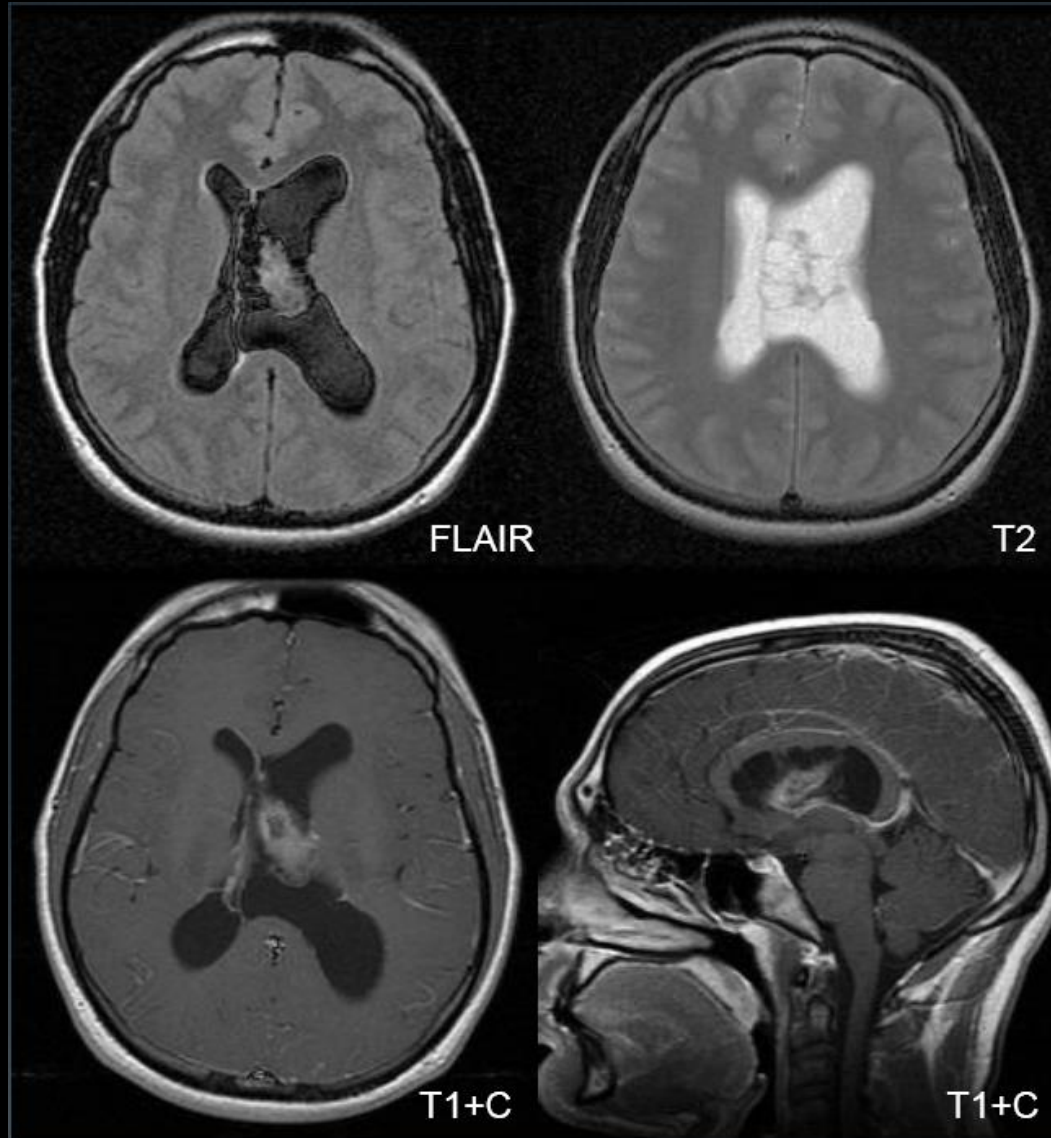


中華民國放射線醫學會
100年度第三次放射線(診斷)專科
住院醫師閱片測驗
2011/08/19

出題醫院:中山醫學大學附設醫院醫學影像部

Q1 M/27, right arm weakness.
What is your diagnosis?



A1

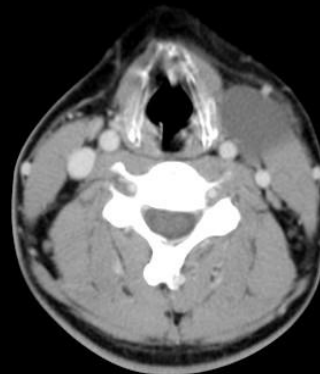
- 診斷: central neurocytoma

Location:

- Anterior lateral ventricle arising from septum pellucidum or ventricular wall (75%)
 - 3rd ventricle (20%)
 - rarely 4th ventricle/intraparenchymal
-
- CT: calcifications common (50-70%)
 - T1: heterogeneously hypo/isointense
 - T1 +C: moderate to strong heterogeneous enhancement
 - T2: heterogeneously hyperintense with “bubbly” appearance

Q2

M/41, palpable left neck mass.
What is your diagnosis?

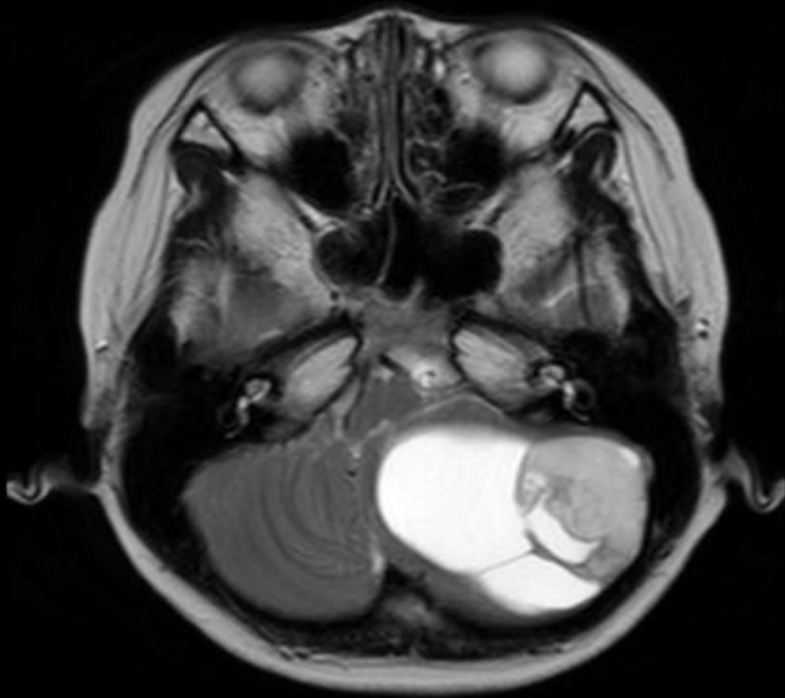


診斷：2nd brachial cleft cyst

- Incidence: 95% of all brachial cleft anomalies
- Classically located at the anteromedial border of SCM muscle + lateral to carotid space + posterior margin of submandibular gland

Q3

M/8, tendom gait, diplopia
What is your diagnosis?

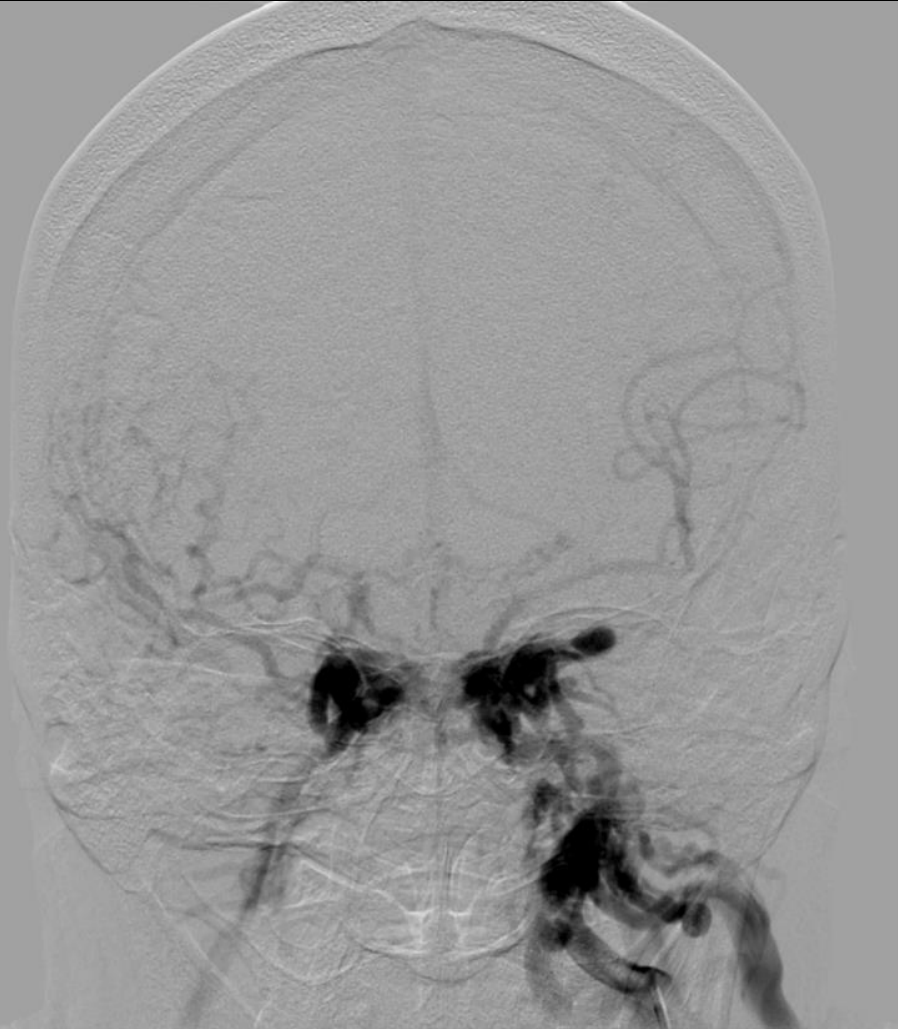


A3

- 診斷: pilocystic astrocytoma
- Cystic lesion with mural nodule in cerebellum
- Typically in a child

Q4

**F/49, history of head trauma.
What is your diagnosis?**



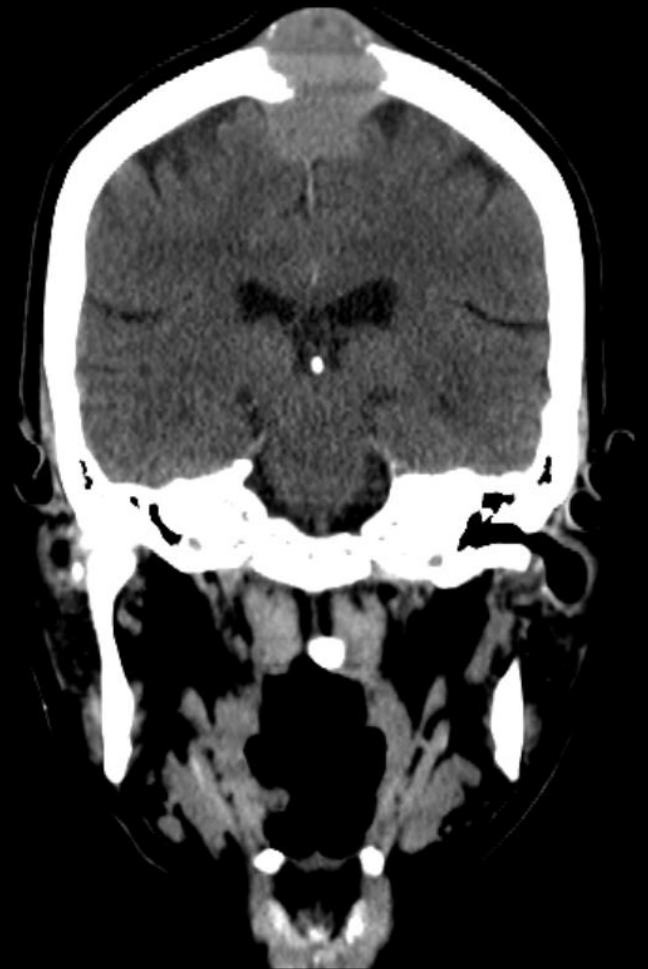
診斷:

Left side direct type carotid-cavernous fistula

- Immediate filling of the petrosal sinus and/or the ophthalmic vein is commonly evident when the intracavernous carotid artery is injected.

Q5

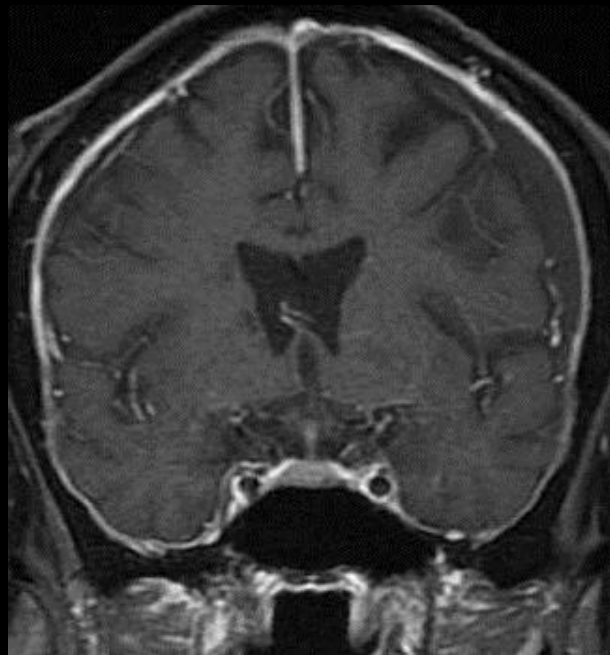
F/66, headache
What is your diagnosis?



- 診斷: Hemangiopericytoma
- D/D with meningioma:
 - Rarely calcification
 - Rarely hyperostosis

Q6

M/74 with posture headache. Hx of cerebellar tumor s/p op.



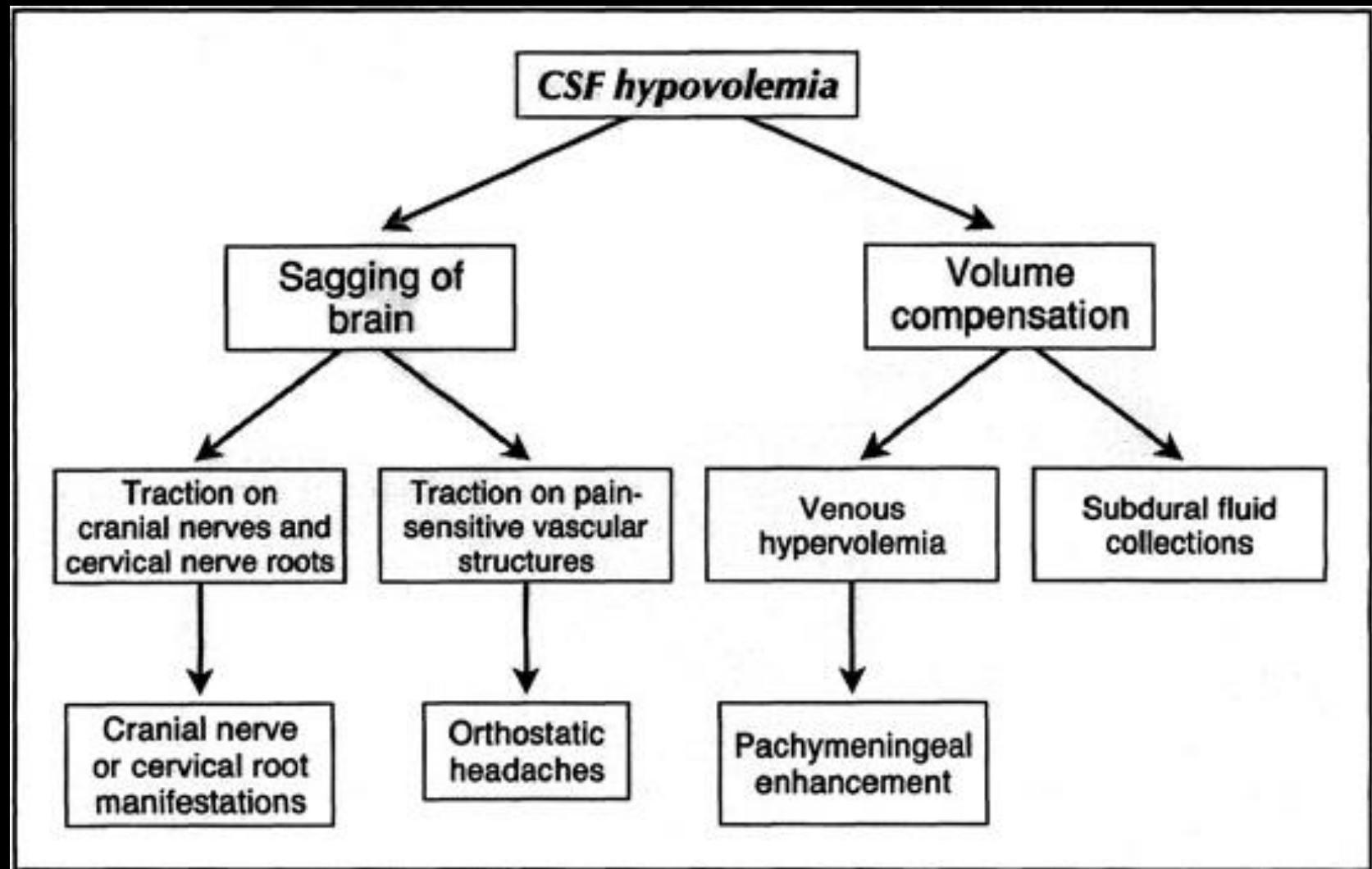
A6-1

診斷: Intracranial hypotension

- Most cases of ICH result from a persistent CSF leak.
- Such a leak most commonly occurs after diagnostic LP, myelography, or spinal anesthesia.
- Symptoms of ICH may be experienced any time after the dura mater is violated, such as after craniotomy, spinal surgery, craniospinal trauma, or placement of a ventriculoperitoneal shunt.
- In some cases, this syndrome may occur in the absence of an identifiable precipitant and, in fact, is believed to have developed spontaneously.

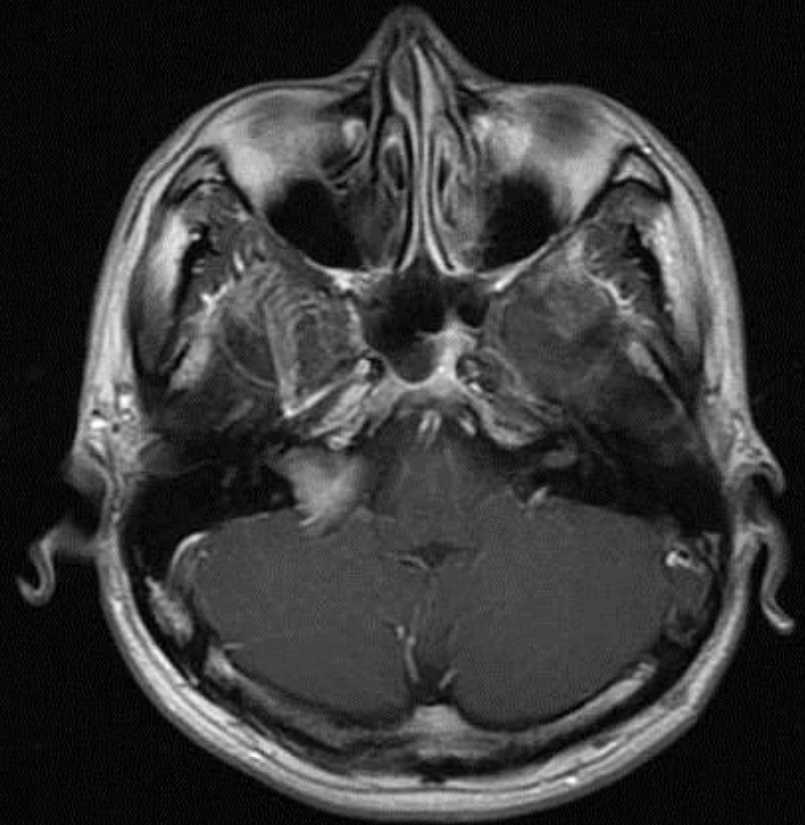
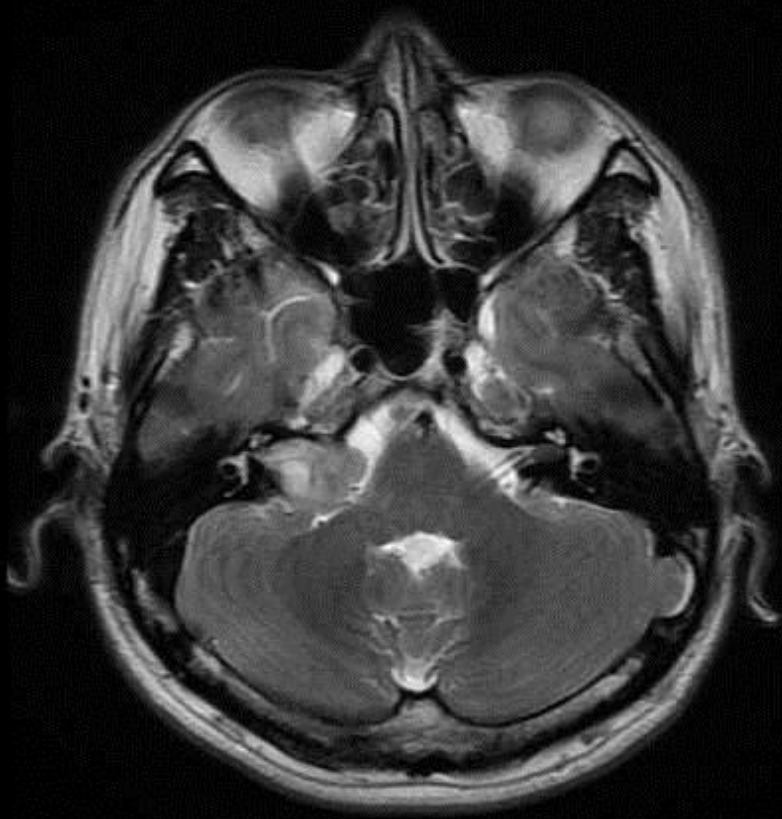
A6-2

- The dural findings seen with intracranial hypotension are due to congestive changes caused by chronically low intracranial pressure.
- Uniform thickening of the dura is a characteristic feature, and the lack of nodularity or a basilar distribution can help to distinguish this process from metastatic disease or TB/sarcoidosis.
- The cerebellar tonsils may occasionally sink through the foramen magnum, leading to an acquired Chiari I malformation.



Q7

M/30 with dizziness and hearing loss

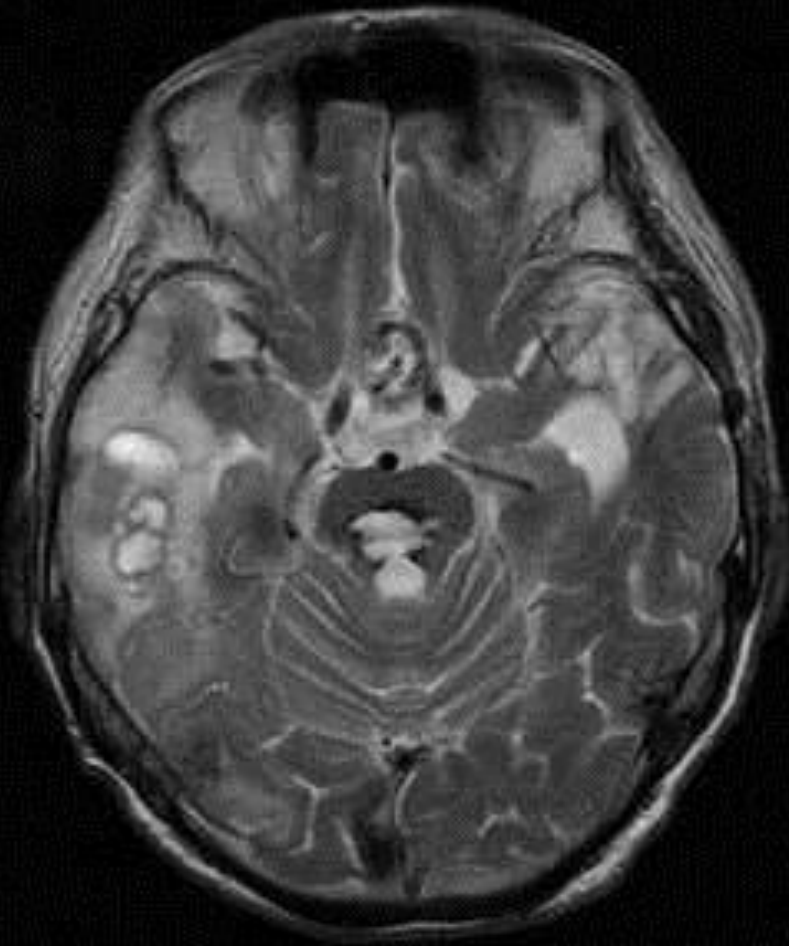


診斷: NF2

- NF2 with bil. acoustic neuromas and left trigeminal schwannoma.

Q8

M/61 with traumatic Hx 5 months ago



診断: hypertrophic olivary degeneration

Noriko Salamon-Murayama, MD

Eric J. Russell, MD

Barry M. Rabin, MD

Case 17: Hypertrophic Olivary Degeneration Secondary to Pontine Hemorrhage¹

HISTORY

The patient, a 36-year-old man with a history of hypertension and a prior stroke, developed right upper extremity rhythmic tremor (dentatorubral tremor).

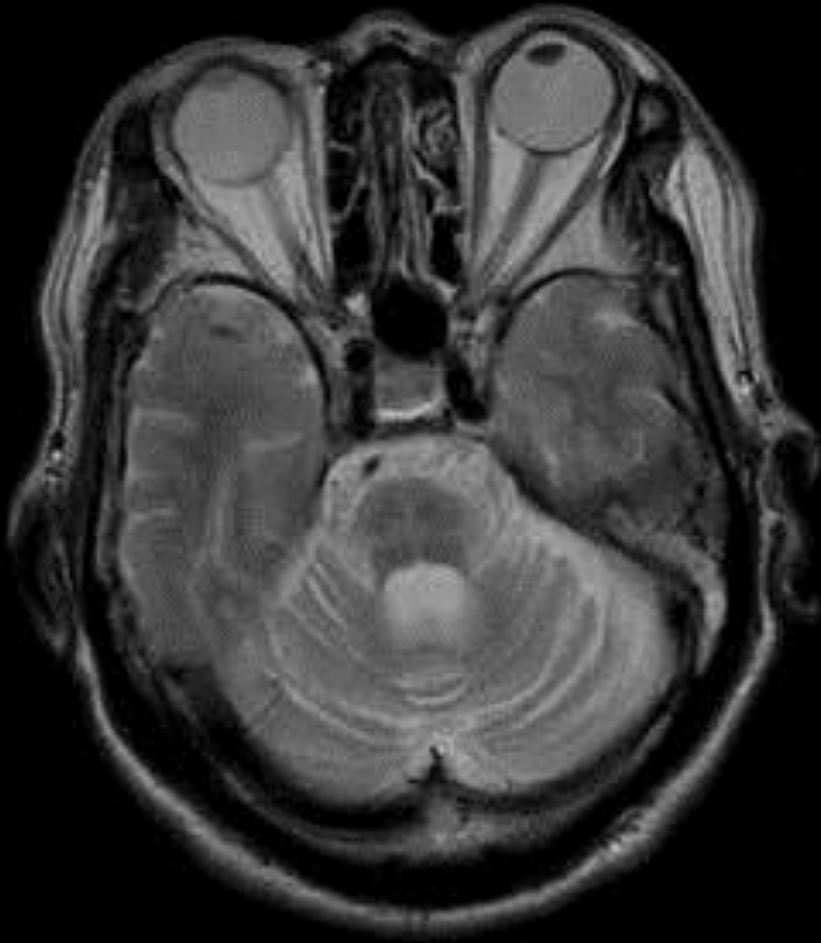
IMAGING FINDINGS

underwent MR imaging, which revealed an acute left tegmental pontine hemorrhage that appeared as an ovoid homogeneous high-intensity mass in the dorsal part of the pontomesencephalic junction, with surrounding hypointensity on T2-weighted images (Fig 2a). At this time, lower sections revealed no abnormal signal intensity in the olive (Fig 2b). The delay in appearance of the olivary changes following the pontine hemorrhage further confirms the correct diagnosis.

Radiology, 213: 814-817, December 1999.

Q9

M/64, dizziness



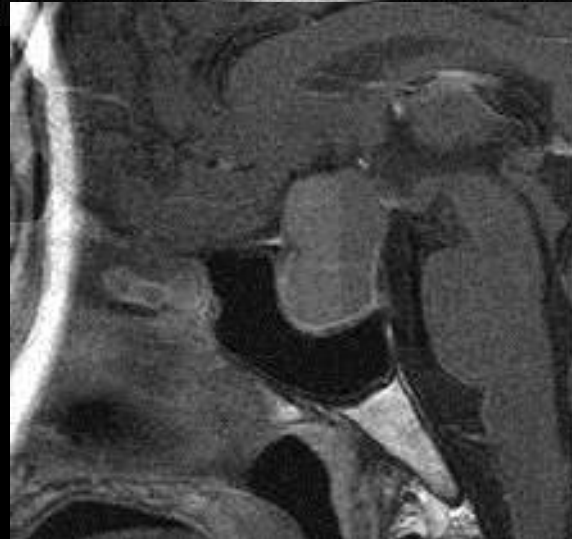
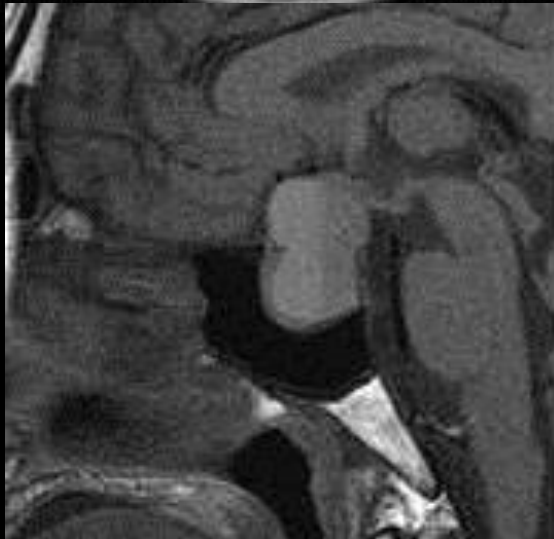
診斷: Olivopontocerebellar atrophy

- Progressive neurological degeneration affecting the cerebellum, the pons and the inferior olives.
- Hot cross buns sign.



Q10

M/42, blurred vision



診斷: pituitary apoplexy

- Hemorrhage or infarction caused by bleeding or blood vessel blockage of a pituitary tumor (pituitary adenoma).
- It causes symptoms such as headache, nausea, vision problems and altered consciousness.

Q11

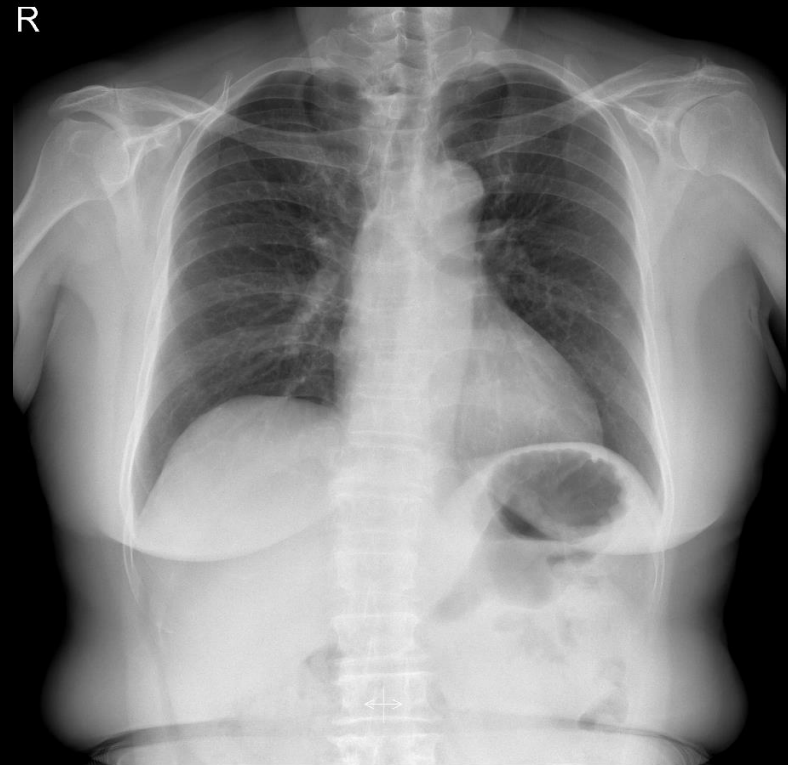
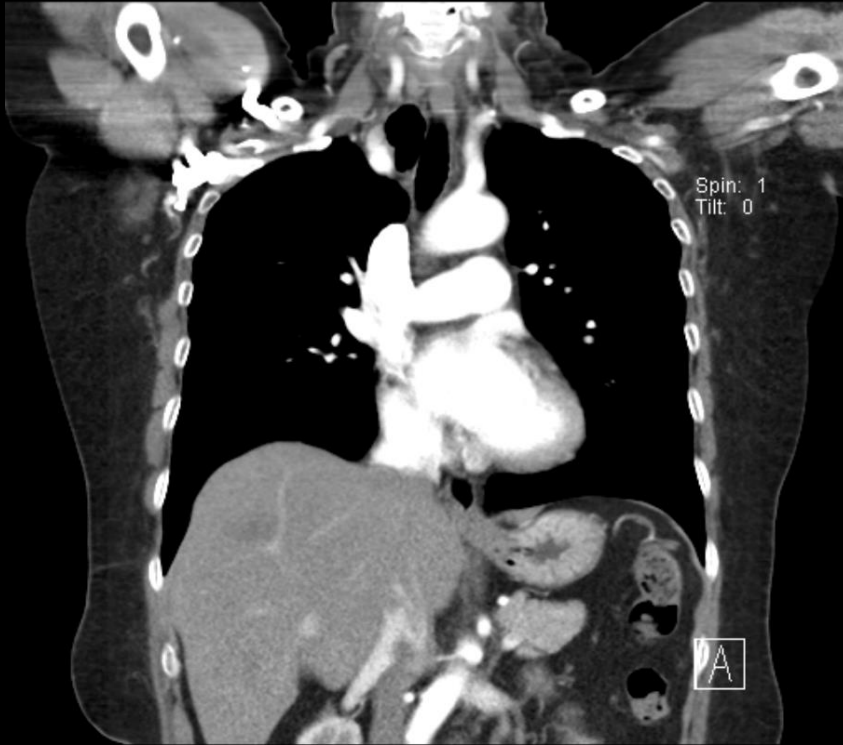
A young adult with chest wall deformity.



診斷: Pectus carinatum

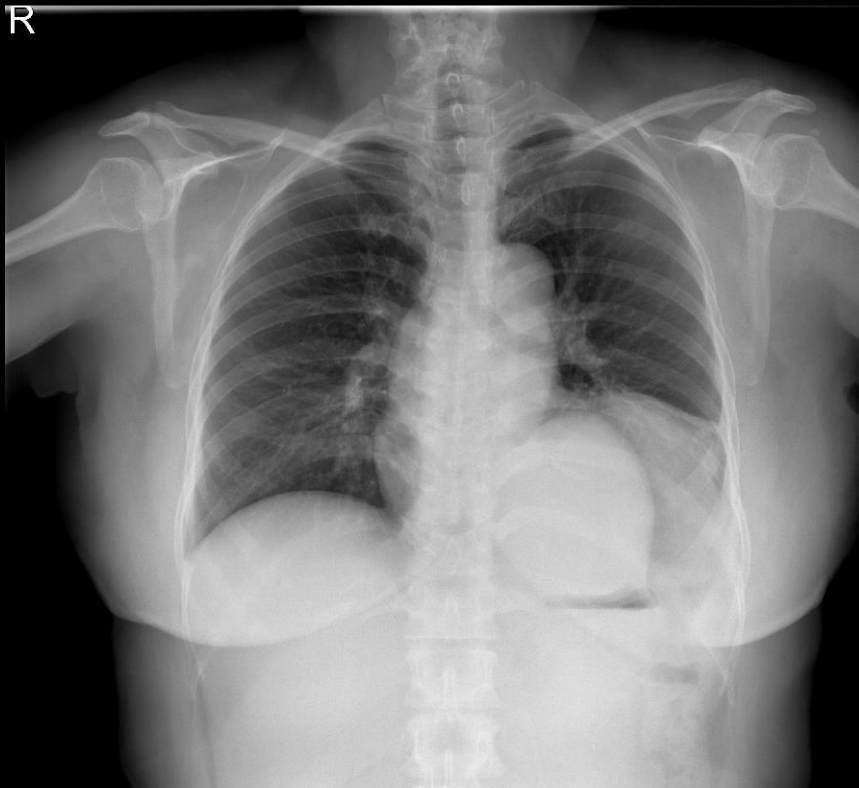
Q12

F/56 with chronic cough and dyspnea

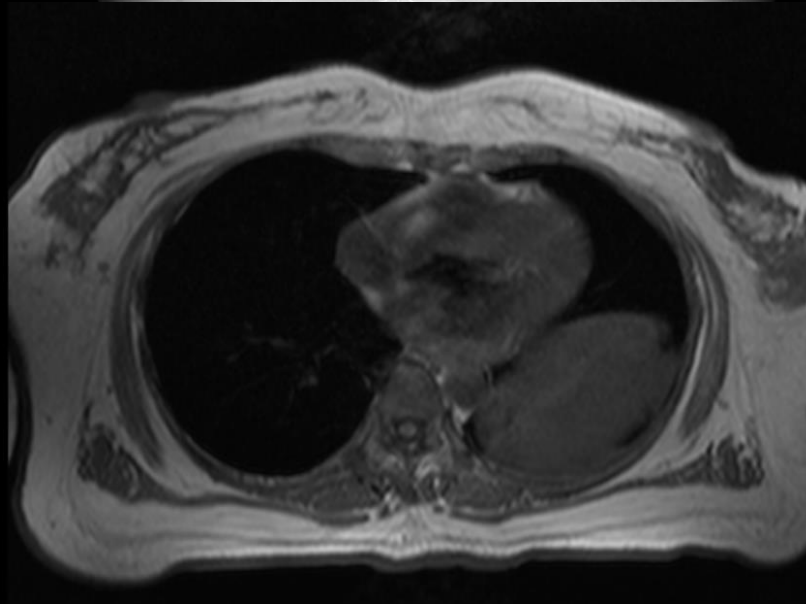


- 診斷:tracheal diverticulum

Q13^R



F/48



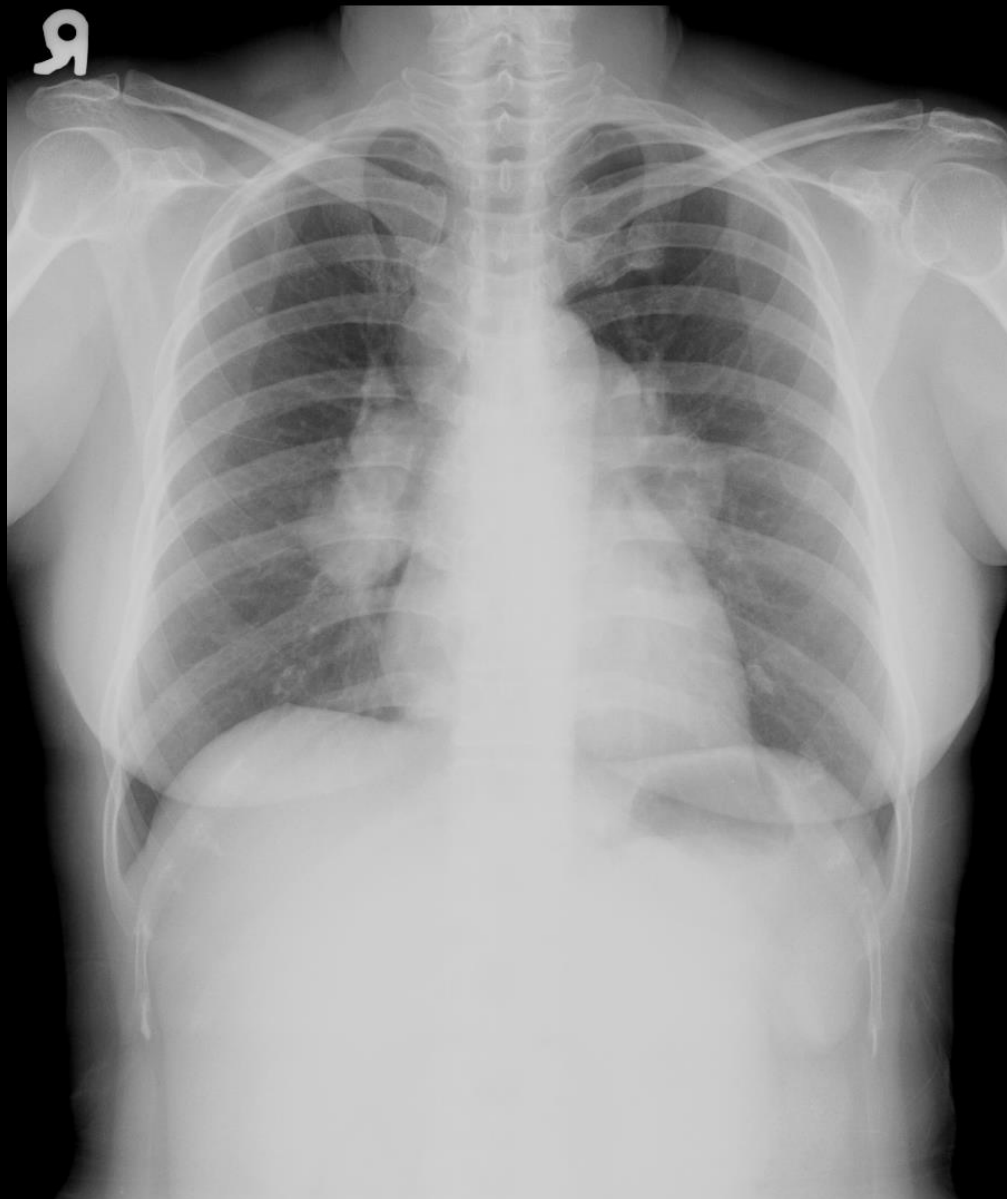
A13

診斷：

Fibrous tumor

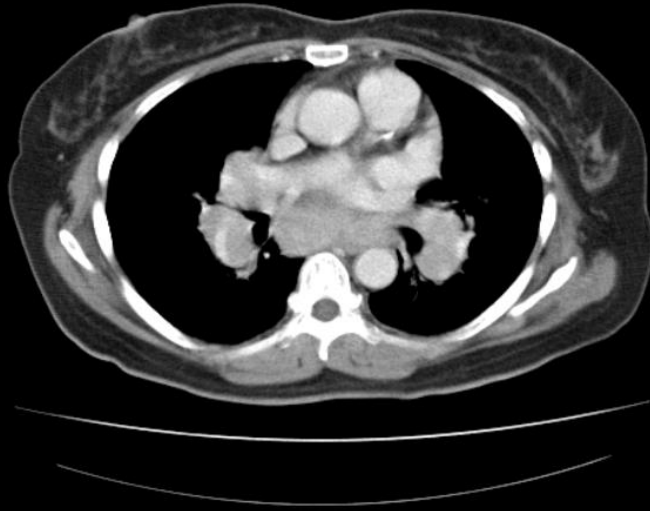
Q14

F/54



A14

診斷：SARCOIDOSIS



Q15

F/30, complains of RUQ and lower abdominal pain for two days.

What's your diagnosis?

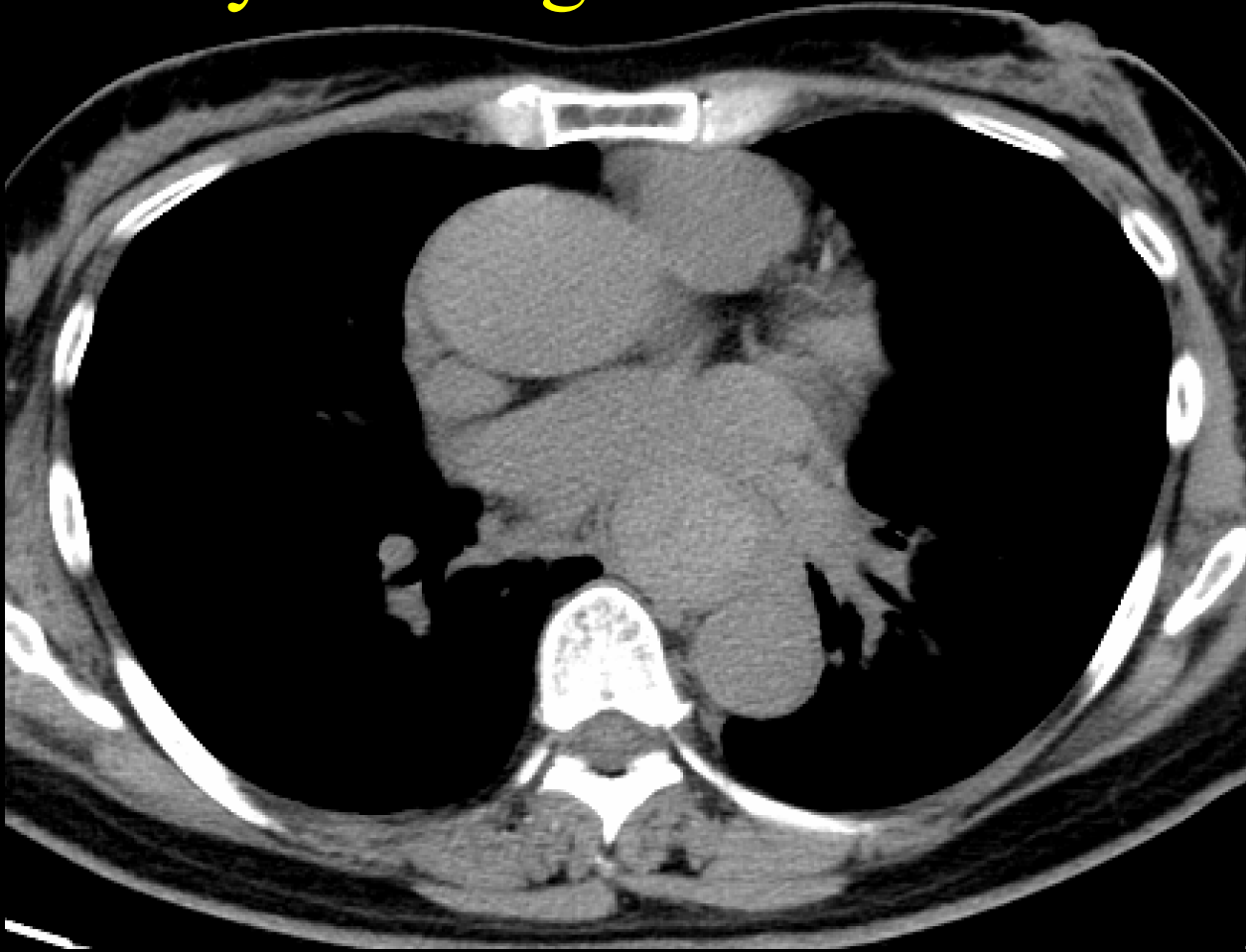


診斷：

- Fitz-Hugh-Curtis syndrome

Q16

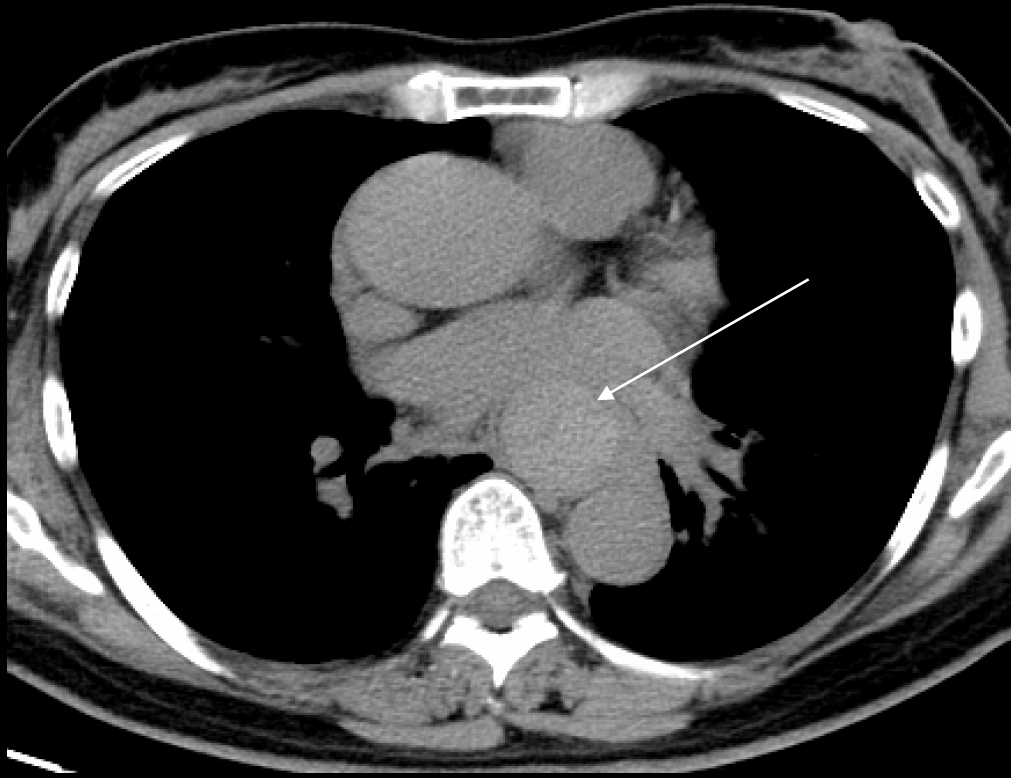
F/53, acute chest pain with dysphagia,
after massive alcohol drinking
What's your diagnosis?



A16

診斷：

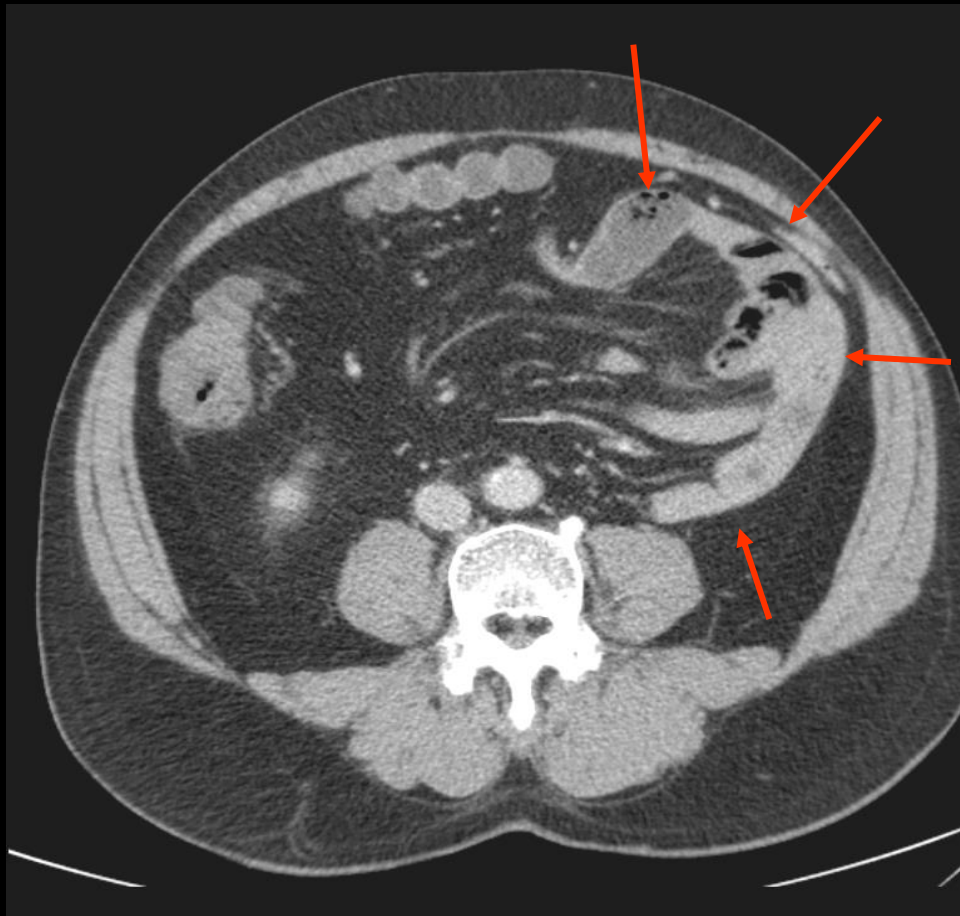
Intramural hematoma of esophagus



Q17

M/69, acute abdominal pain

Your impression?



診斷：

- Lt side paraduodenal hernia

Q18

M/80, incidental finding of a RLQ
cystic mass.

Your diagnosis?



A18

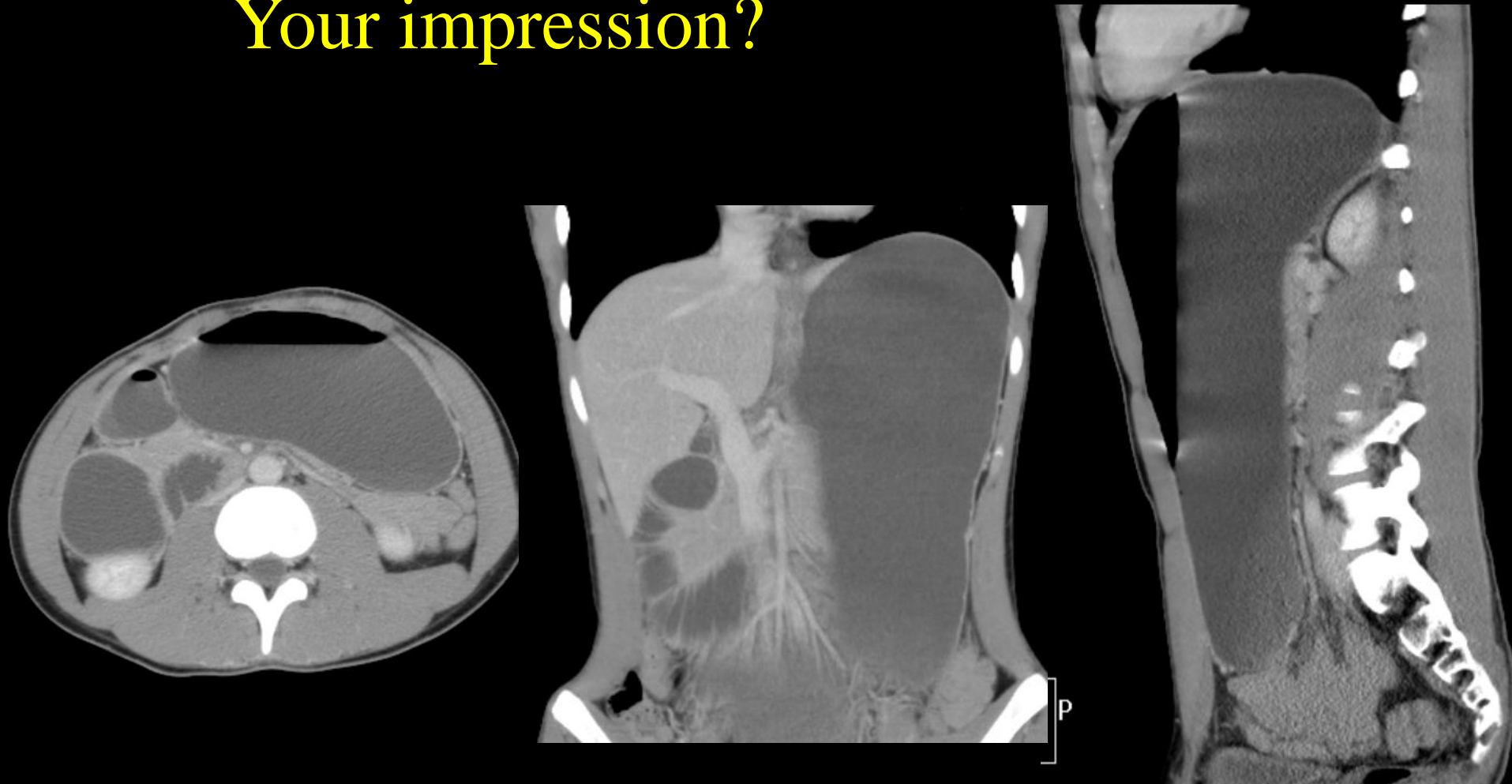
診斷：

Mucocele of appendix

Q19

M/16, abdominal distension for a long time.

Your impression?



A19

診斷：

- SMA syndrome



Q20 M/30, a case of AML s/p 2 courses of chemotherapy.
C.C: RLQ pain. Appendix is normal in the lower cut (not shown).

Your diagnosis?

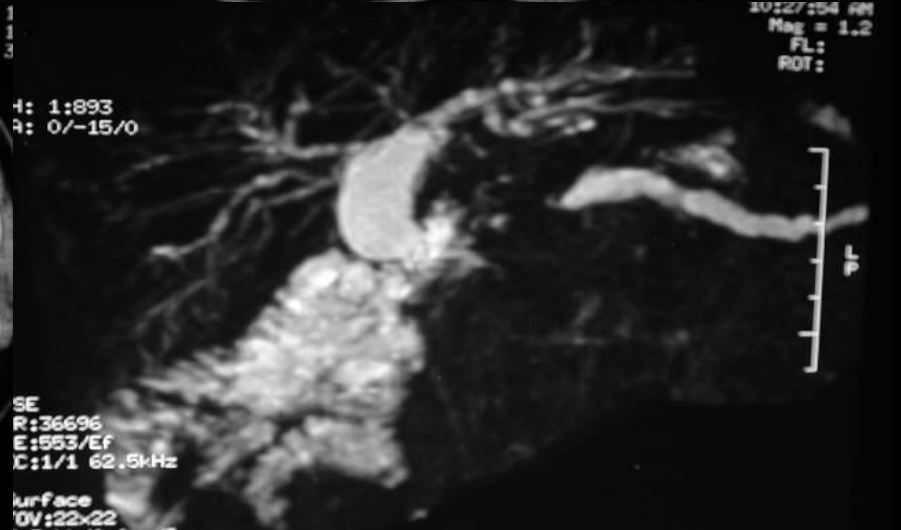
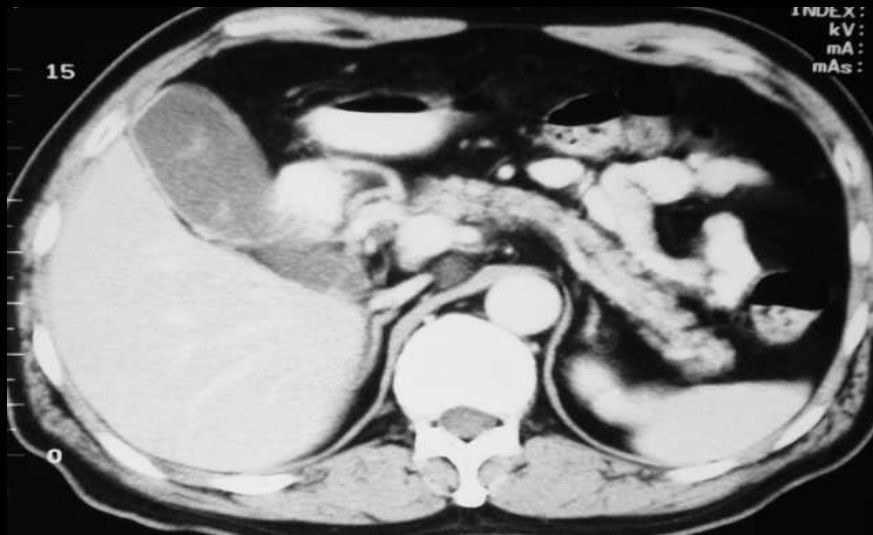


A20

診斷：

Typhlitis with lymphadenopathy

Q21 F/50, complained of upper abdominal mass



診斷：

Nonfunctioning islet cell tumor

Q22

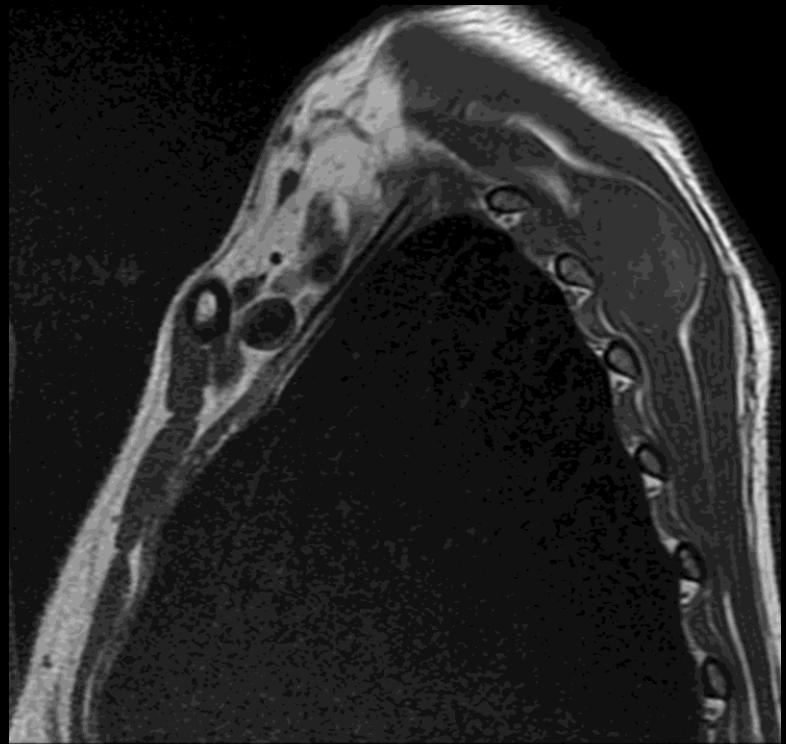
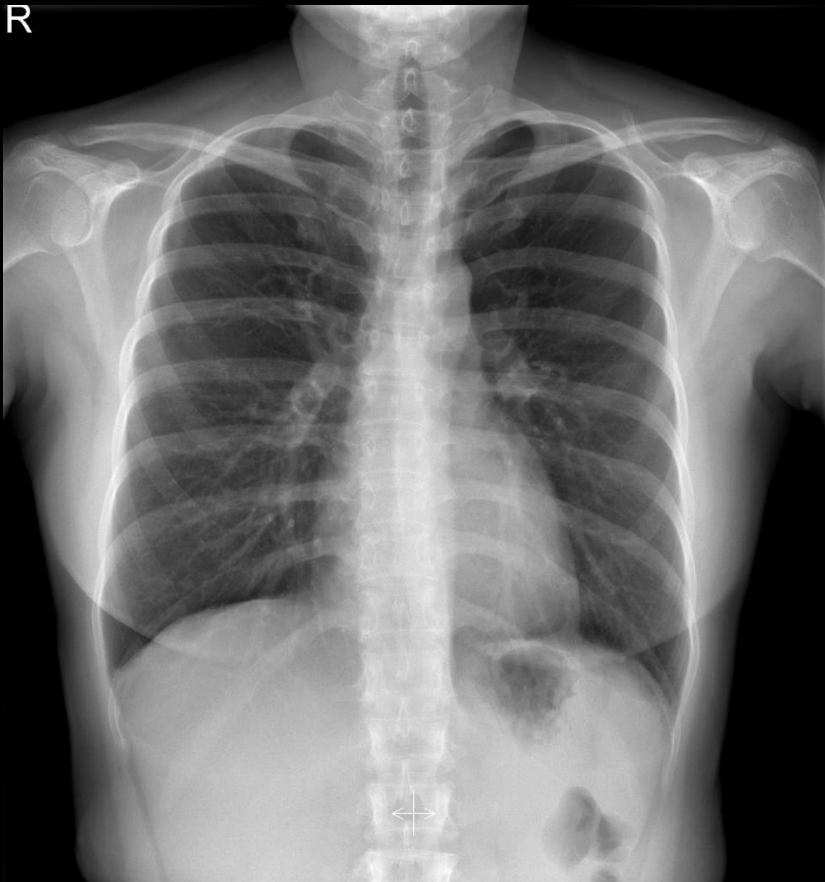


F/52, complained
of occasional cold
sweating,
palpitation and
tremor

診斷：

- Insulinoma

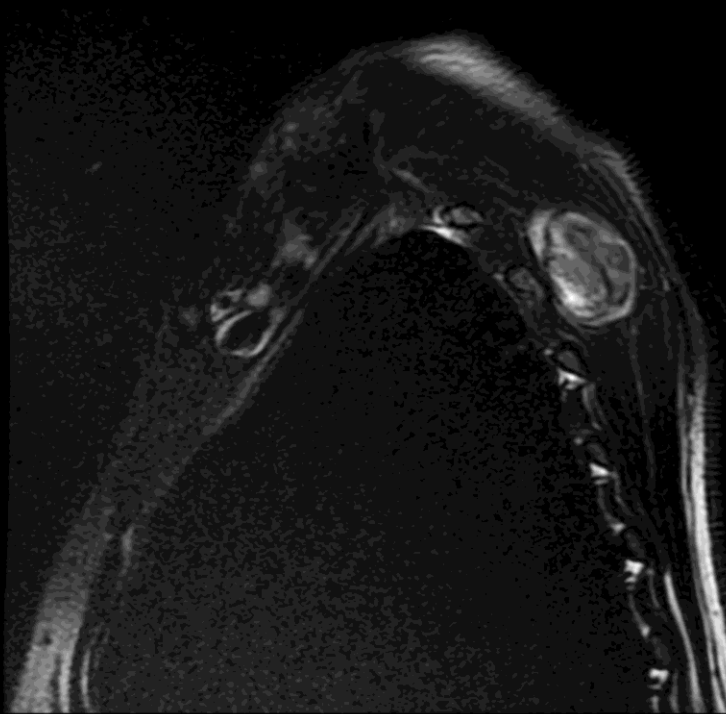
Q23 F/37, complained of Rt. scapular pain and radiation to right arm and right elbow for years



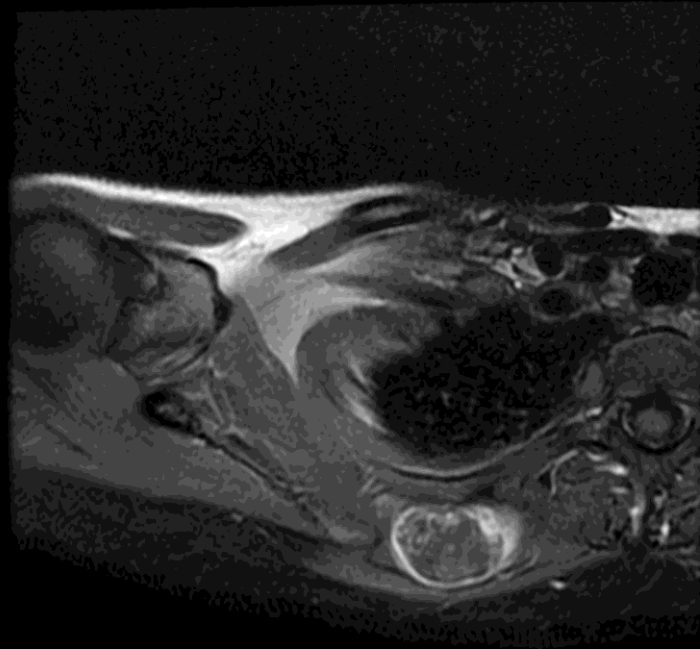
Sagittal T1WI

A23-1

診断: Neuilemoma, right scapular soft tissue



Sagittal T2WI

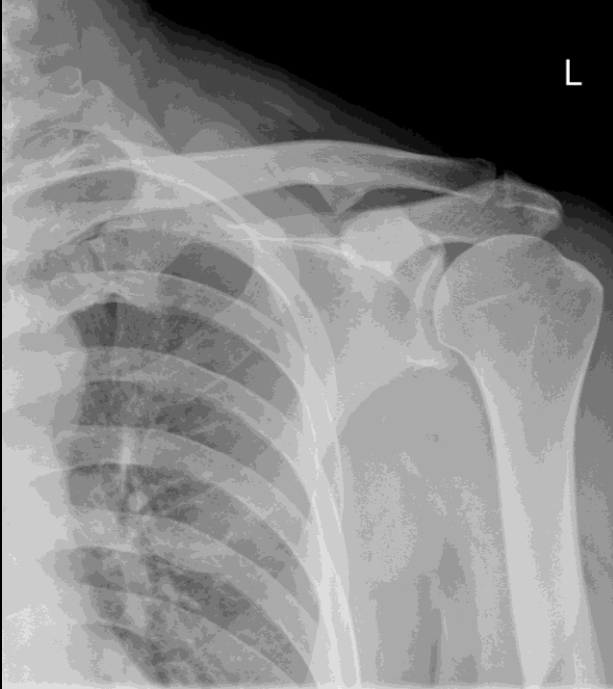


Axial T1+C F.S .

Neurilemoma

- Benign peripheral nerve sheath tumors are typical divided into two major groups: schwannoma (neurilemoma) and neurofibroma.
- Schwannomas represent 5% of all benign soft tissue tumors.
- Common sites are the cutaneous tissues of head/neck, flexor surfaces of the extremities, posterior mediastinum and retroperitoneum.
- Most commonly detected in patients between the ages of 20 and 50 years and occurs with equal frequency in men and women.

Q24 52 y/o with left shoulder pain and ROM



- 診斷: rotator cuff tear (supraspinatus ligament tear)

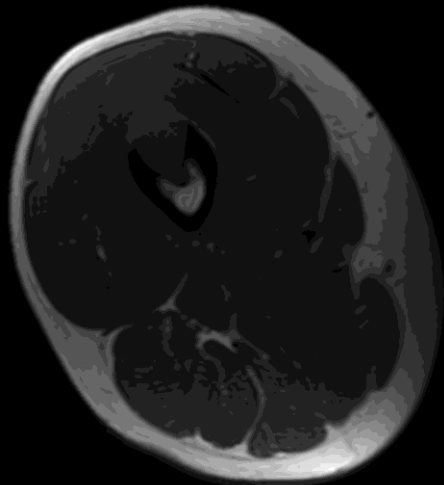
Q25 M/17 with bulging mass over right thigh for 2 years.



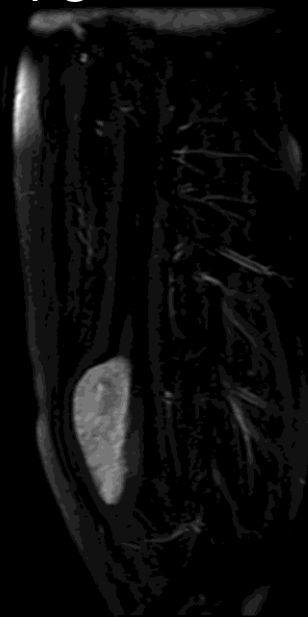
- 診斷: chondrosarcoma

A25-2

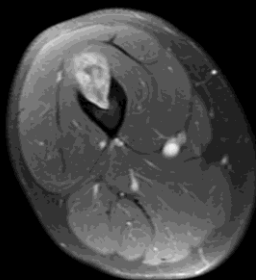
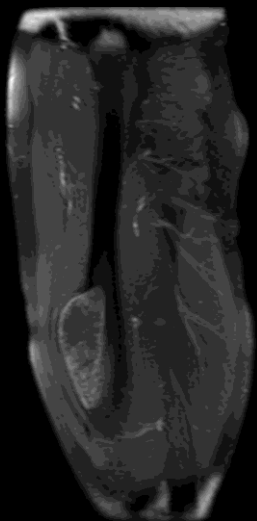
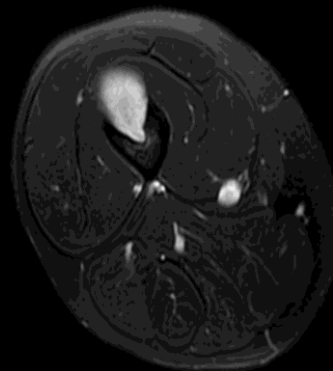
Axial T1



Sag T2 with
FS



Axial T2 with FS



Sag T1+C F.S.

Ax T1+ C F.S.

chondrosarcoma

- The 3rd most common primary malignant tumor of bone
- Patients with conventional chondrosarcoma most commonly present in the fourth to fifth decades of life.
- Radiographs will typically revealed a mixed lytic and sclerotic appearance, with areas of sclerosis representing chondroid matrix mineralization.
- MR imaging on T1-weighting with low to intermediate signal intensity and on T2-weighting with high signal intensity.
- The contrast enhancement pattern of conventional intramedullary chondrosarcoma: typically mild in degree and peripheral and septal in pattern.

Q26

M/16, pain after pitching baseball



- 診斷: Acromion fracture

Q27

68 y/o male with bil. hands painful swelling for a long time.

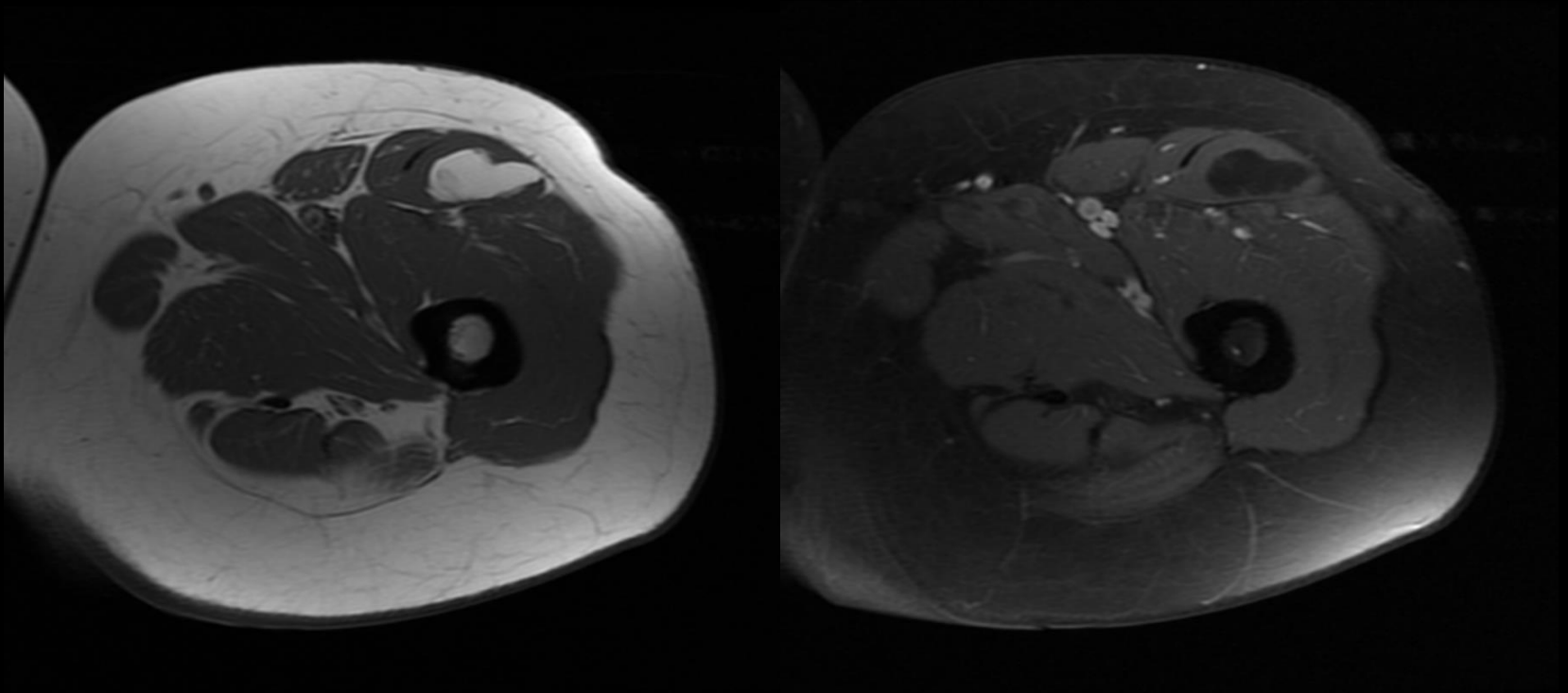


診斷：Psoriasis

- 1. soft tissue swelling over periarticular region of DIP.
- 2. uniform loss of joint spaces over DIP.
- 3. marginal erosion over DIP.
- 4. fluffy periostitis over DIP.

Q28

F/61, thigh pain



- 診斷: Intramuscular lipoma

Q29

M/13, Knee swelling



診斷:

Juvenile rheumatoid arthritis

Q30

M/47, Wrist pain



A30

診斷: scaphoid bone fracture



Q31

M/65, complained of Lt. abdominal pain



A31

診斷：

- lymphoma

Q32

M/30, incidental finding

54



W 317 : L 80

L 80

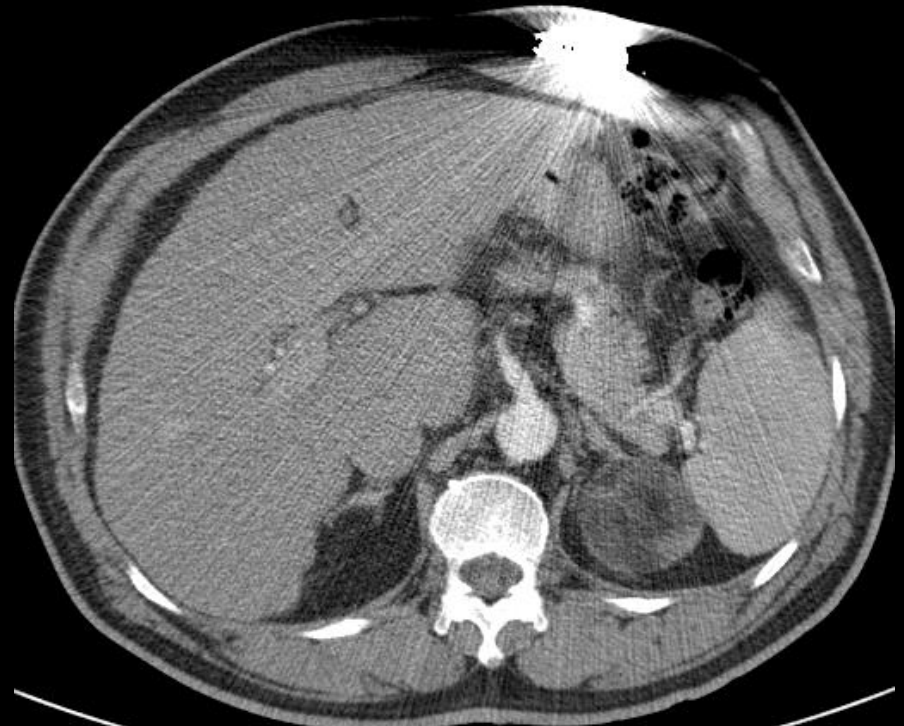
診斷：

von-Hippel Lindau disease

Q33

M/63,

主訴: mild abdominal upset



- 診斷：adrenal myelolipoma

Q34

M/53, complained of oliguria



診斷:

- TB kidney (tuberculosis Kidney)
- Contrast-enhanced CT scan of left kidney shows uneven caliectasis caused by varying degrees of stricture at various sites.
- Please refer to “Pictorial Essay: Genitourinary Tuberculosis: Comprehensive Cross-Sectional Imaging” AJR:184, January 2005

Q35

**Old male with
claudication.**

What is your diagnosis?

CEMRA



A35-1

診断：
Leriche's syndrome

CEMRA



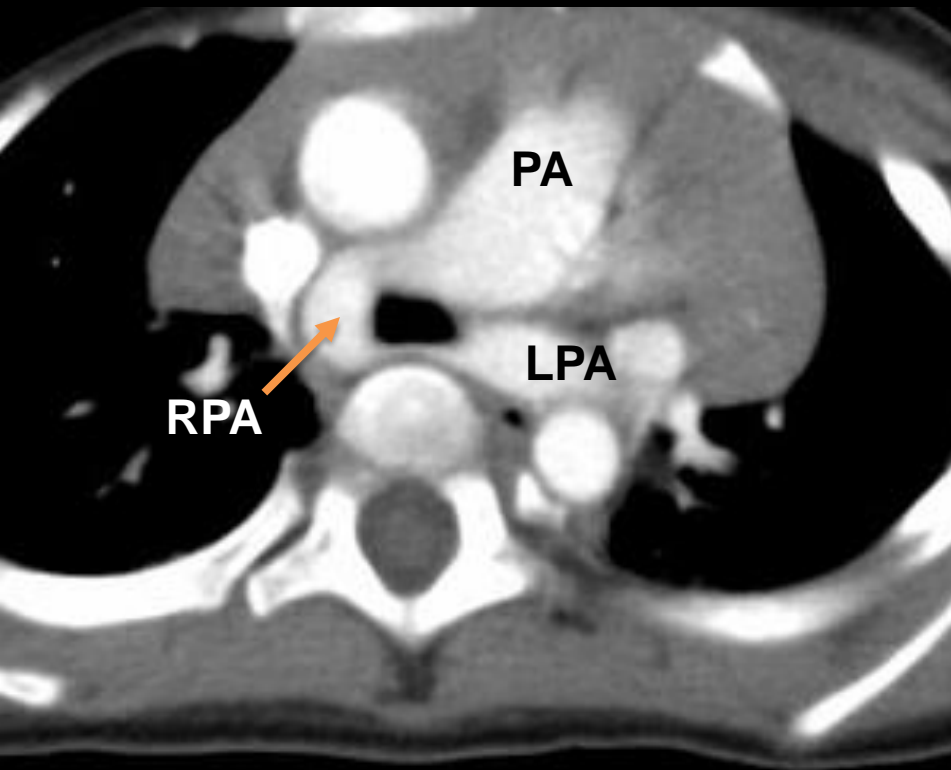
Discussion

- Leriche's syndrome (atherosclerotic occlusive disease involving the abdominal aorta and/or both of the iliac arteries)
- Classically, it is described in male patients as a triad of symptoms consisting of:
 - claudication of the buttocks and thighs
 - atrophy of the musculature of the legs
 - impotence

Q36

Pediatric cyanosis
What is your diagnosis?

LPA= left pulmonary artery
PA= pulmonary artery
RPA= right pulmonary artery



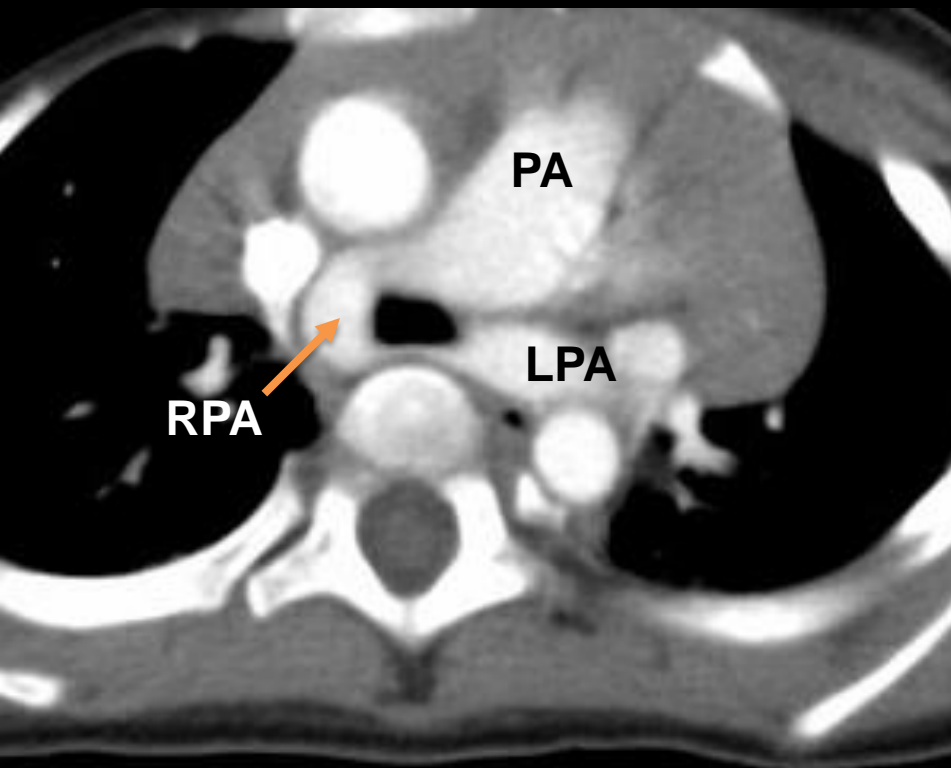
CECT



A36-1

診斷：
Pulmonary sling

LPA= left pulmonary artery
PA= pulmonary artery
RPA= right pulmonary artery



CECT

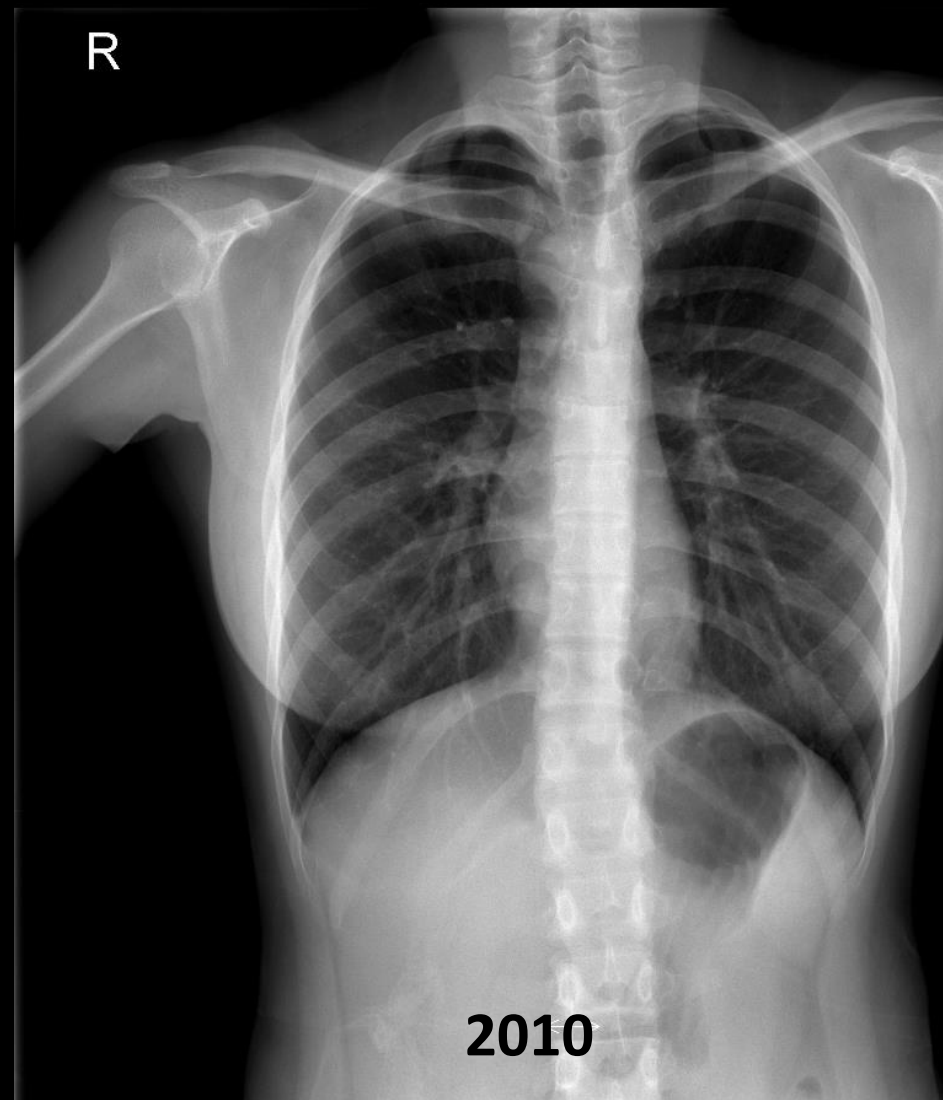


Discussion

- Diagnosis: Pulmonary sling
- Pulmonary artery sling is a condition in which the left pulmonary artery anomalously originates from a normally positioned right pulmonary artery. The left pulmonary artery then progresses posteriorly over the right main bronchus near its origin from the trachea, traverses between the trachea and the esophagus and enters the left hilum.
- Symptoms include cyanosis, dyspnoea and apnoeic spells. It is almost always fatal and usually requires surgical intervention.

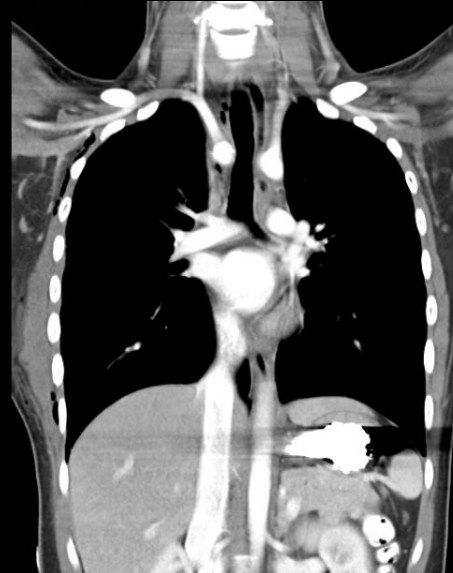
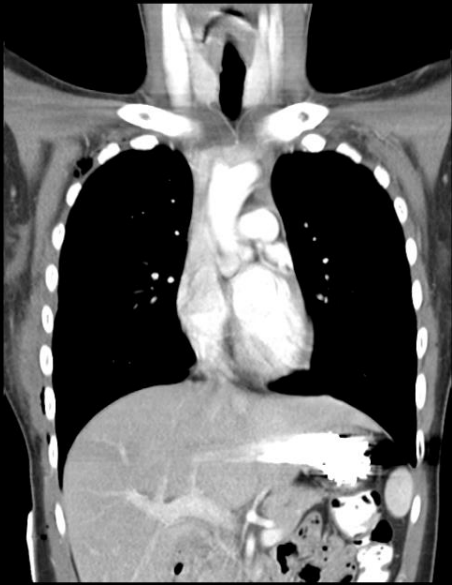
Q37

F/18



A37

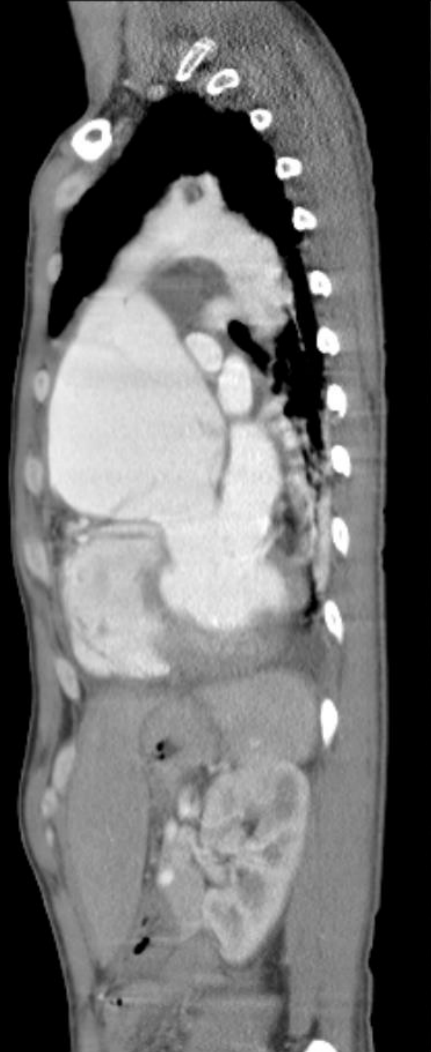
診斷: double aortic arch



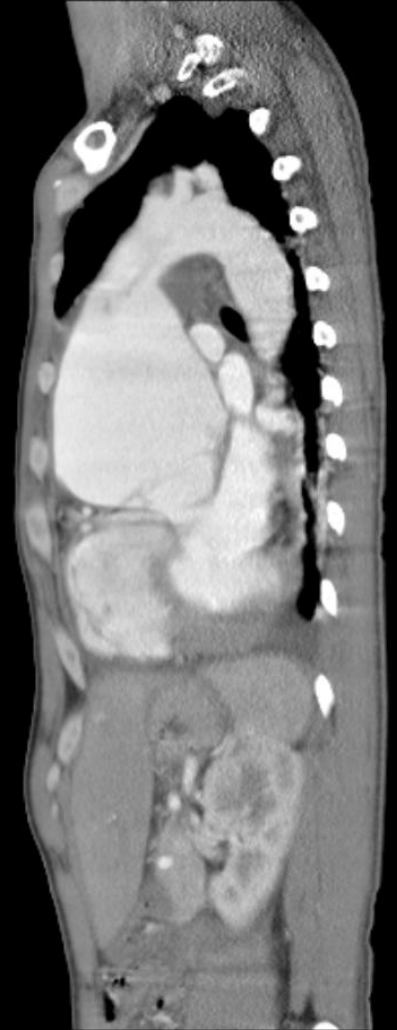
Q38

M/27, chest pain



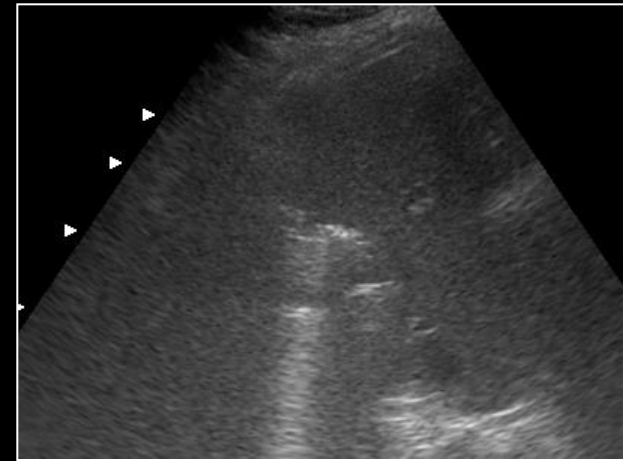
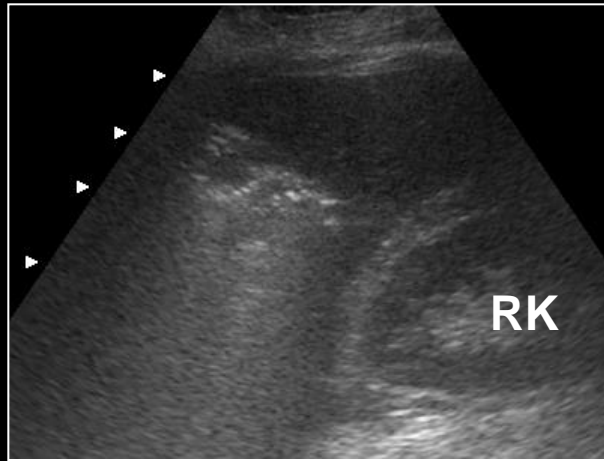
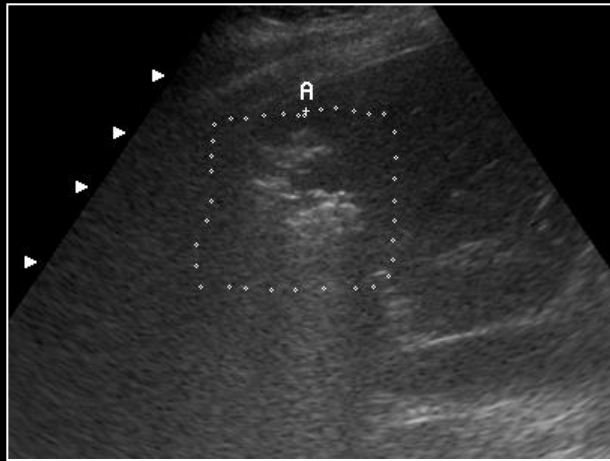


診断：
annuloaortic ectasia
or
Marfan syndrome



Q39

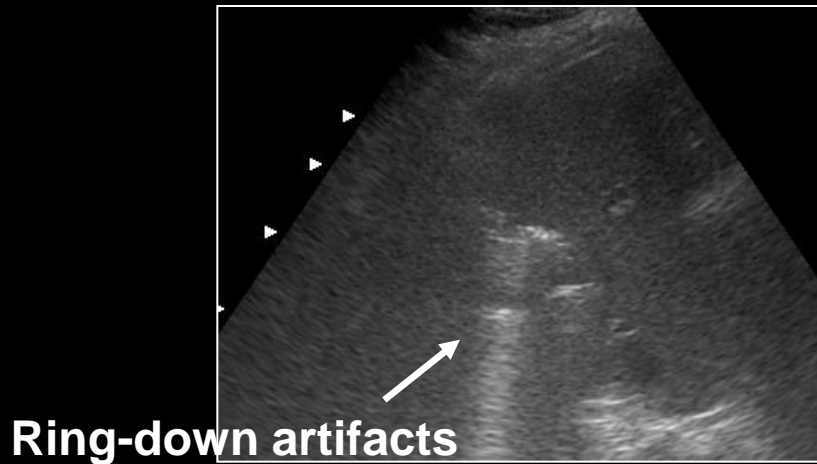
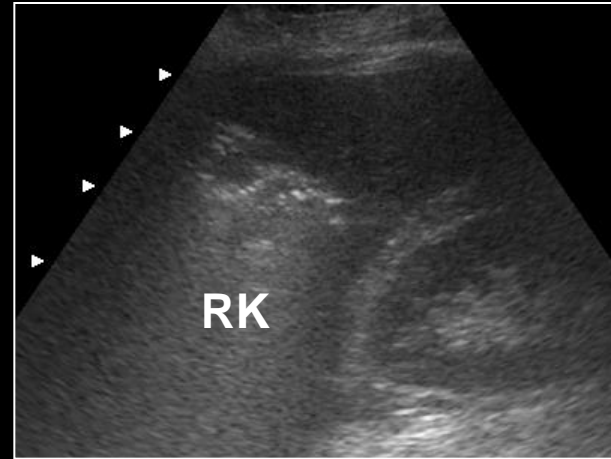
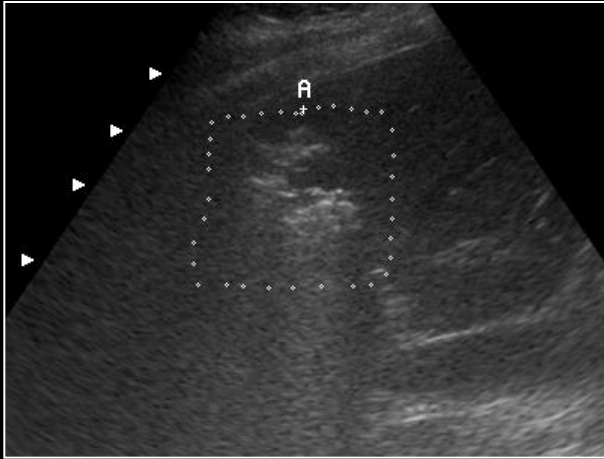
F/72, High fever for days
Ultrasound images of liver
What is your diagnosis?



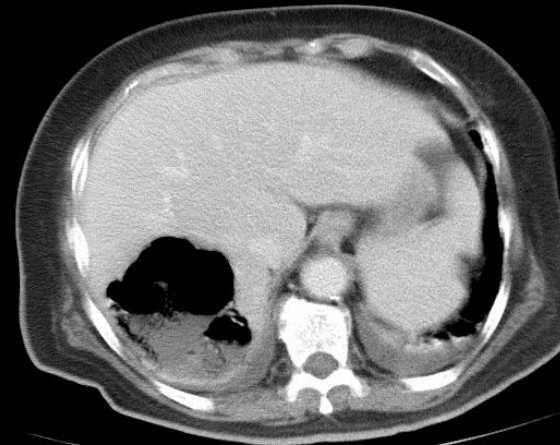
RK, right kidney

A39-1

診断: (Gas-forming) liver abscess



Ring-down artifacts

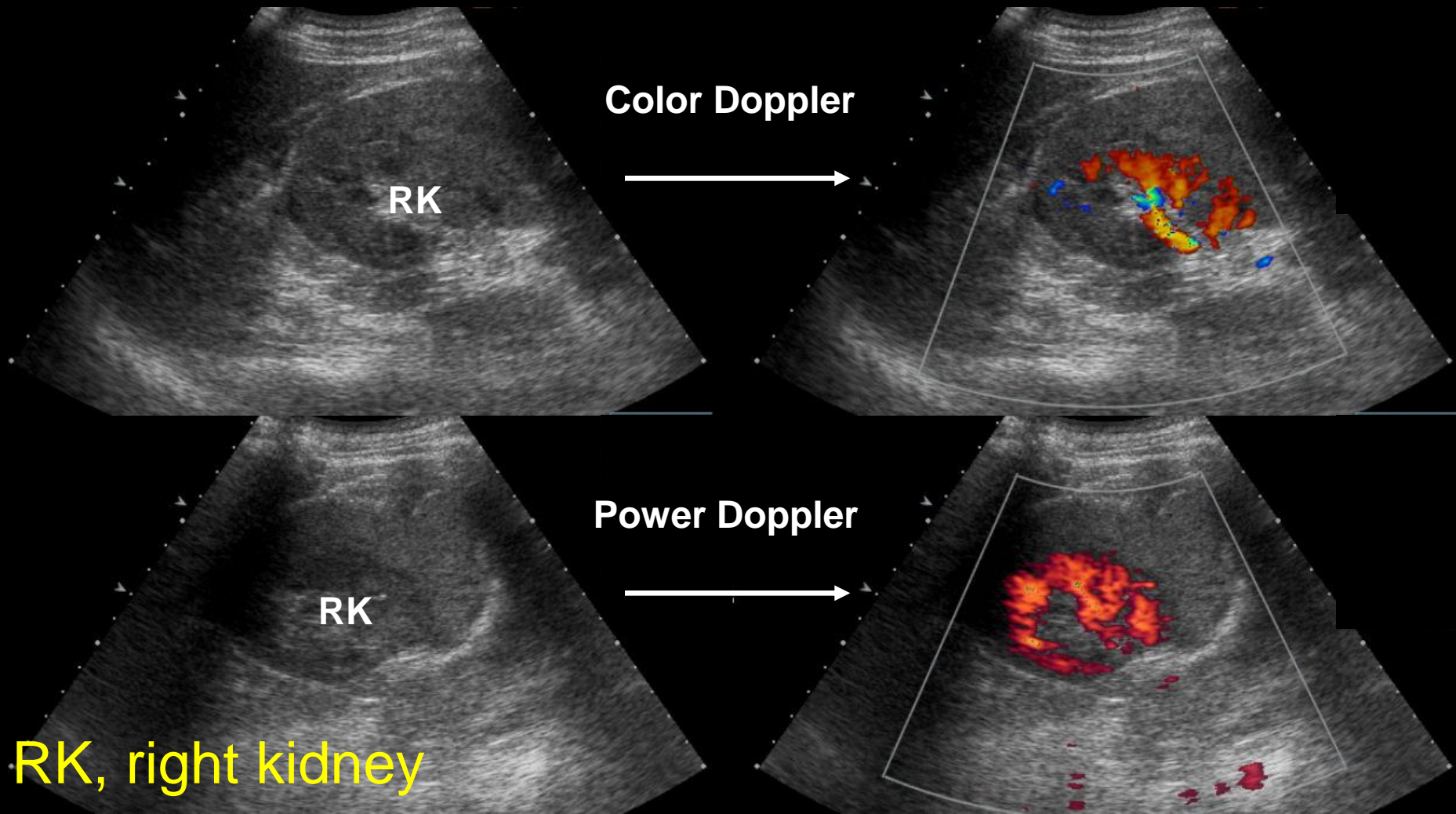


CECT

Discussion

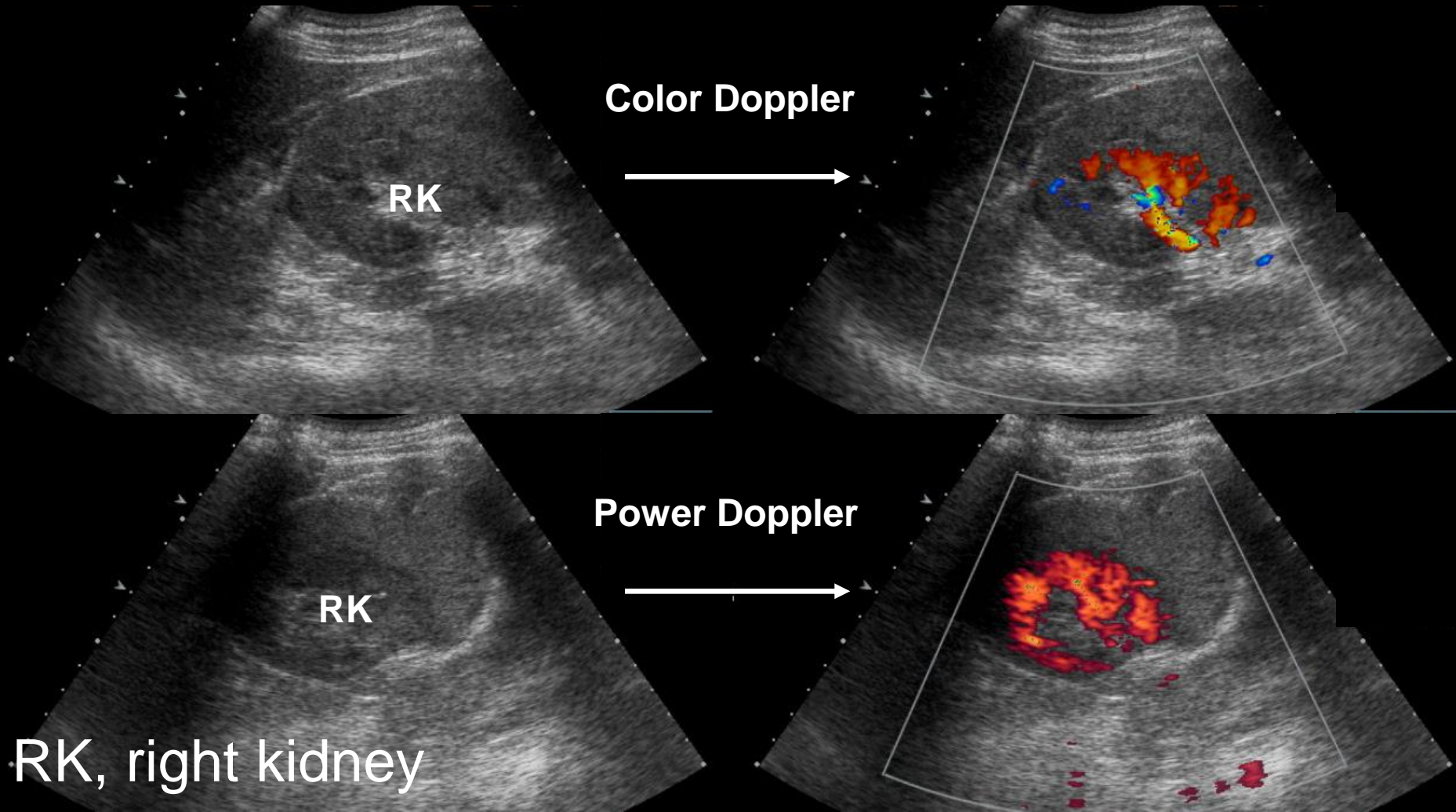
- Liver abscesses typically appear as complex fluid collections with a mixed echogenicity.
- Sometimes, high reflective foci with shadowing or ring-down artifacts may be present due to gas.
- "Ring-down" is an ultrasound artifact that usually appears as a solid streak or a series of parallel bands radiating away from gas collections.

Q40 M/69, Right flank pain
Renal artery stenosis, just post stenting.
What is your diagnosis?



A40-1

診断: (acute) perirenal hematoma

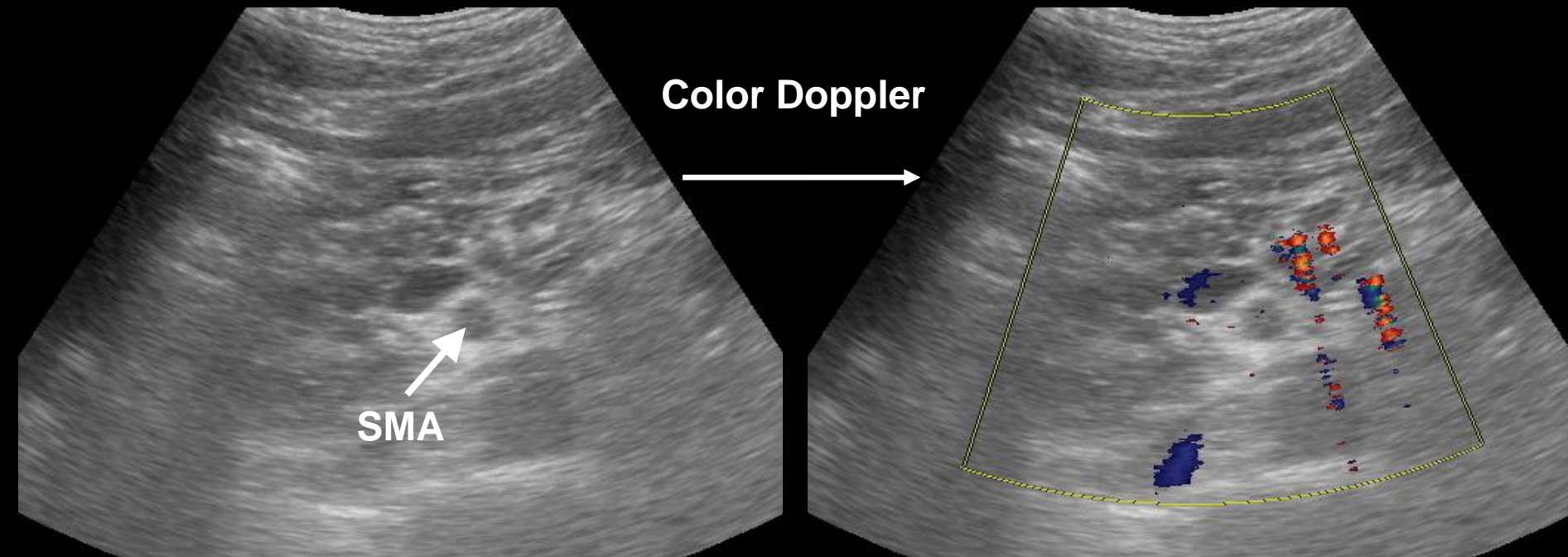


Discussion

- The echogenicity of hematoma is various.
- It may be difficult to identify when the blood is iso-echoic compared with adjacent organ or tissue.
- In the situation, color or power Doppler may enhance the margin of blood (static)-tissue (renal perfusion).

Q41

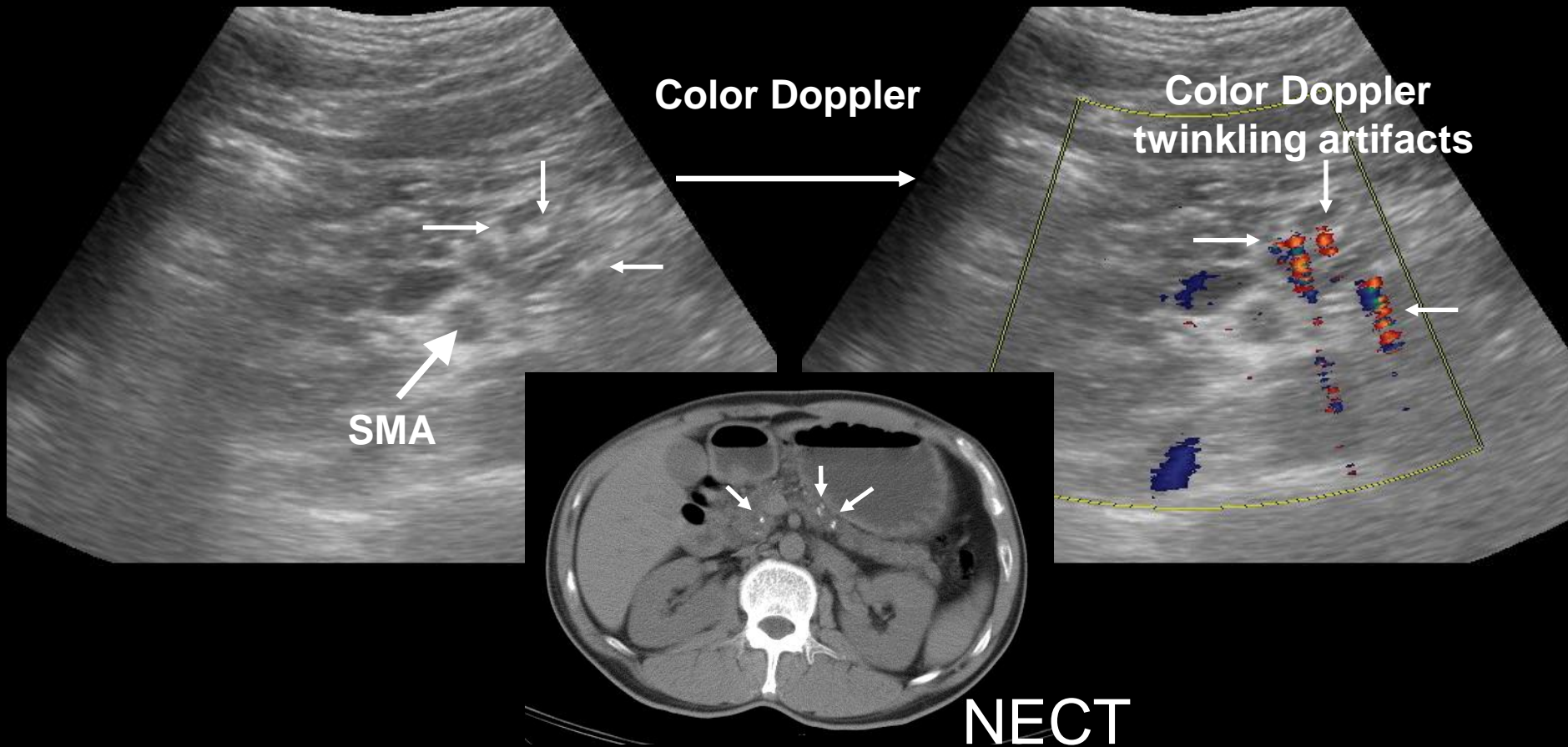
**M/39, Chronic epigastric pain for years
Ultrasound images of pancreas.
What is your diagnosis?**



SMA, superior mesenteric artery

A41-1

診断: Chronic pancreatitis (with parenchymal calcification)



SMA, superior mesenteric artery

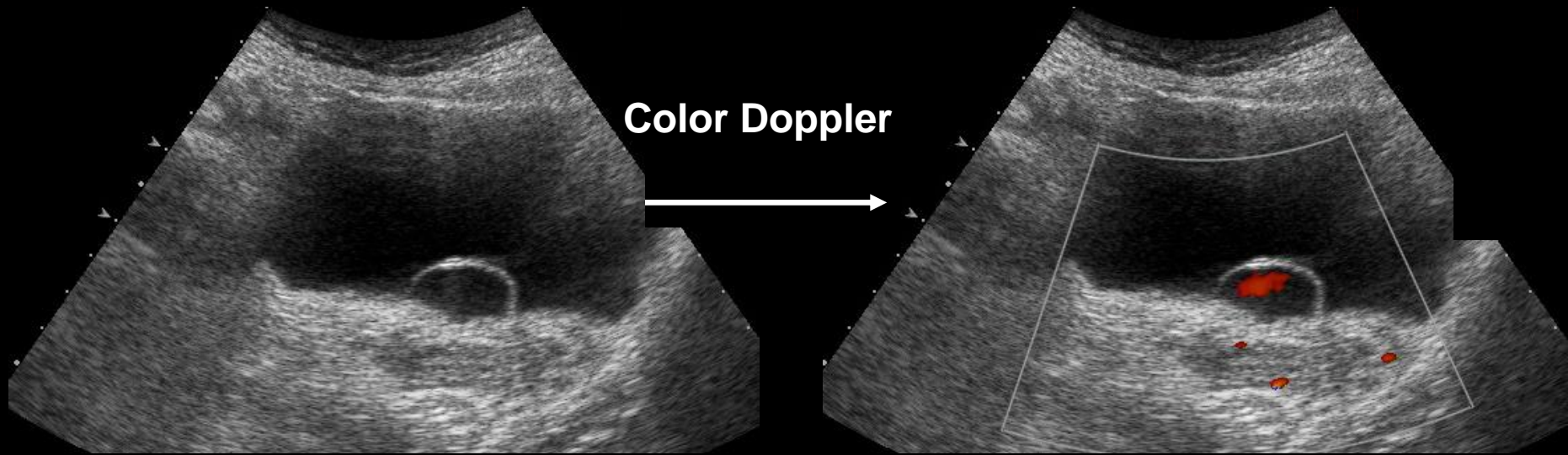
Discussion

- The presence of parenchymal calcifications is one of the features of chronic pancreatitis.
- Small calcifications can be subtle in gray-scale ultrasonography when not having posterior acoustic shadowing.
- However, they may quite obvious in the color Doppler mode because of the twinkling artifact.
- The color Doppler twinkling artifact manifests as a rapidly changing mixture of red and blue colors behind a strongly reflecting structure. The roughness of the reflecting surface is directly related to the intensity of the twinkling artifact.

Q42

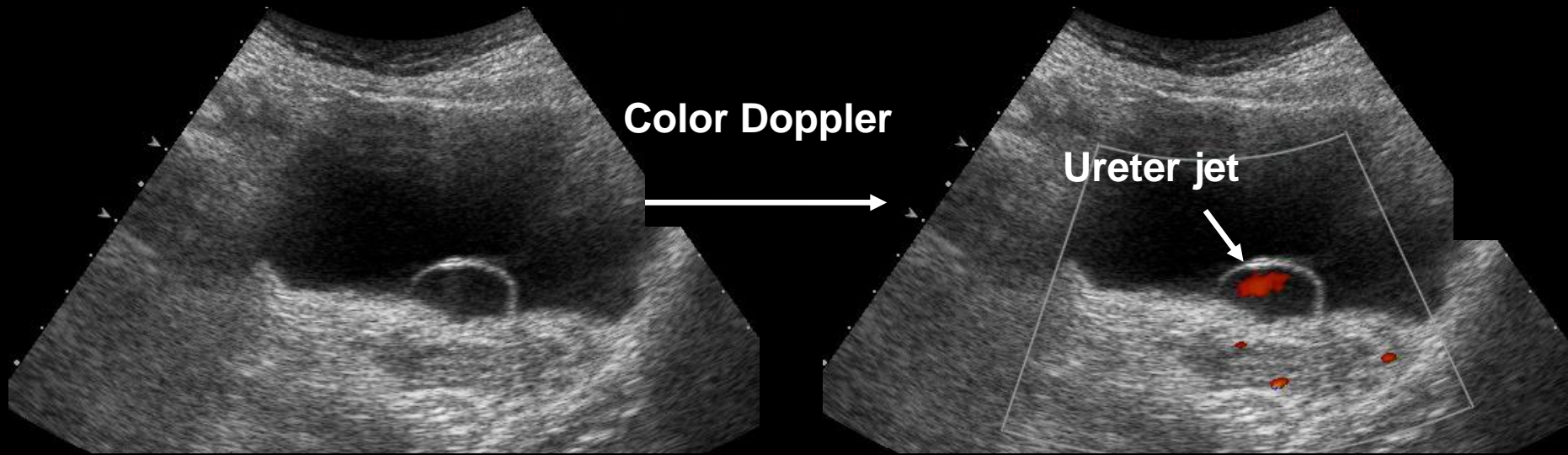
**F/30, Ultrasound images of
bladder.**

What is your diagnosis?



A42-1

診斷： (right) ureterocele



Discussion

- A thin wall cystic structure with ureter jet (color Doppler) in bladder is a feature specific to ureterocele.
- The observation of ureter jet is a means of identifying the bladder trigone and assessing ureteral function.
- The ureter jet is more obvious by Doppler image than gray-scale image because of Doppler techniques are more sensitive to moving, low-level reflections than conventional gray-scale sonography.

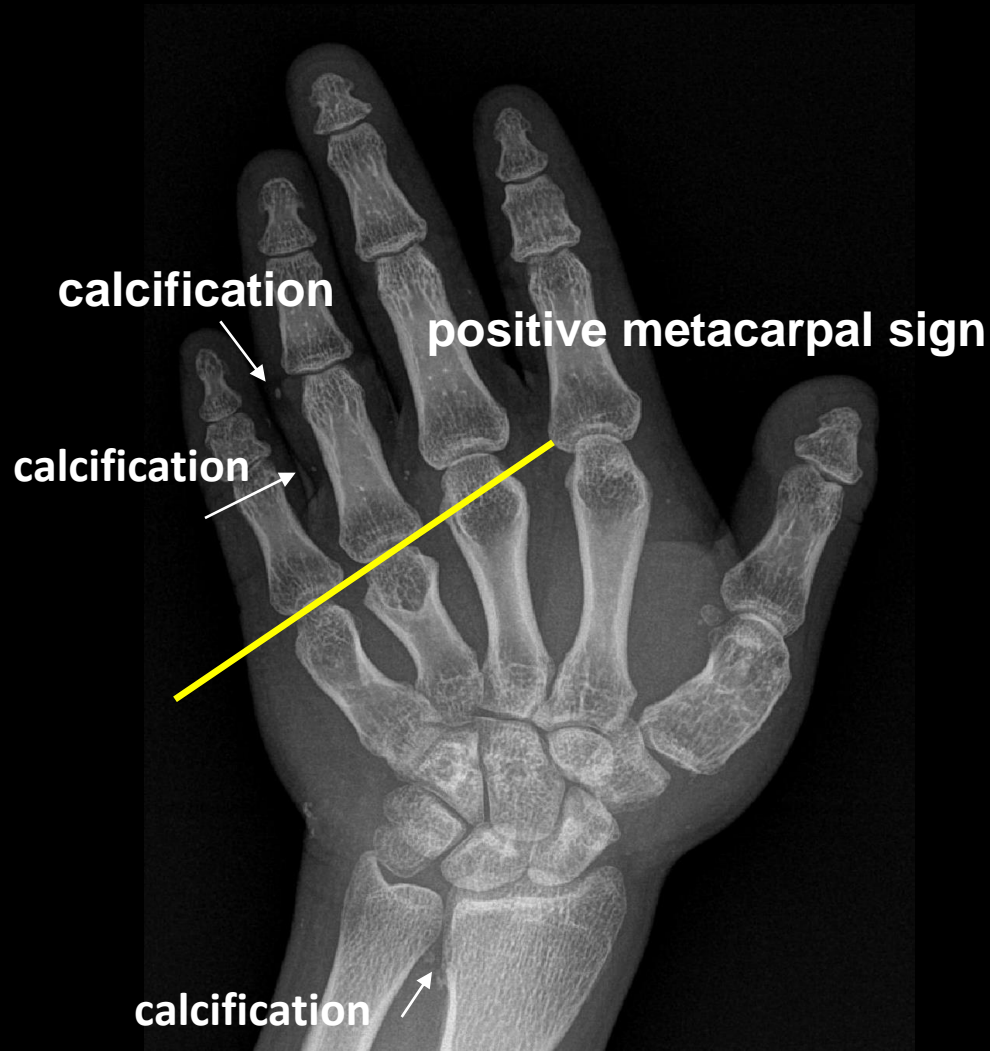
Q43 M/18,
Elevated parathyroid hormone level.
What is your diagnosis?



Non-enhanced CT

A43-1

診断: Albright's hereditary osteodystrophy



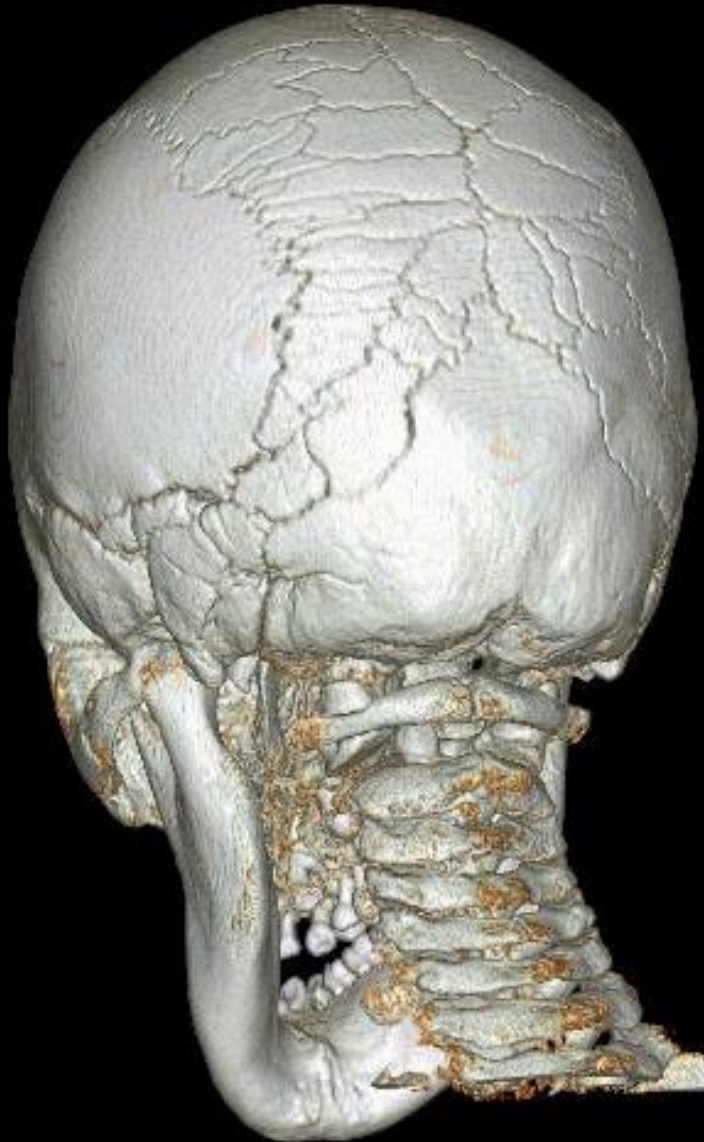
Non-enhanced CT

Discussion

- Albright's hereditary osteodystrophy with brachydactyly (positive metacarpal sign) (and soft tissue calcifications) and multiple symmetric calcifications in brain.
- Concerning the laboratory data of elevated parathyroid hormone level, Albright's hereditary osteodystrophy under pseudohypoparathyroidism should be considered.

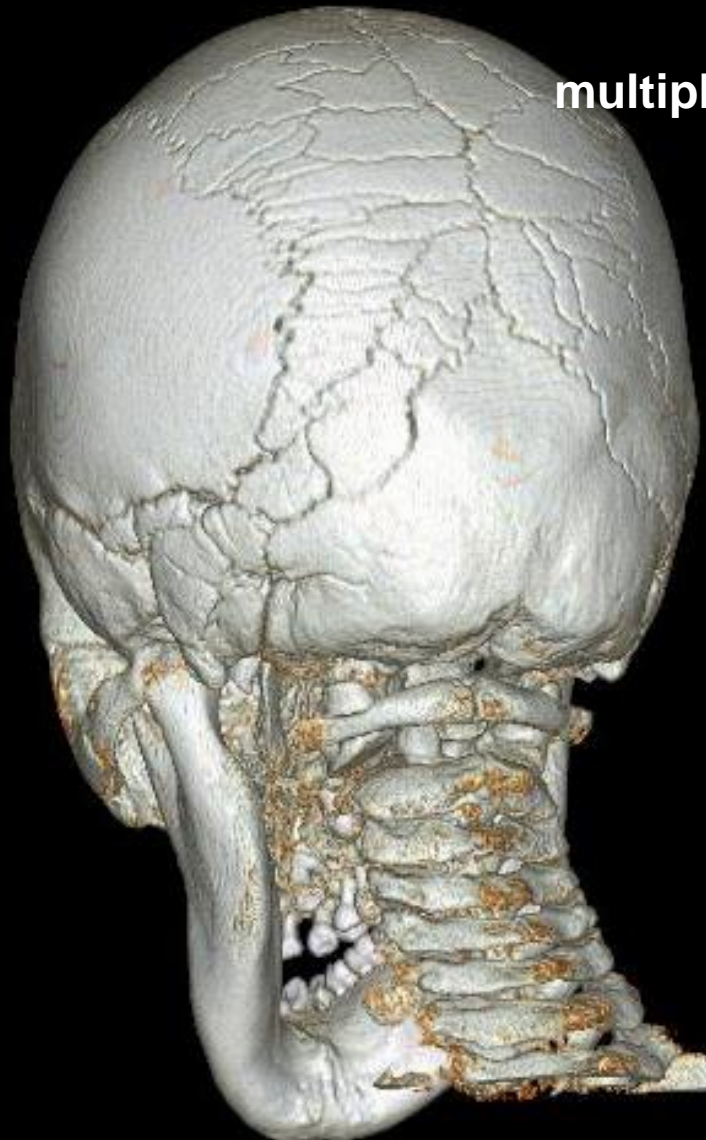
Q44

**M/13, Short stature
What is your diagnosis?**



A44-1

診斷: Cleidocranial dysplasia



multiple wormian bones



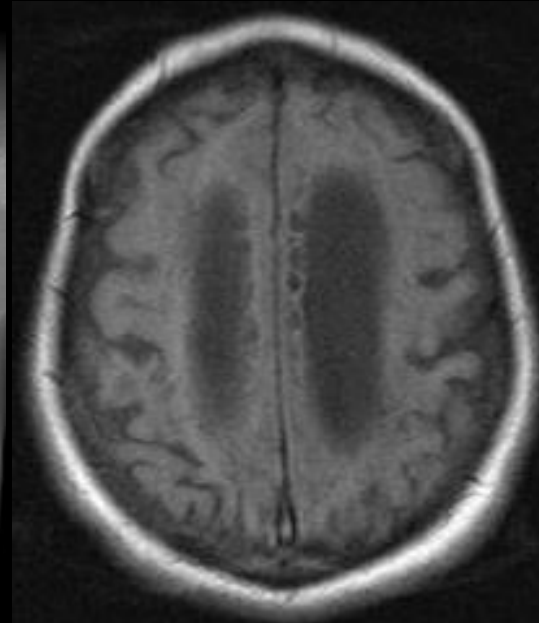
hypoplasia of clavicles

R

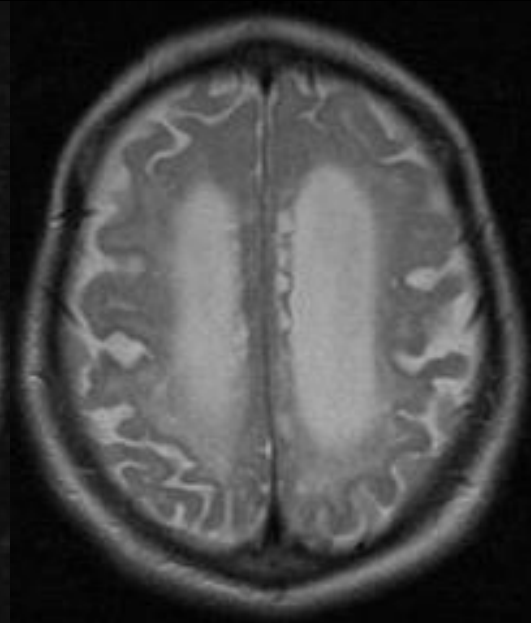
Discussion

- Cleidocranial dysplasia is a rare, autosomal dominant bone disease characterized by hypoplastic or aplastic clavicles, wide cranial sutures, supernumerary teeth, short stature, and other skeletal disorders.

Q45 M/8,
Developmental retardation, seizure.
What is your diagnosis?



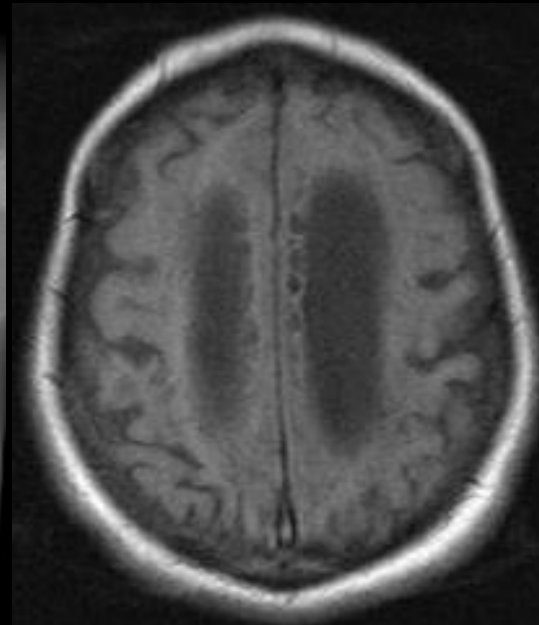
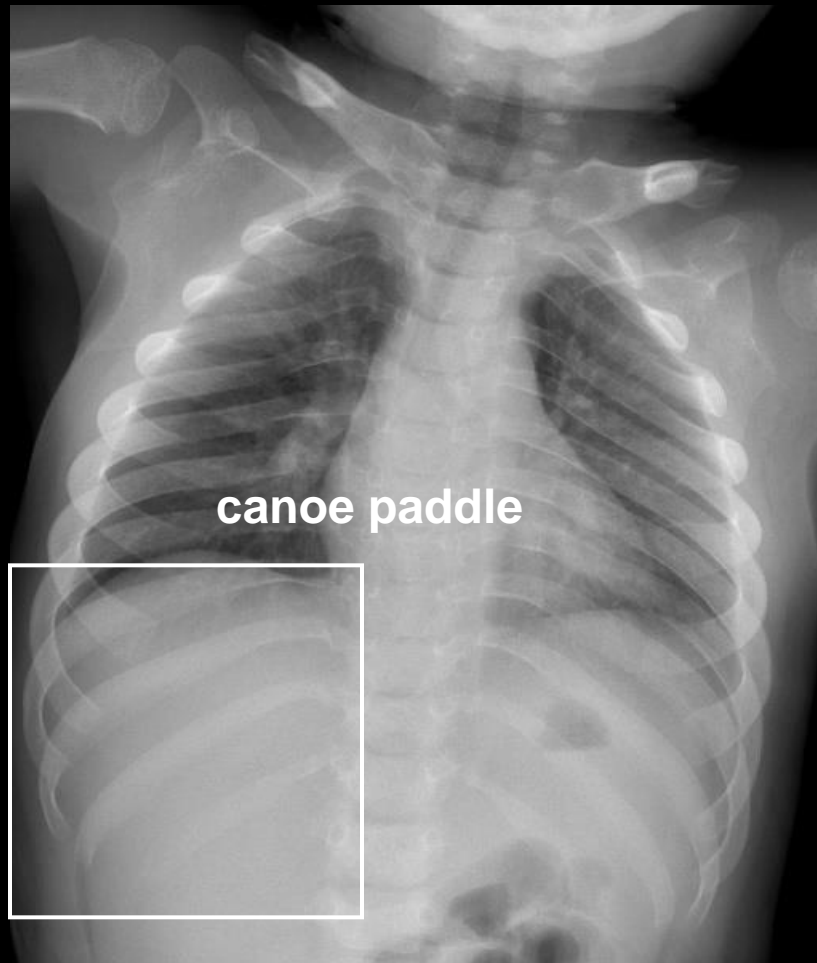
T1WI



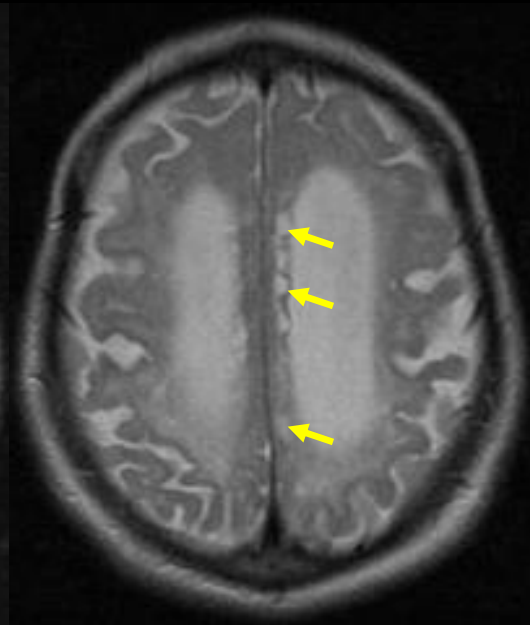
T2WI

A45-1

診断: Mucopolysaccharidosis



T1WI



T2WI

Discussion

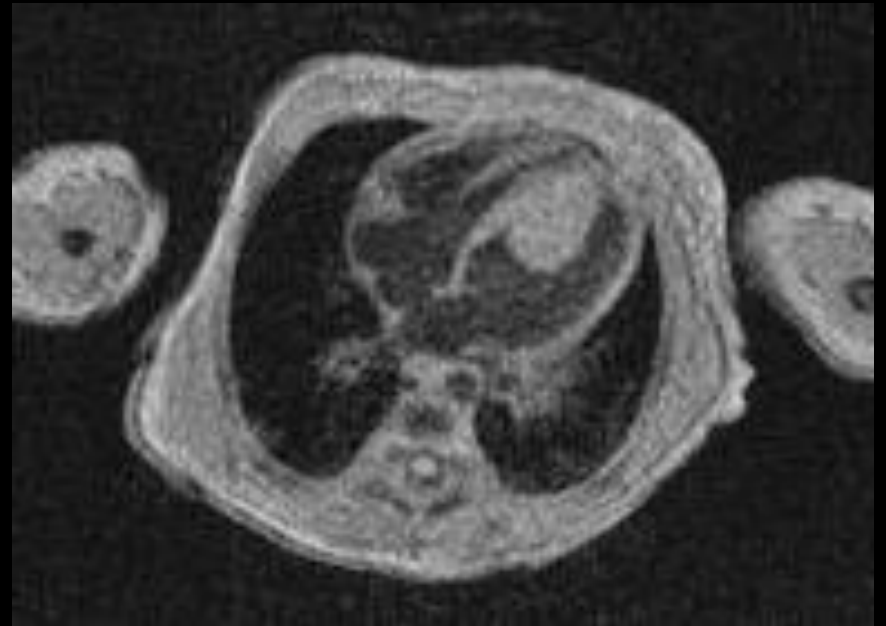
- Mucopolysaccharidosis (type II) with
 1. symmetric shortening and widening of bilateral clavicles, proximal thinning and distal widening of bilateral short ribs (canoe paddle), and mild deformity of bilateral proximal humeri
 2. hydrocephalus (possibly associated with communicating hydrocephalus from abnormal thickening of the arachnoid membrane), brain atrophy (enlargement of surface sulci), and periventricular dilated Virchow-Robin (perivascular) spaces (filled with mucopolysaccharide/cerebrospinal fluid).

Q46

Newborn female
Heart mass noted by prenatal
echocardiography
What is your diagnosis?



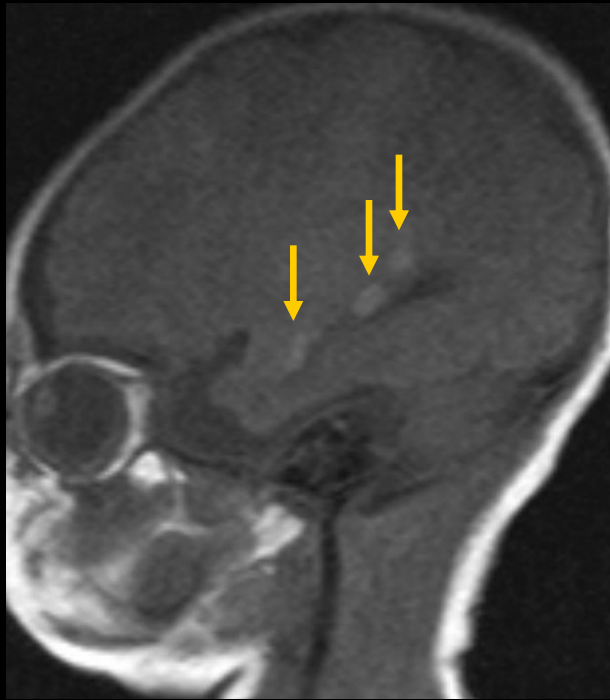
T1WI



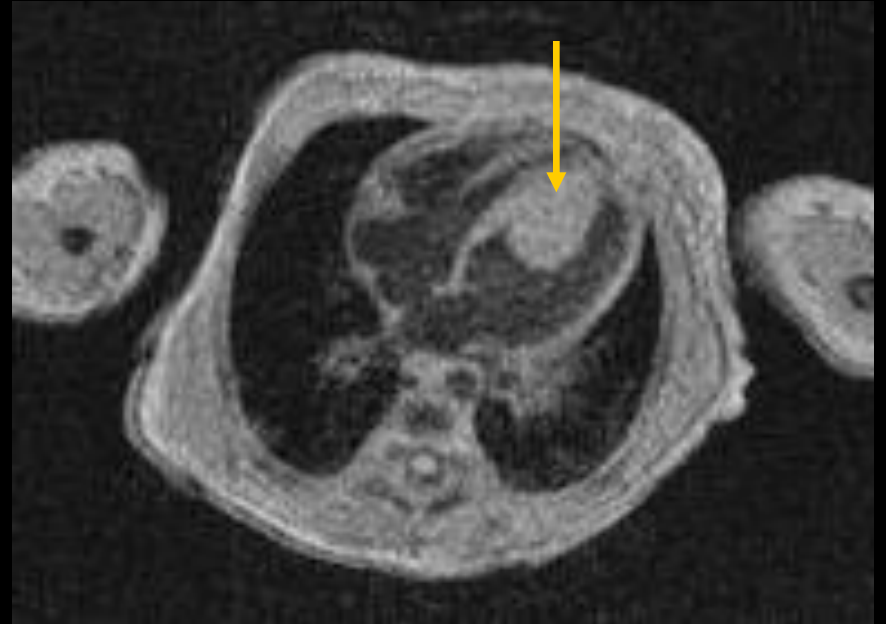
T1WI_Dark blood

A46-1

**診断: Tuberous sclerosis complex
(with subependymal nodules and
rhabdomyomas)**



T1WI



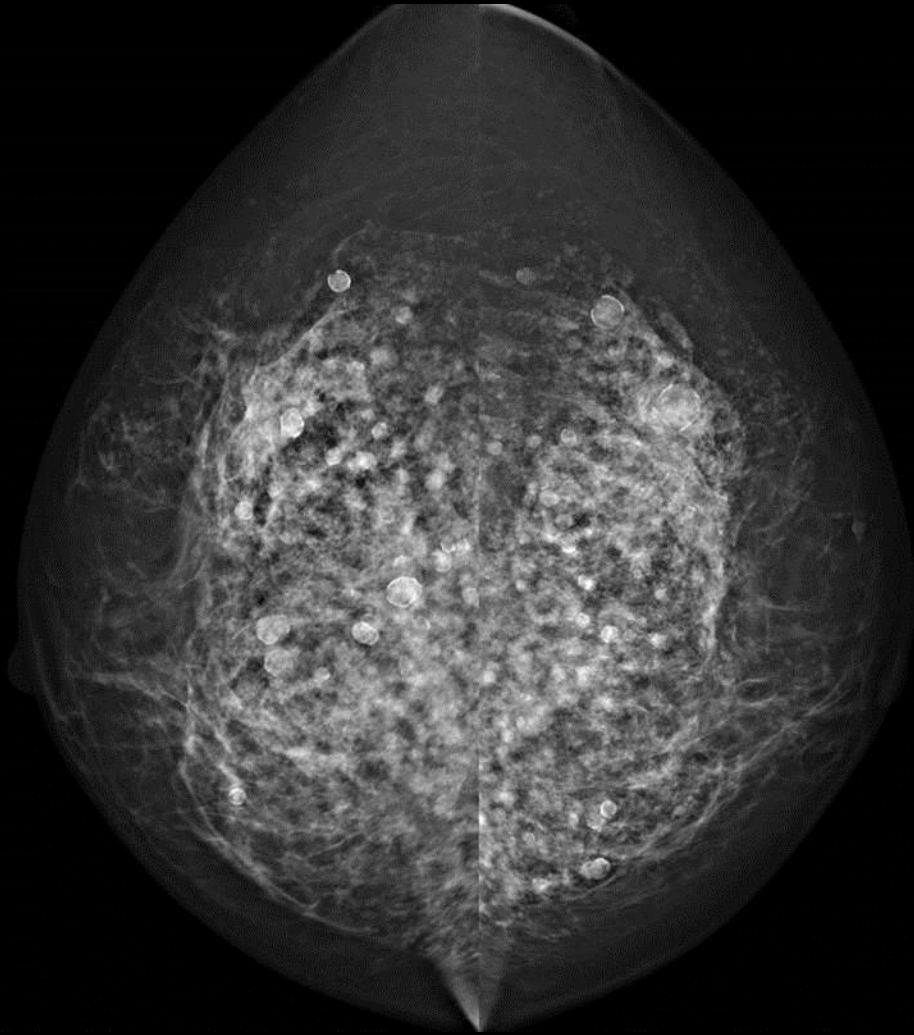
T1WI_Dark blood

Discussion

- Tuberous sclerosis complex (TSC) is a multi-system genetic disease that causes non-malignant tumors to grow in the brain and on other vital organs such as the kidneys, heart, eyes, lungs, and skin.
- Classic intracranial manifestations of tuberous sclerosis include subependymal nodules and cortical/subcortical tubers.
- Rhabdomyomas are benign tumors of striated muscle. A cardiac rhabdomyoma can be discovered using echocardiography in approximately 50% of people with TSC. However the incidence in the newborn may be as high as 90% and in adults as low as 20%. These tumors grow during the second half of pregnancy and regress after birth. Many will disappear entirely.

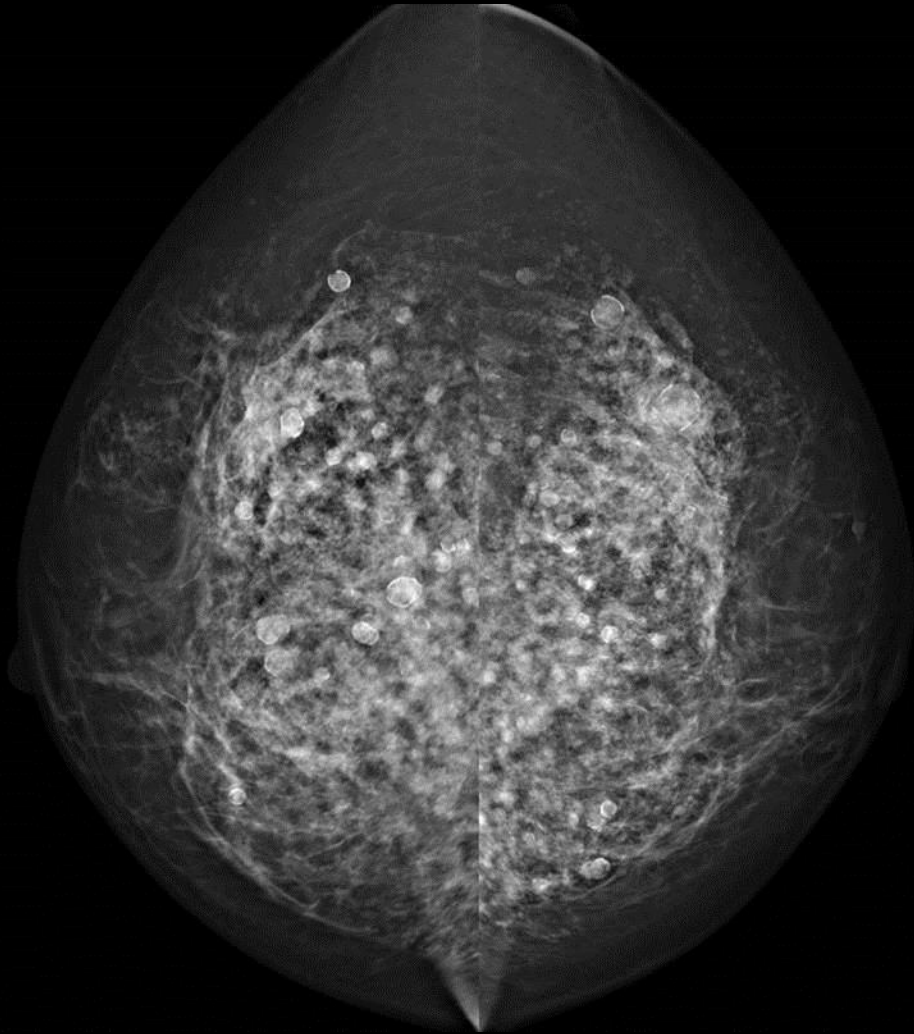
Q47

**F/58, Screening mammography
What is your diagnosis ?**



A47-1

診断: Siliconoma/Silicon granuloma

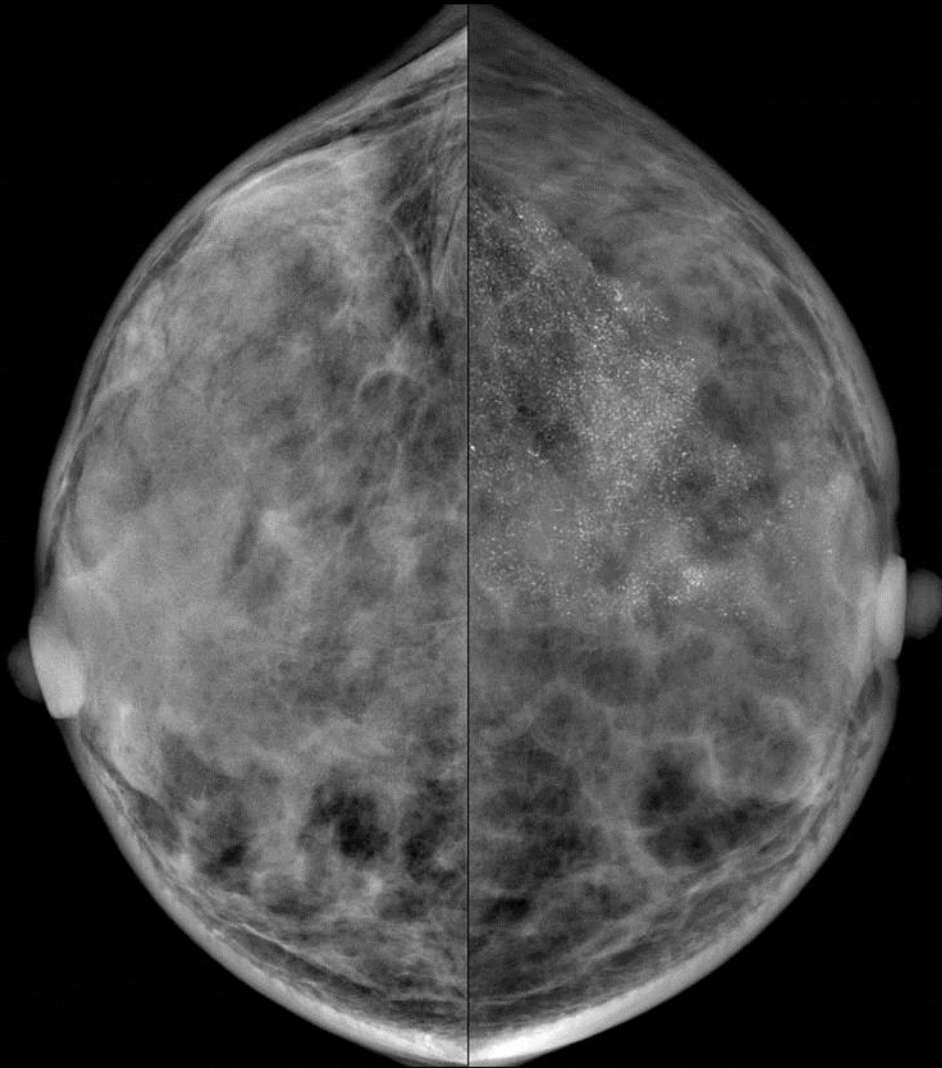


Discussion

- Siliconoma/Silicone granuloma :
 - When silicone is injected subcutaneously in liquid form, a foreign body reaction occurs, with giant cell formation and phagocytosis of the material, leading to the formation of a granuloma.
- At mammography :
 - Multiple radiopaque globules
 - Some with a rim of calcification
 - Distort and obscuring the breast parenchyma, easily hindering the subtle signs of early breast cancer

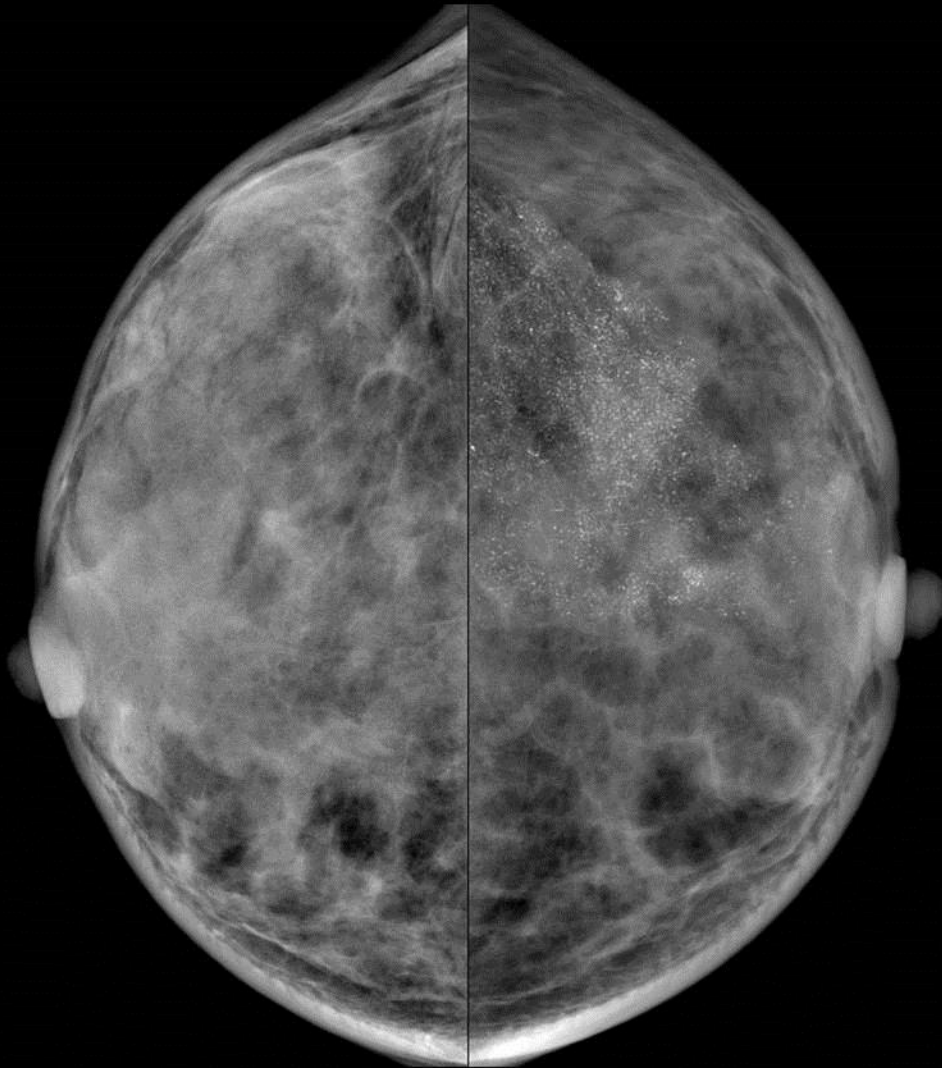
Q48

**F/26, Painless mass over left breast
What is your BIRADs ?**



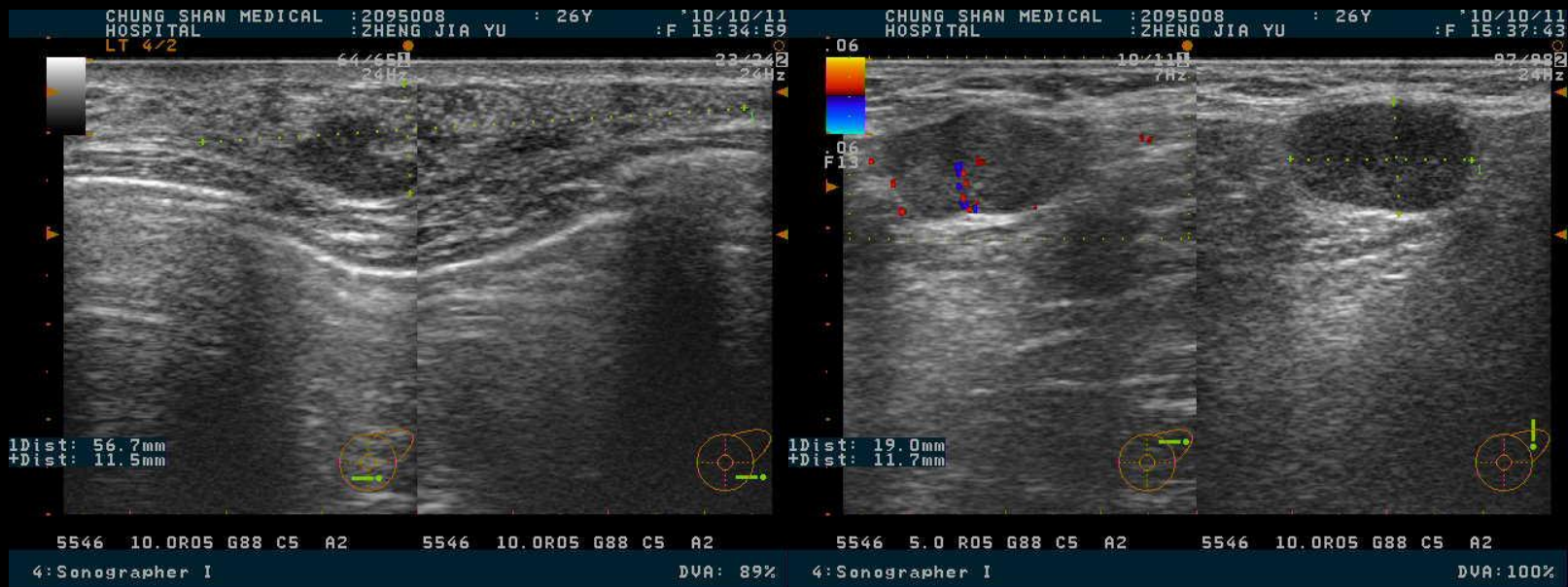
A48-1

診断：BIRADs 4



Discussion

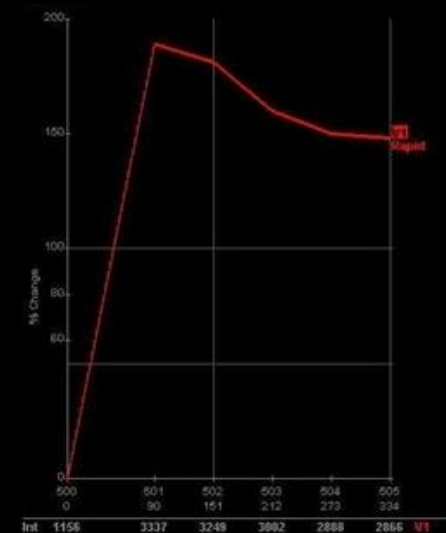
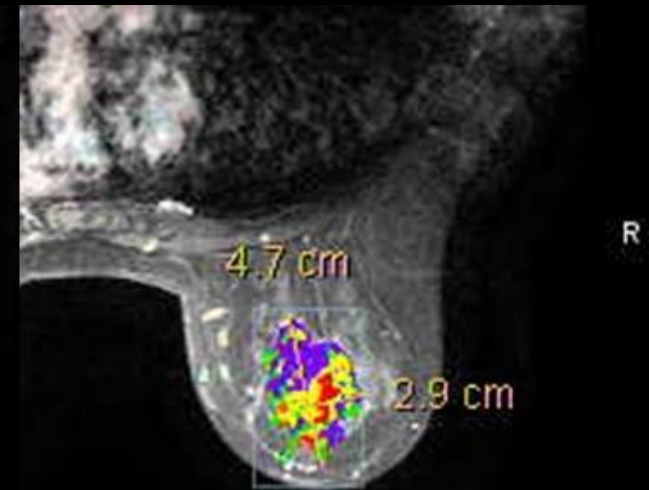
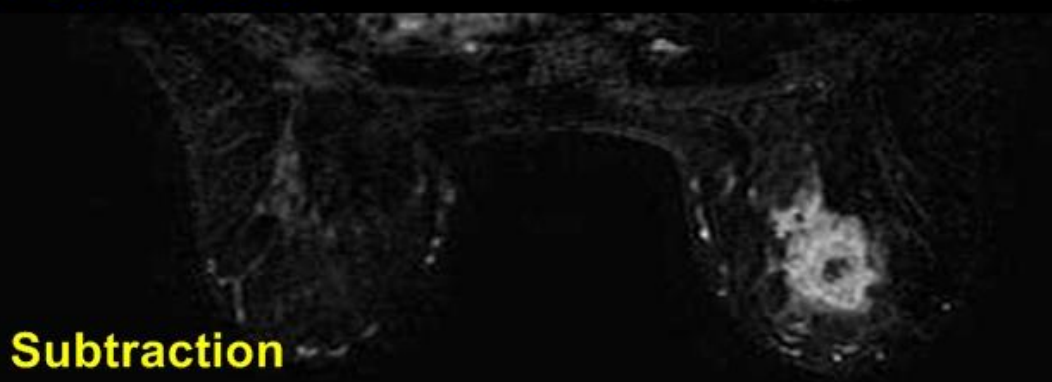
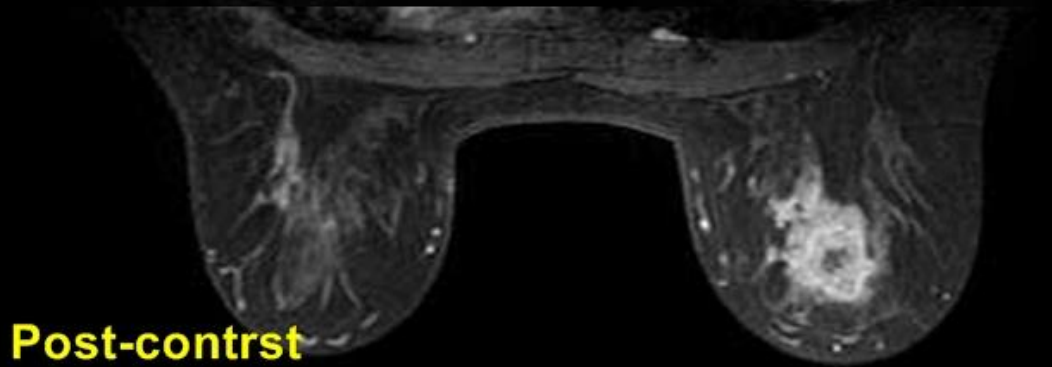
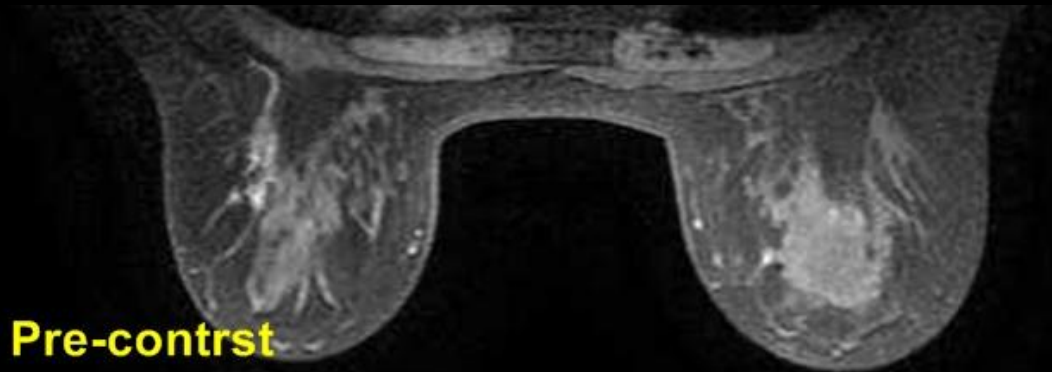
- Microcalcifications in left LOQ breast
- Segmental distribution
 - Calcium deposits in ducts and branches of a segment or lobe
 - Favor a ductal distribution (i.e. malignancy)



Path : Invasive ductal carcinoma with axillary lymph node metastasis

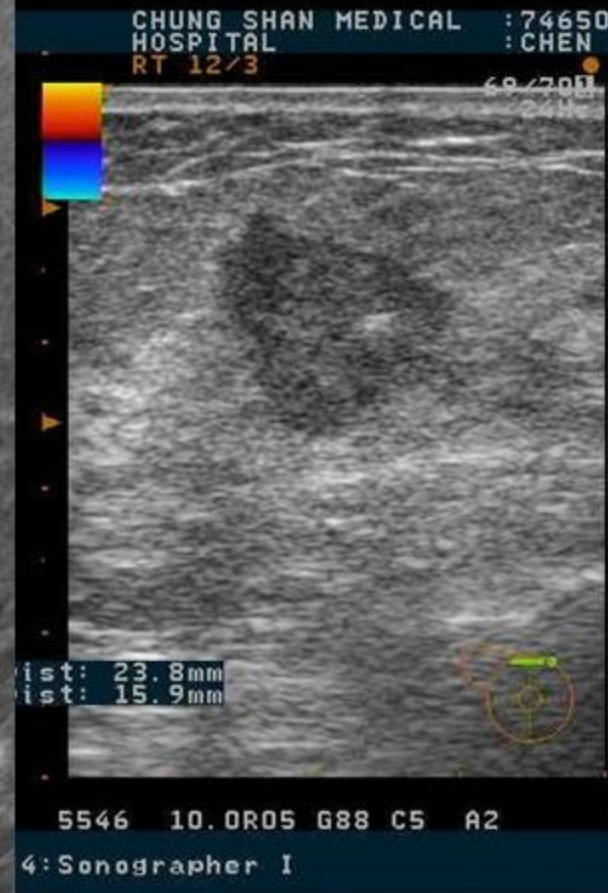
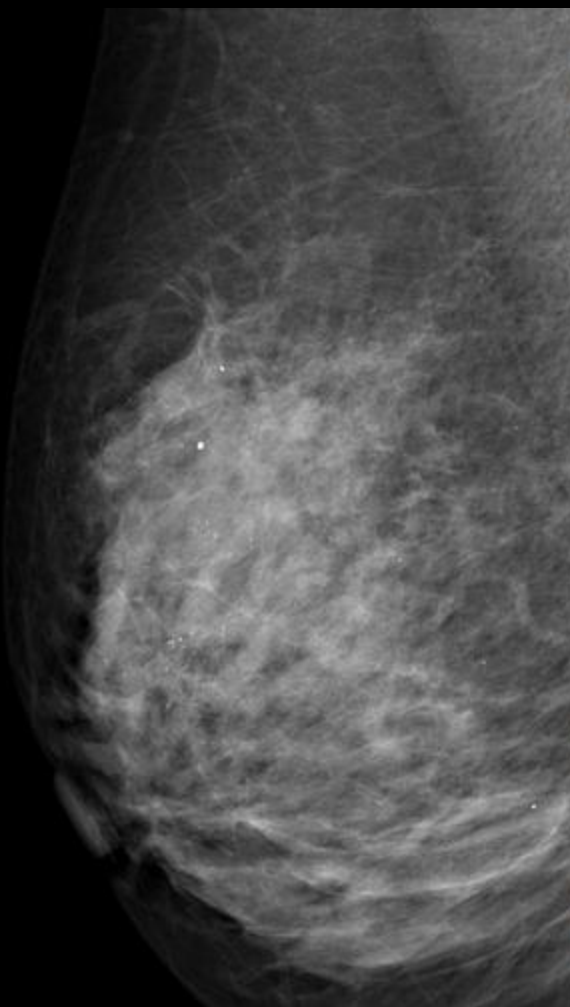
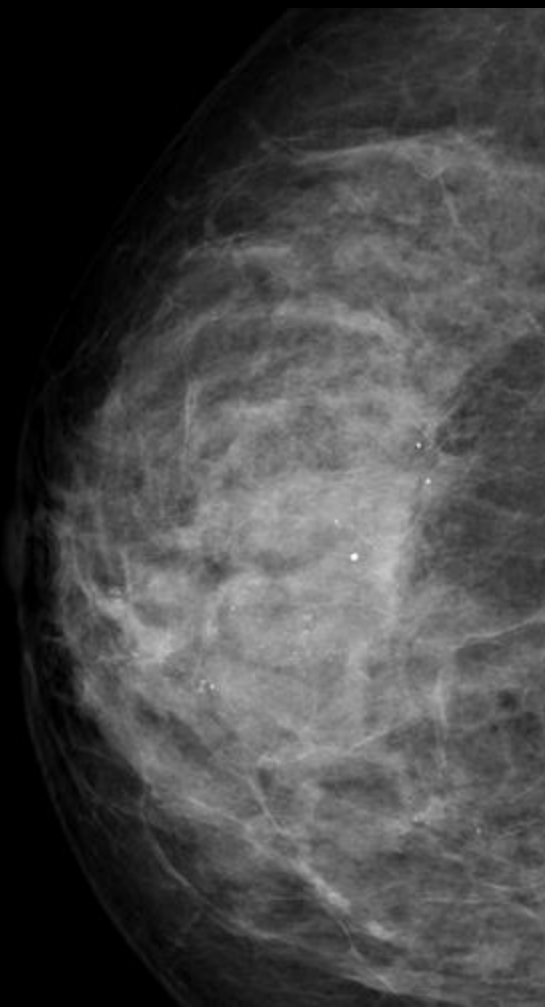
Q49

F/66, Right breast lesion.
What is your diagnosis ?



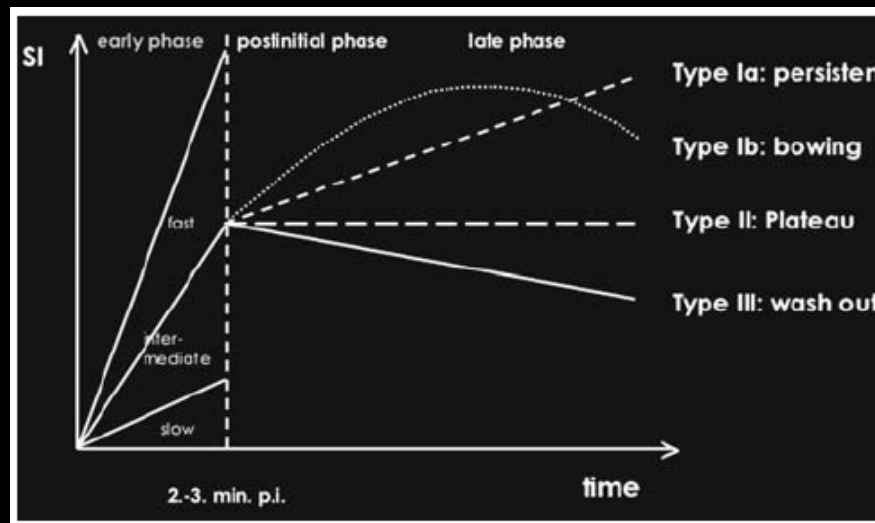
A49-1

診斷：Breast cancer

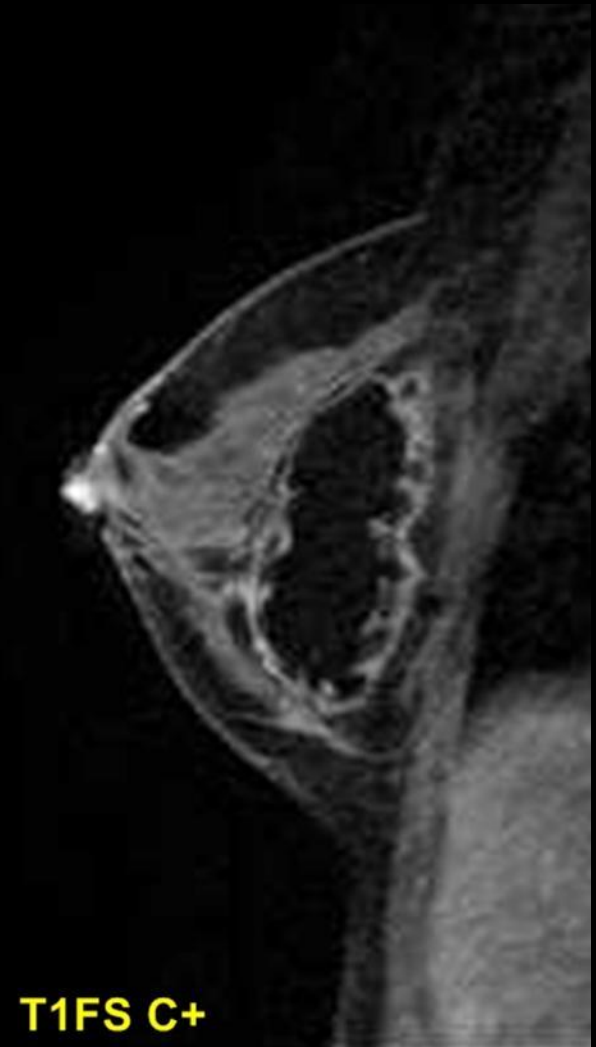
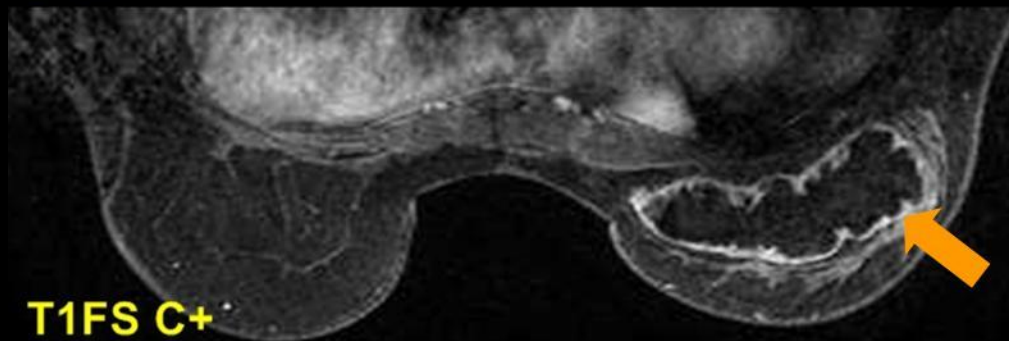
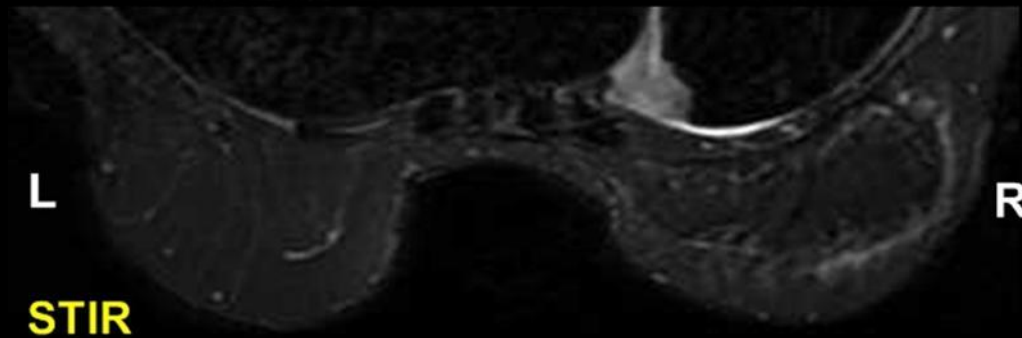
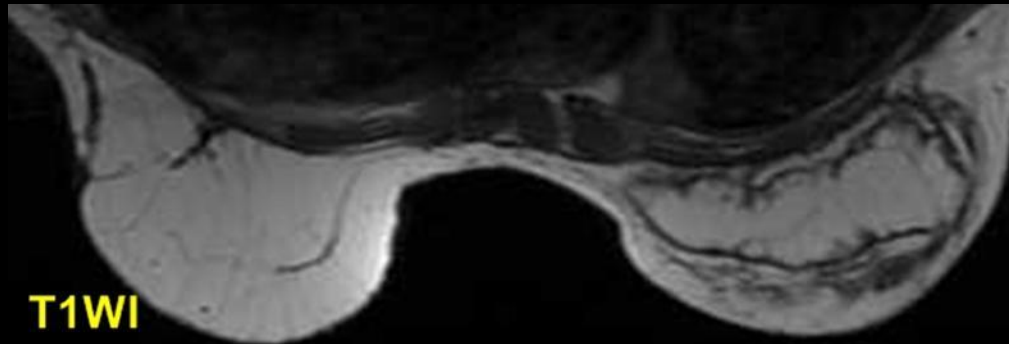


Discussion

- Both lesion morphology and enhancement kinetics are useful parameters in identifying malignant lesions
 - The features with highest positive predictive value for malignancy included spiculated margin, rim enhancement, and irregular shape for masses, and segmental or clumped ductal enhancement for non-mass lesions
 - A washout (type 3) time-signal intensity curve is a strong independent predictor of malignancy

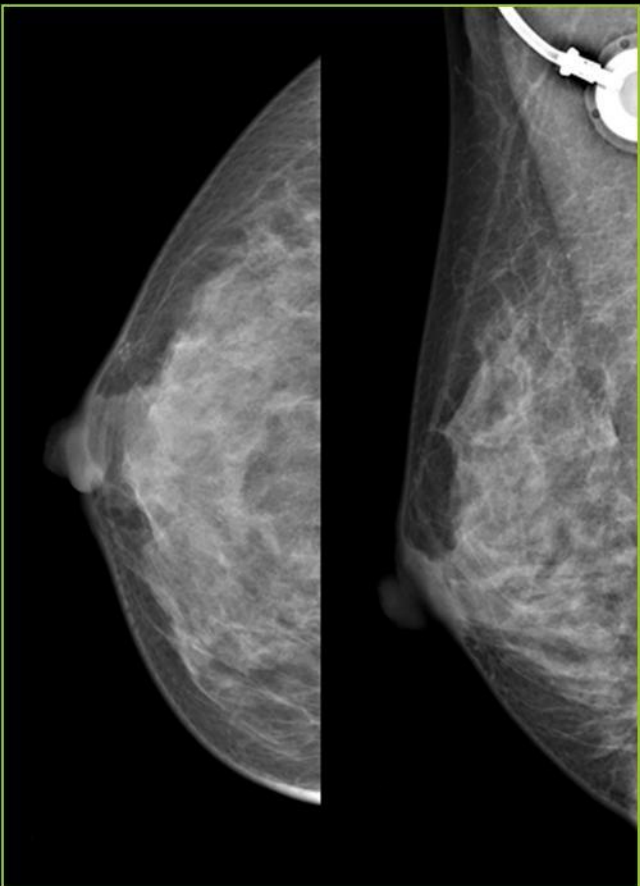


Q50 F/40, Left breast cancer
Post MRM and bilateral reconstruction
What is your diagnosis ?

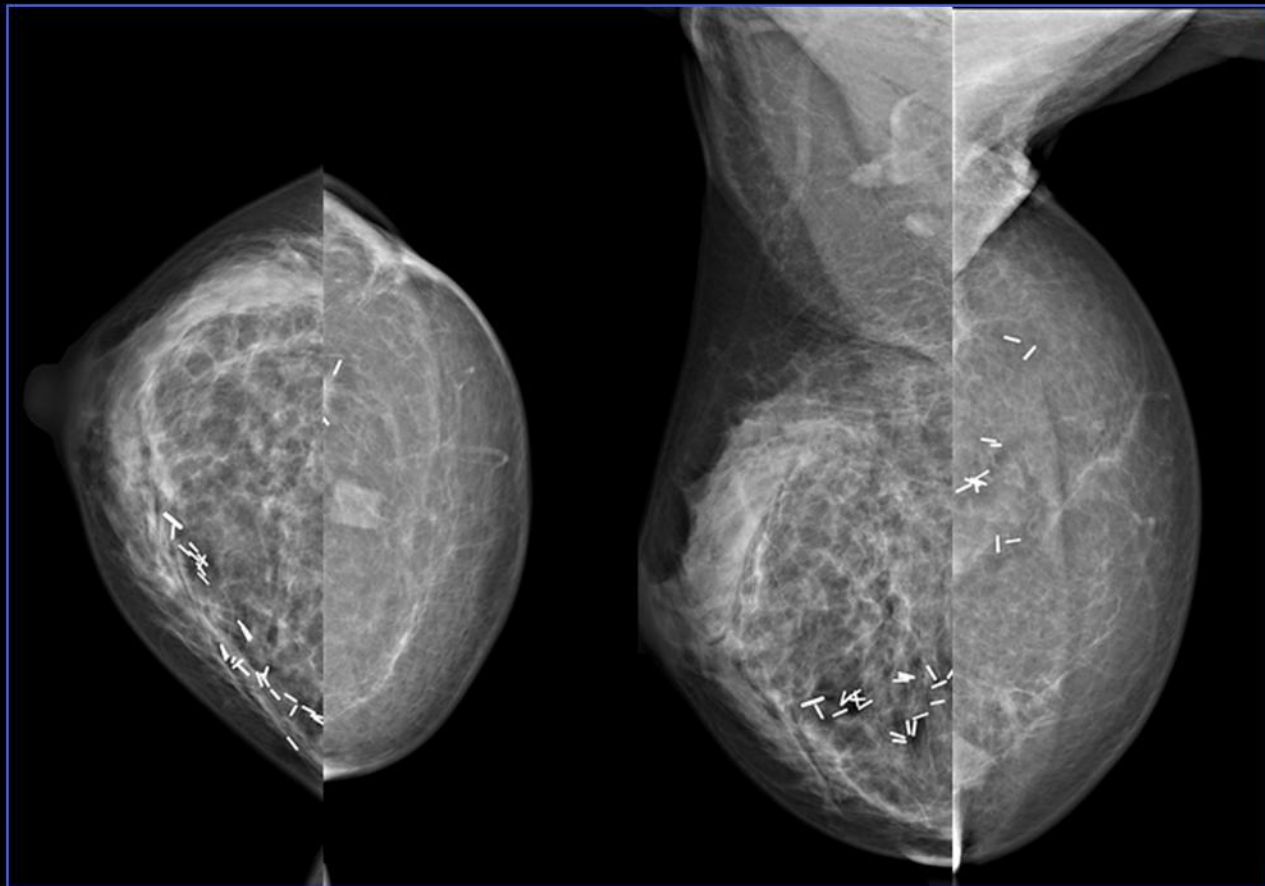


A50-1

診断：Fat necrosis



Post MRM



Post MRM and reconstruction

Discussion

- When necrosis of fat cells occurs, from loss of vascular supply from surgery, radiation, or other trauma, enzymes lipolyze the content of adipocytes.
 - Fat necrosis consists of a collection of inflammatory cells, lipid-laden macrophages, histiocytes, and hemorrhage
 - As time goes by the necrotic tissues become surrounded by giant cell granulomatous reaction, much later by fibrosis
- Breast MRI :
 - Central high signal fat mass
 - Surrounding prominent thick, irregular rim enhancement (like pseudocapsule)