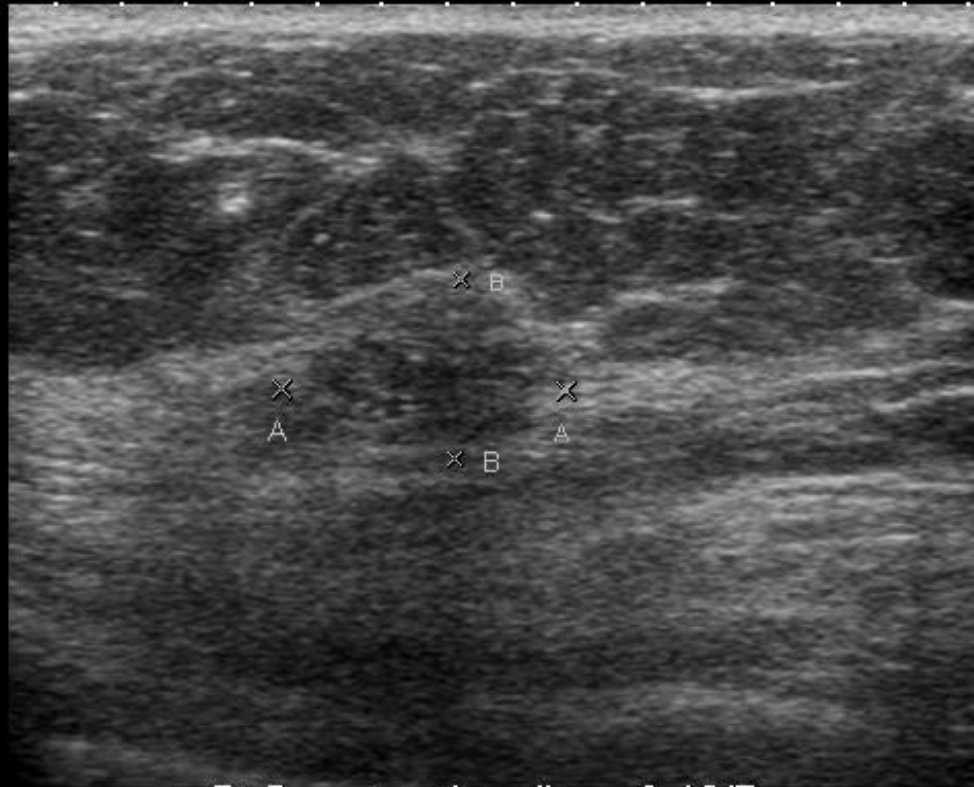
- Ans (1): BIRADS category 0, 5 or 4C
- Ans (2): Breast cancer with axillary metastatic adenopathy

Q50-1

Q1: On which side is/are salient abnormality located?

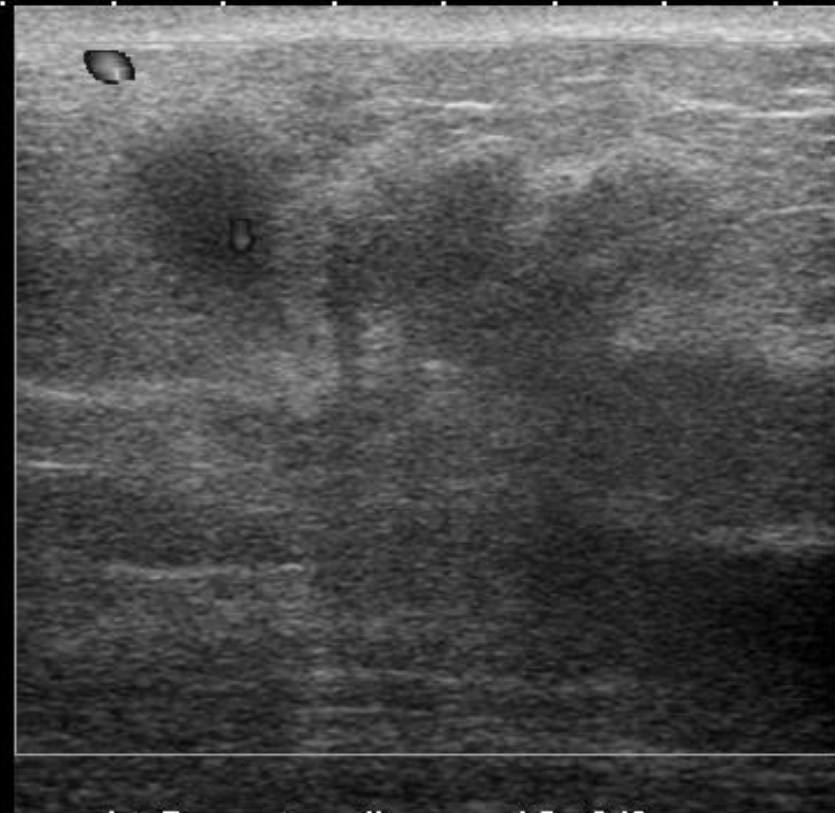
Q2: BI-RADS ?

本題有三張投影片，第一張



Rt Breast anti.,radi., 9-10/7

Rt breast



Lt Breast radi., 10~3/3

Lt breast

59 Y/O female. No previous history of operation of bil. Breasts

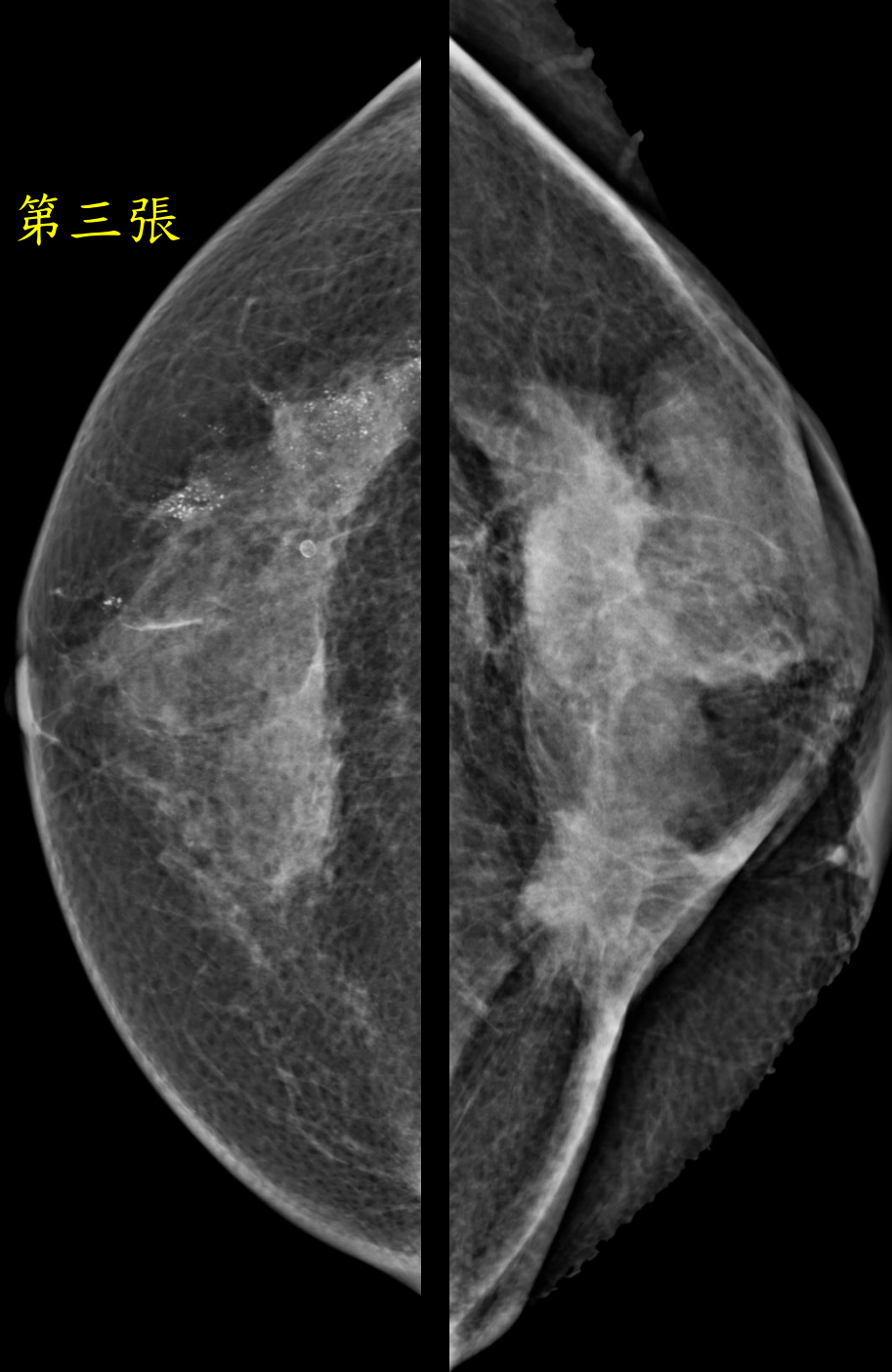
Q50-2



本題有三張投影片，第二張

Q50-3

本題有三張投影片，第三張



- Ans (1): **Bilateral**
- Ans (2): **BI-RADS 5**