NEW

Case of the Day

Check the Answer !

Case 1

78/F

C.C.: RUQ abdominal pain

Duration: 10 days

Lab data:

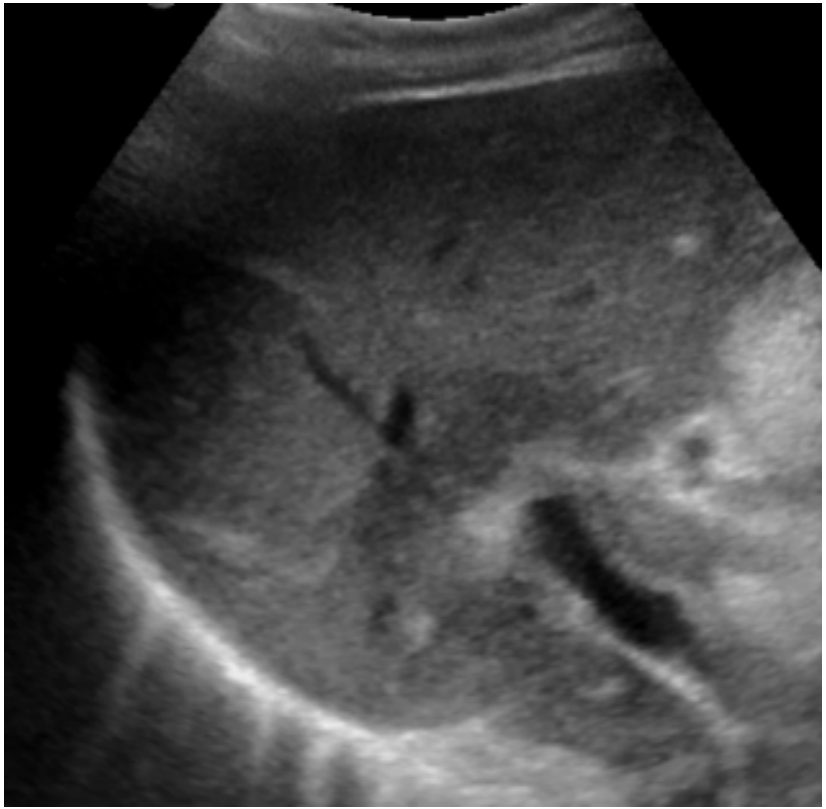
AST/ALT = 36(↑)/16 IU/L,

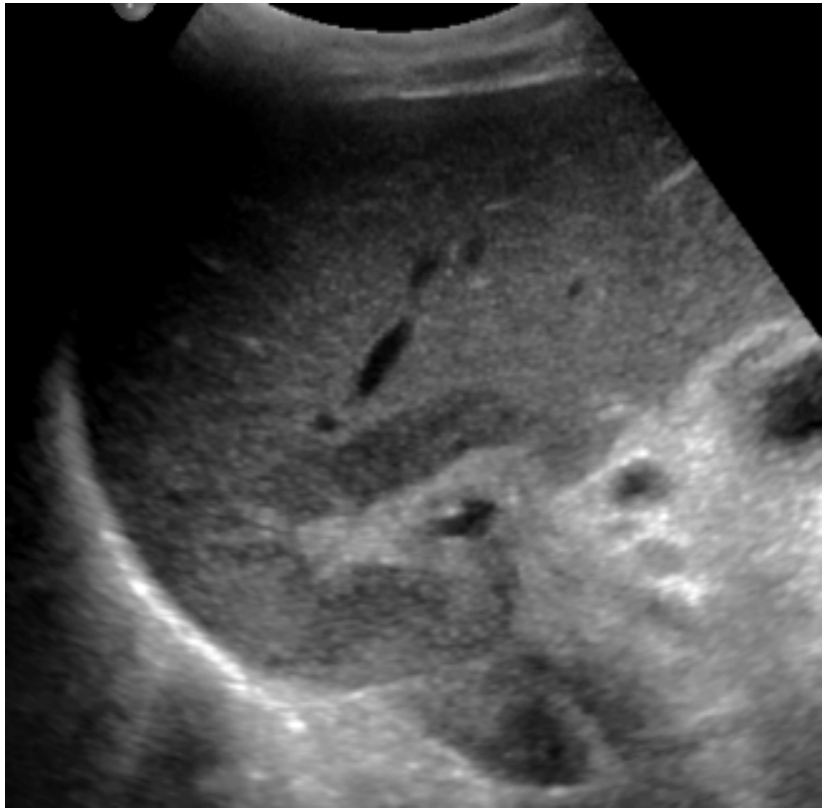
Alk. Phos = 132 IU/L(↑)

CRP = 18.2 mg/L(↑), ESR = 99 mm/hr(↑)

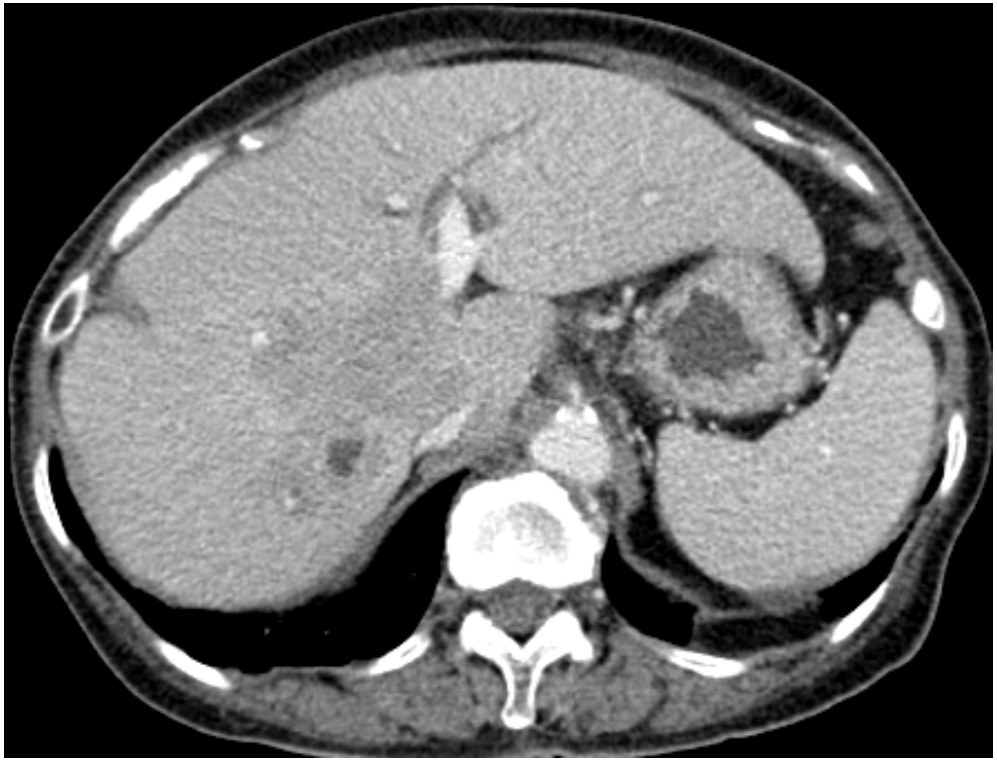
Question: Diagnosis?

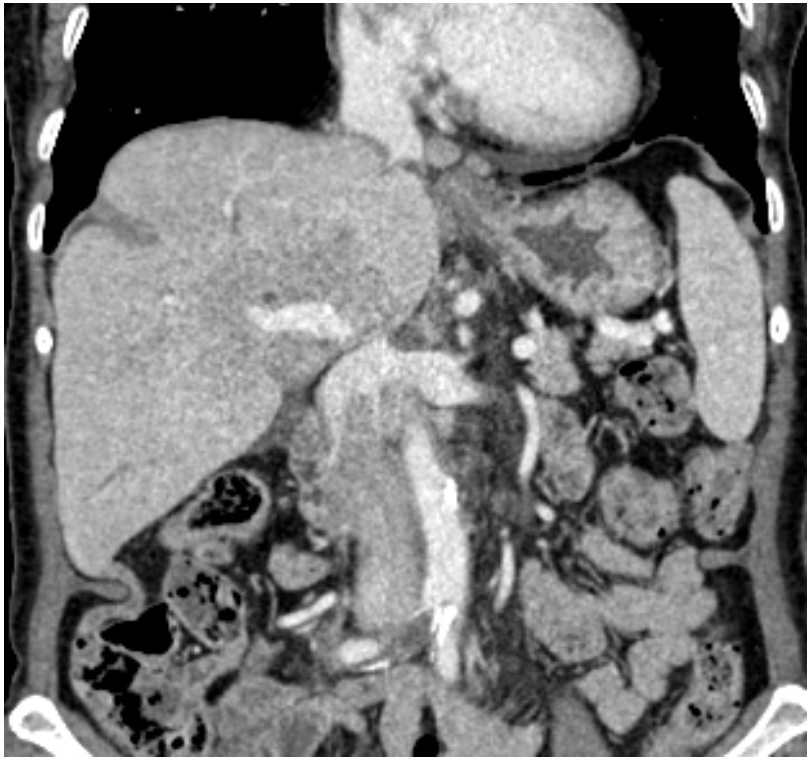
Case 1





Case 1

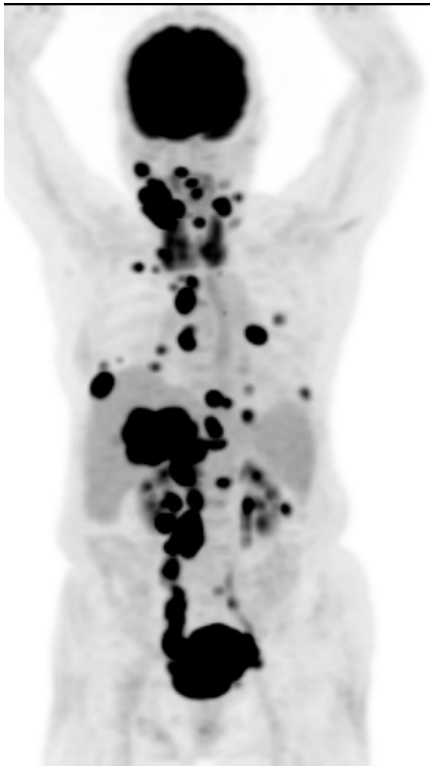




Malignant lymphoma

- Malignant lymphoma, diffuse large B cell lymphoma by liver biopsy
  (secondary hepatic involvement)

- DLBCL, stage IV:
  - involvement of liver, neck node,
    lung, pleura, right clavicle,
    uterus, bilateral adnexa.



Hepatic involvement of malignant lymphoma

- Secondary hepatic involvement with lymphoma: most common (~20%) by non-Hodgkin lymphoma - typically diffusely infiltrating rather than a focal mass with sometimes miliary/nodular pattern
- Primary hepatic lymphoma: extremely rare
- Risk factors for developing Hepatic lymphoma:
  - HIV/AIDS (25-46%)
  - Hepatitis C (HCV) mostly in patients with non-Hodgkin's lymphoma (15%)
  - Organ transplantation (2-12%)
  - Immunosuppression

Imaging Findings:

- US: well-defined hypoechoic nodular or infiltrative lesions without posterior acoustic enhancement, hepatomegaly (30%), abdominal lymphadenopathy
- CECT: homogeneous low density discrete masses
- T1wMR: hypo- or isointense SI
- T2wMR: hyperintense SI
- CE MR: transient increased perilesional enhancement

DDx:

1) Cholangiocarcinoma (capsular retraction, delayed CE)
2) Neurofibromatosis (plexiform periportal low density lesion)
3) IgG4-related disease (homogeneous delayed CE with involvement of pancreas, bile duct, kidneys)
4) Focal fatty infiltration, metastasis, etc.

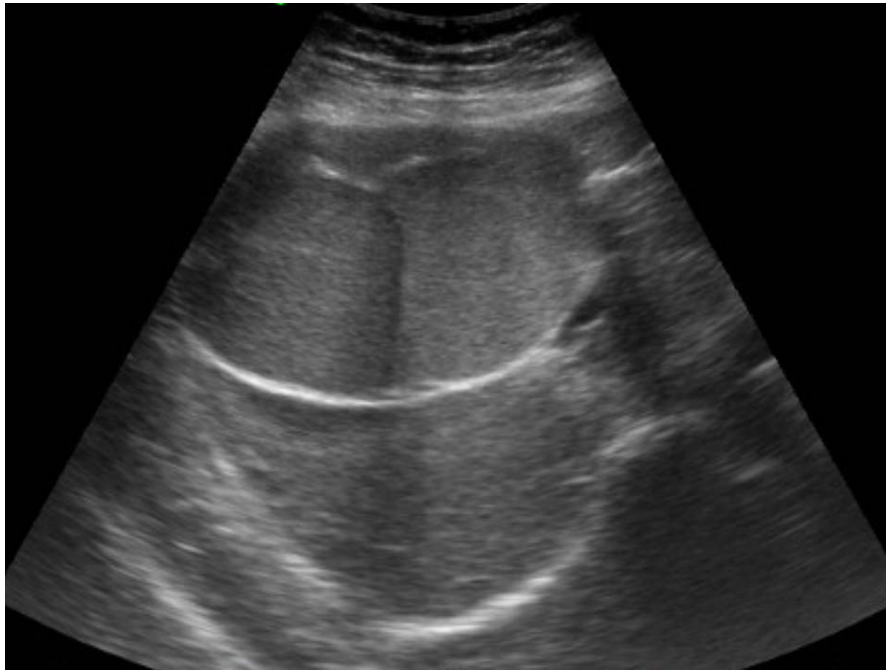
Case 2

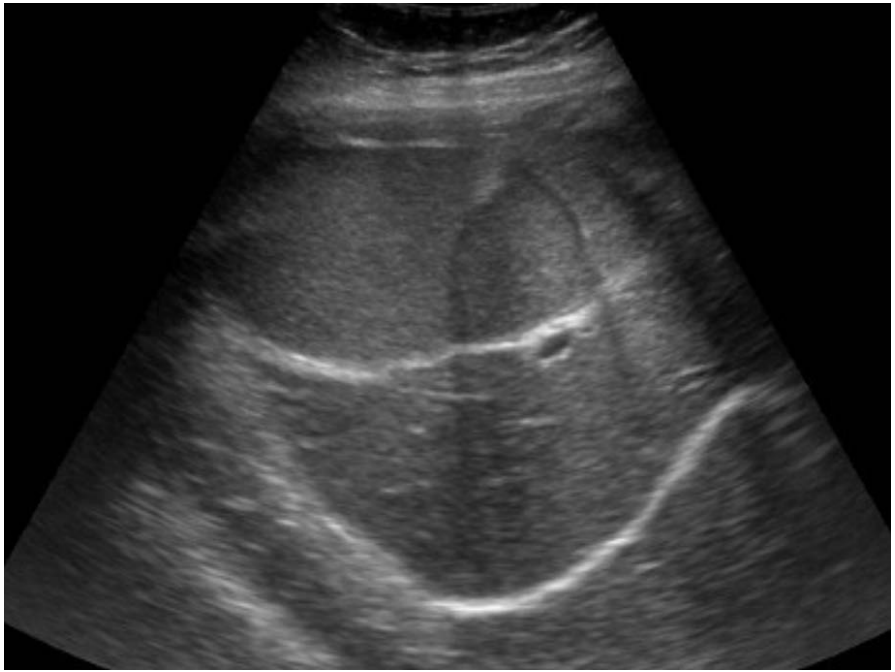
48/F

PHx.: Bilateral total mastectomy for breast cancer; Aspiration of hepatic cyst
C.C.: No symptoms

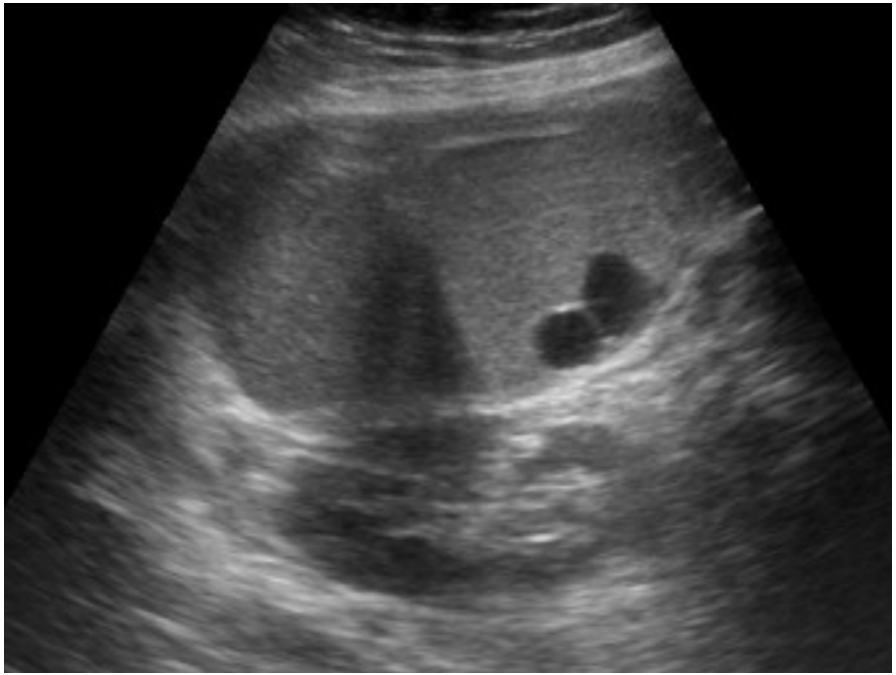
Question: Diagnosis?

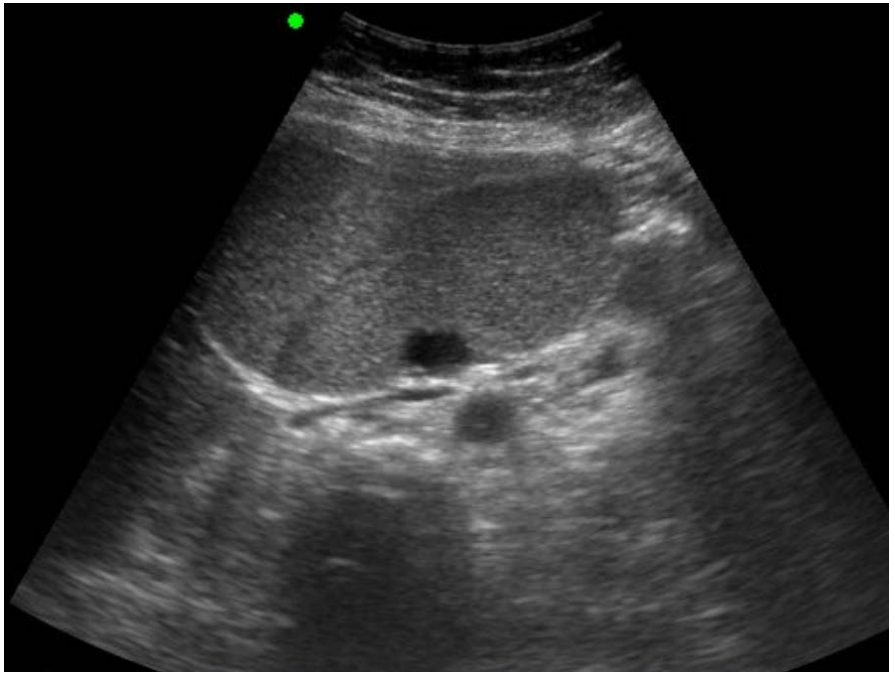
Case 2



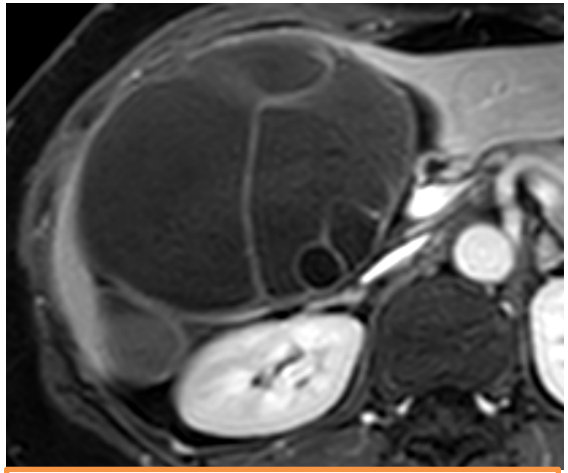


Case 2

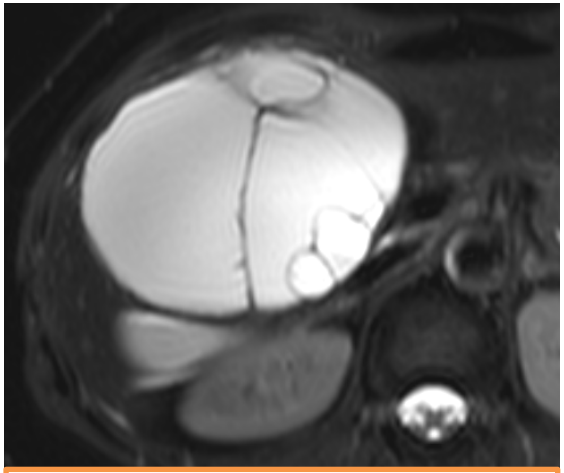




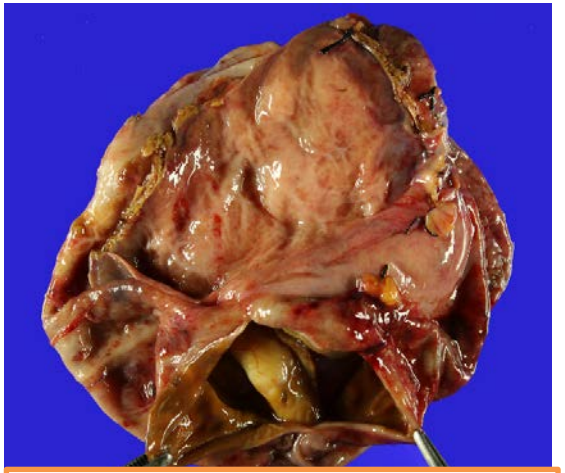
Mucinous cystic neoplasm or biliary cystadenoma



Contrast-enhanced T1-WI



T2-WI with fat saturation



Gross specimen

US findings of hepatic mucinous cystic neoplasm (biliary cystadenoma) in liver

- Appears as a unilocular or multilocular cyst
- The contents may range from completely anechoic to having low-level echoes from blood products, mucin, or proteinaceous fluid
- Mural nodules and papillary projections may project into the cyst lumen
- If septal or wall calcification is present then acoustic shadowing may be seen

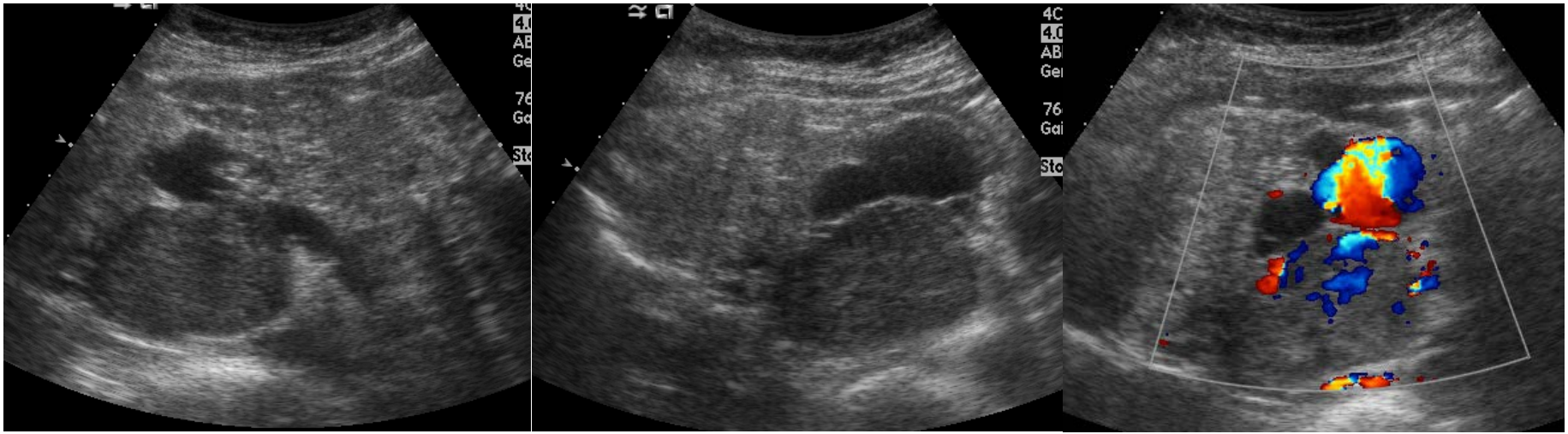
Case 3

51/F

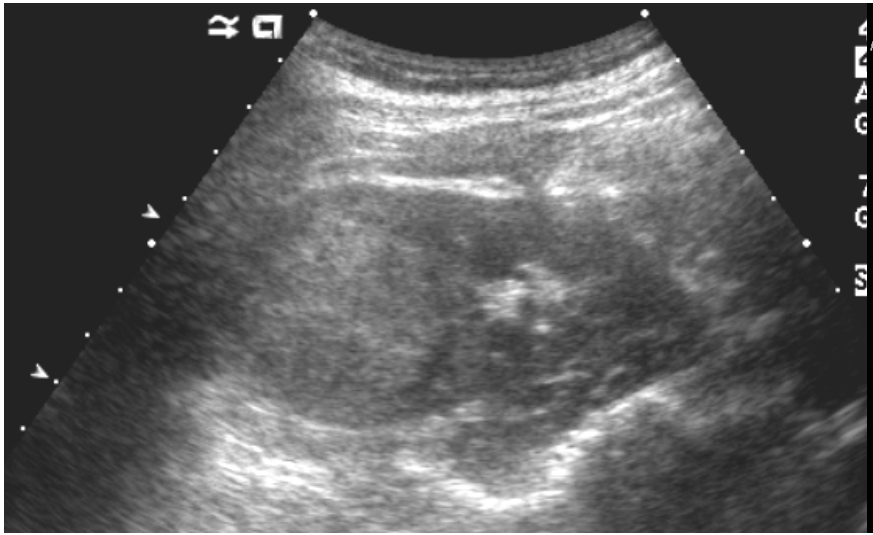
PHx.: DM, S/P mass removal of cervical spinal cord
C.C.: Pancreatic mass

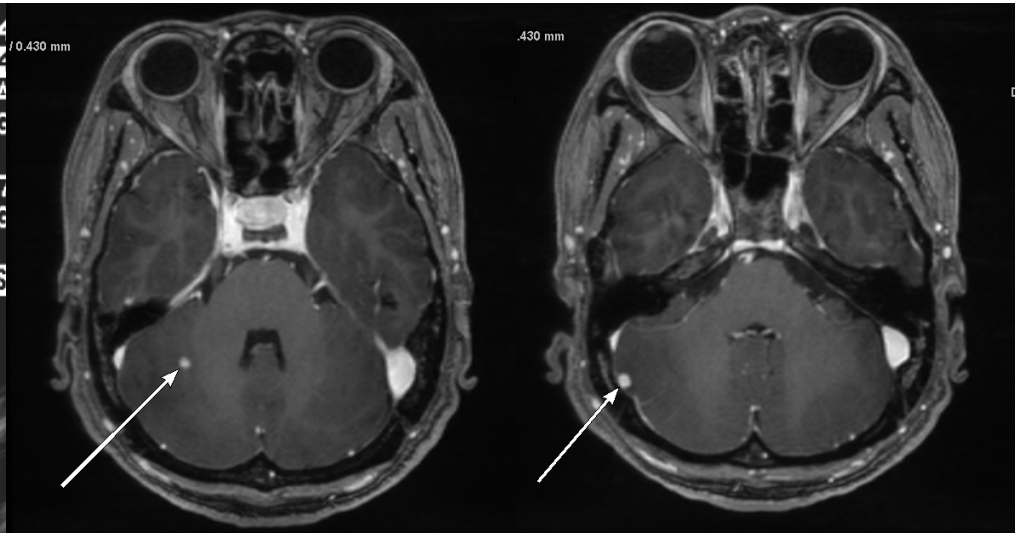
Question: Diagnosis of pancreatic lesion?

Case 3



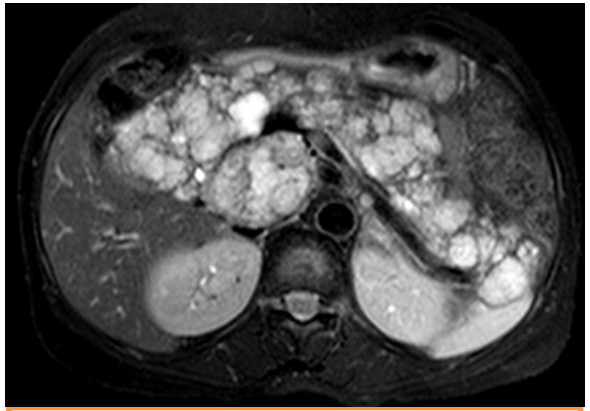
Case 3



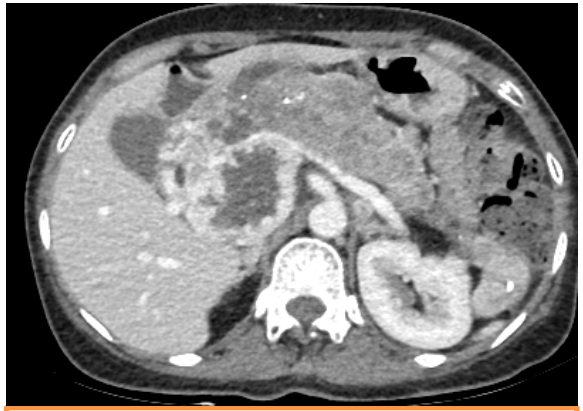


Pancreatic neuroendocrine tumor (NET)

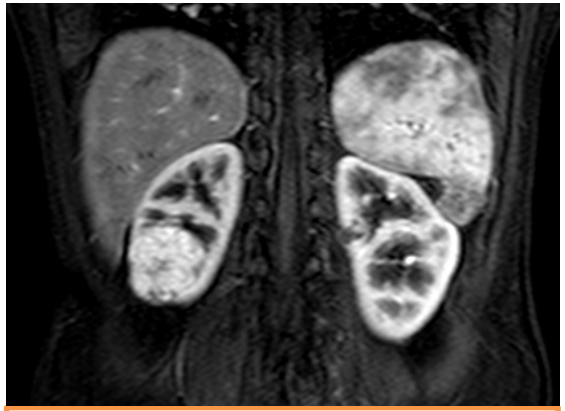
Pancreatic neuroendocrine tumor (grade 2) in von Hippel–Lindau Disease



MR T2 fat suppression



CT arterial phase



MR arterial phase

US findings of von Hippel–Lindau Disease

- Renal and pancreatic cysts: Well-defined and anechoic
- Serous cystadenoma of pancreas
  - · Tumor with tiny cysts: Hyperechoic mass but with through transmission
- Pancreatic islet cell tumor (neuroendocrine tumor): Hypoechoic mass
- RCC: Hyperechoic, isoechoic, or hypoechoic
- Pheochromocytoma
  - · Iso-/hypoechoic (77%), hyperechoic (23%)

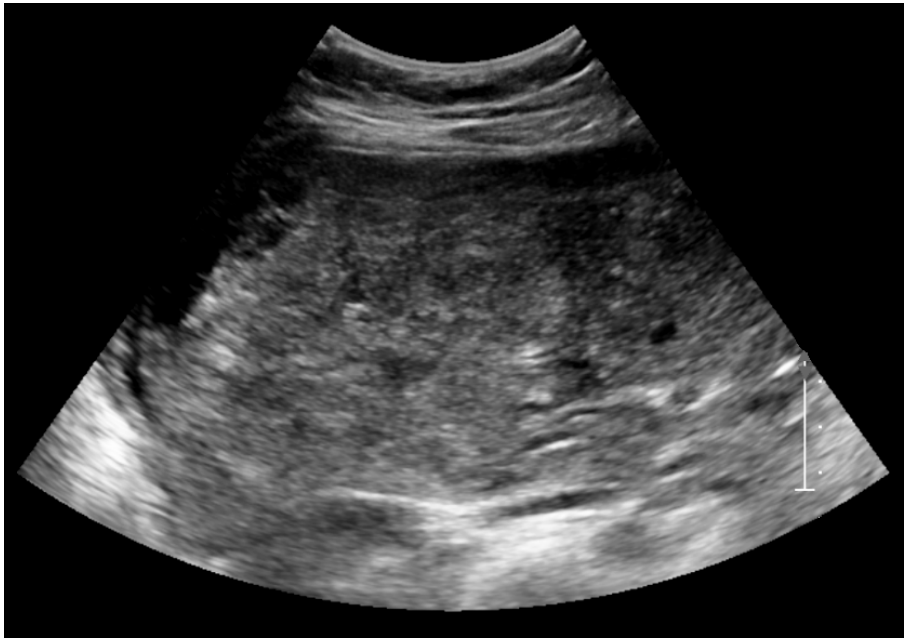
Case 4

30/F, IUP 18 weeks

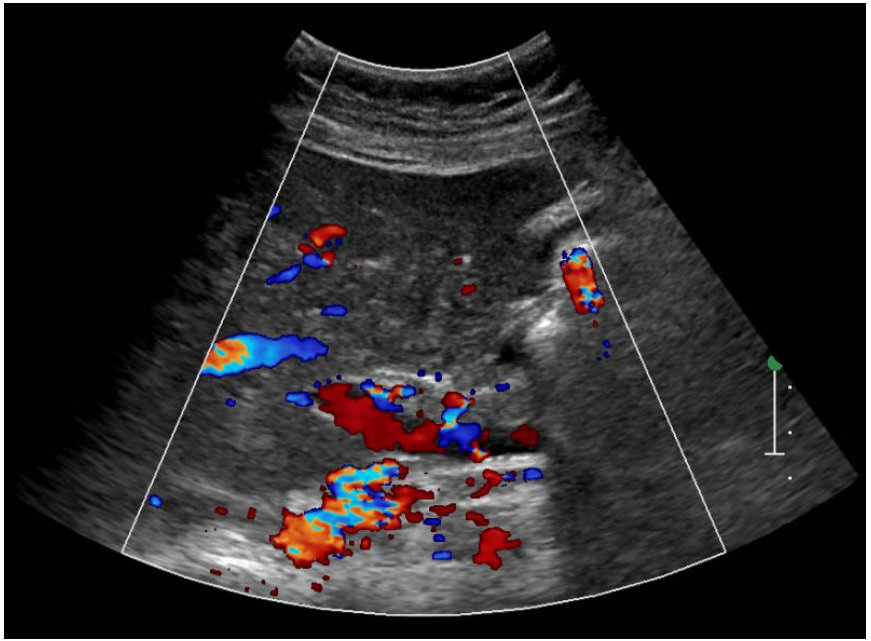
C.C.: RUQ abdominal pain
Duration: 5 hours

Question: Diagnosis?

Case 4

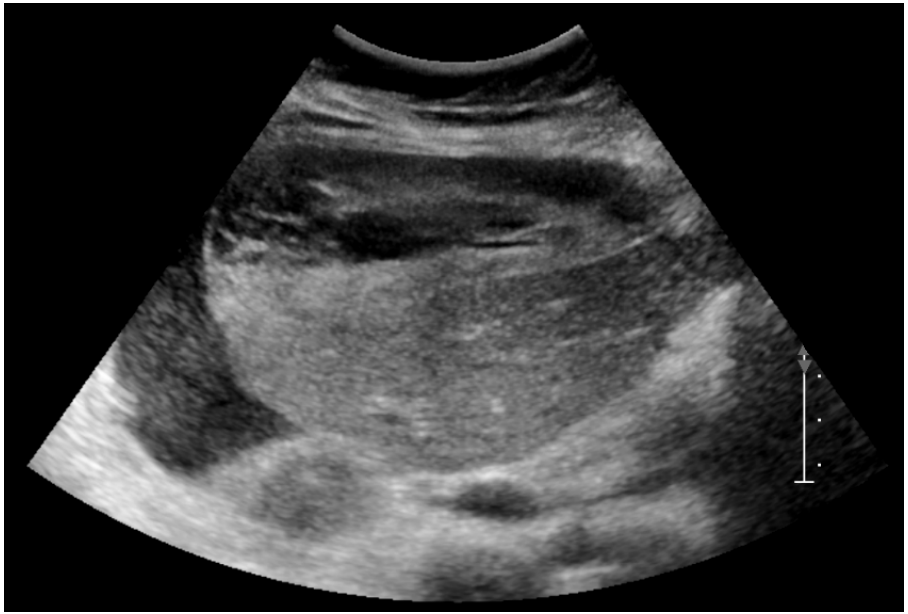


Right liver

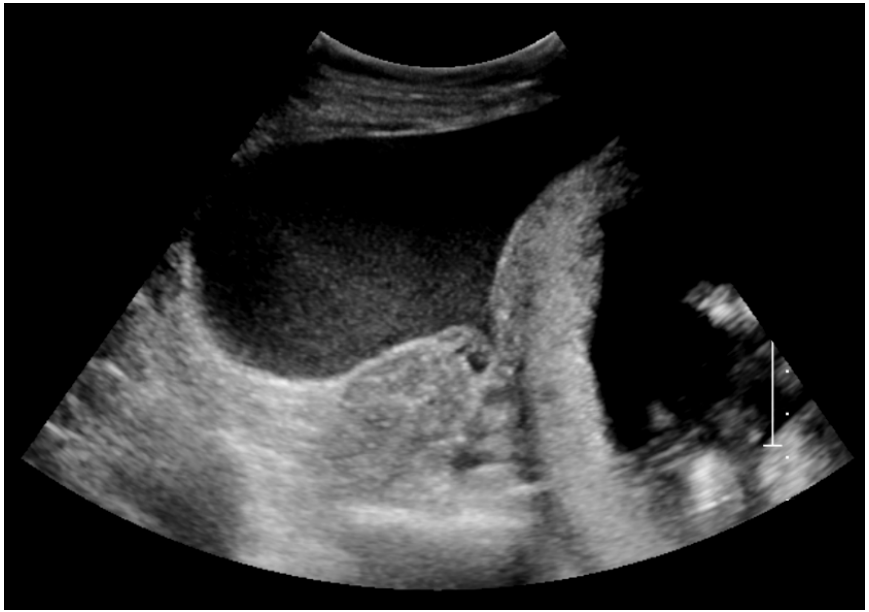


Portal vein Doppler

Case 4

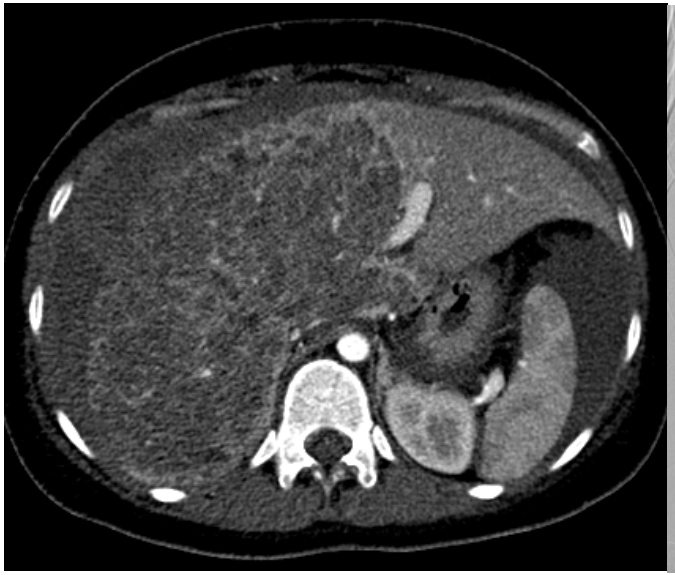


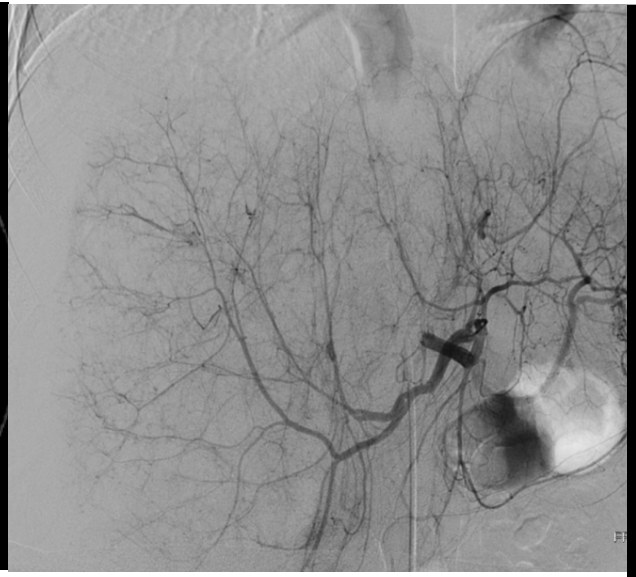
Right inferior liver



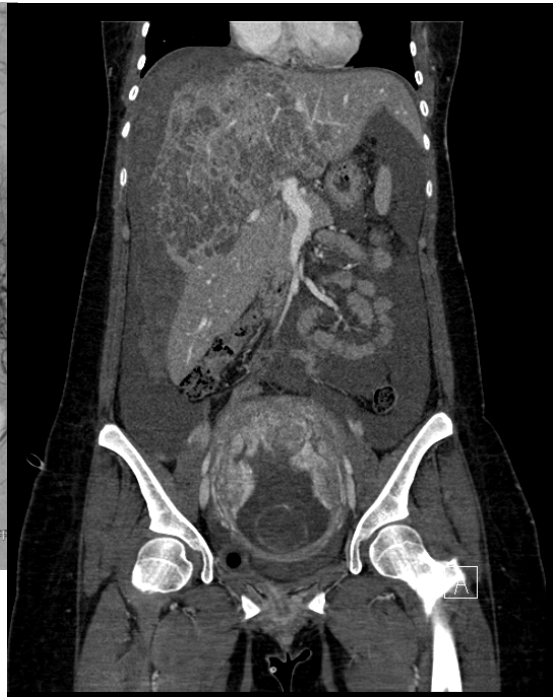
Right Paracolic Gutter

Case 4

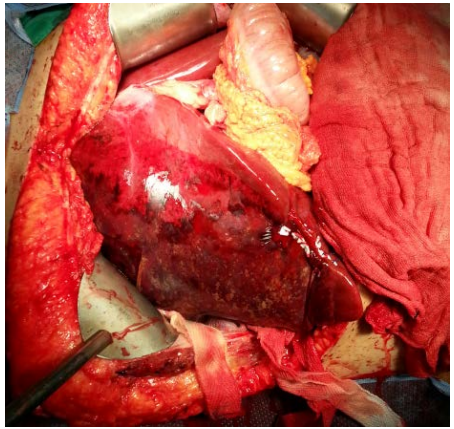


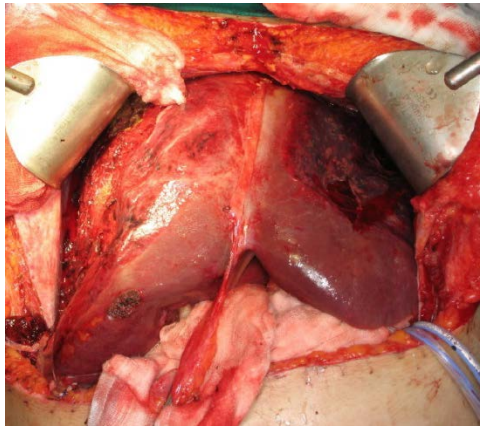


Celiac Angiography



HELLP Syndrome





❖ Liver Biopsy

- Mainly hemorrhage and a small piece of liver tissue showing fibrinoid necrosis
- Recent hemorrhage in subcapsular spaces, portal tract and sinusoidal spaces

There is no consensus regarding the laboratory criteria diagnostic of HELLP syndrome. A common alternative (Mississippi classification) used to define HELLP syndrome is [20,21]:

- Hemolysis documented by an increased LDH level and progressive anemia
- Hepatic dysfunction documented by an LDH level >600 IU/L, elevated liver enzymes documented by AST >40 IU/L, AST>40 IU/L, or both
- Thrombocytopenia documented by a platelet nadir less than 150,000 cells/mm³. Thrombocytopenia is subclassified as class one HELLP syndrome: platelet nadir ≤50,000 cells/mm³, class two HELLP syndrome: platelet nadir ≤100,000 cells/mm³, or class three HELLP syndrome: platelet nadir ≤150,000 cells/mm³.

IUP	18+2 wks
AST	529 → 3179
ALT	709 → 1881
Hb	9.0 → 5.9
LDH	908
PLT	40,000
Proteinuria	3+

Hemolysis

Elevated Liver Enzyme

Low PLT

HELLP syndrome

Obstet Gynecol. 2007 Aug;110(2 Pt 2):525-7.

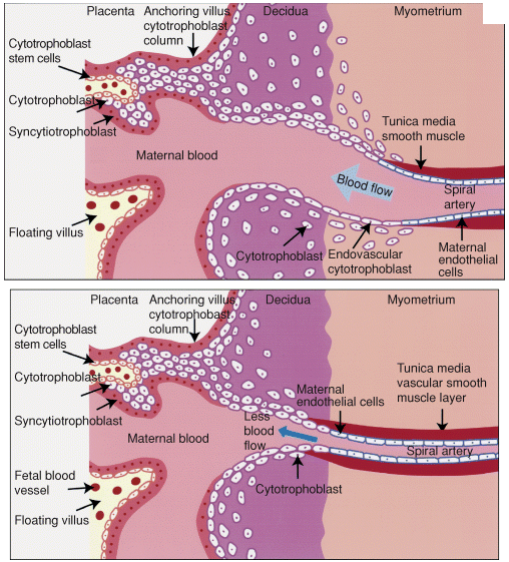
HELLP syndrome: a rare, early presentation at 17 weeks of gestation.

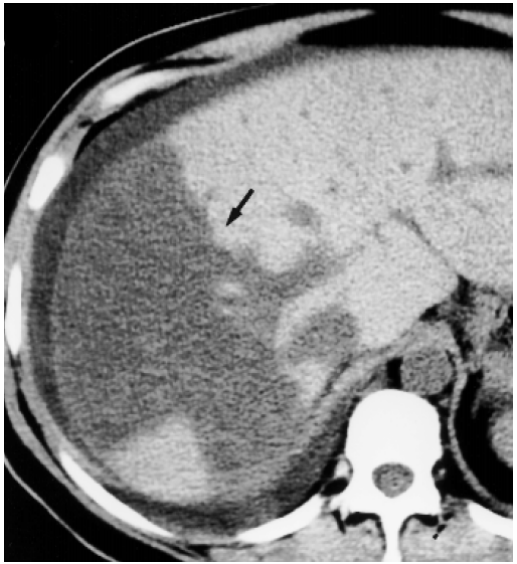
Bornstein E, Barnhard Y, Atkin R, Divon MY.

Department of Obstetrics and Gynecology, Lenox-Hill Hospital, New York, NY 10021, USA. eranbor@yahoo.com

❖ Variant of Preeclampsia

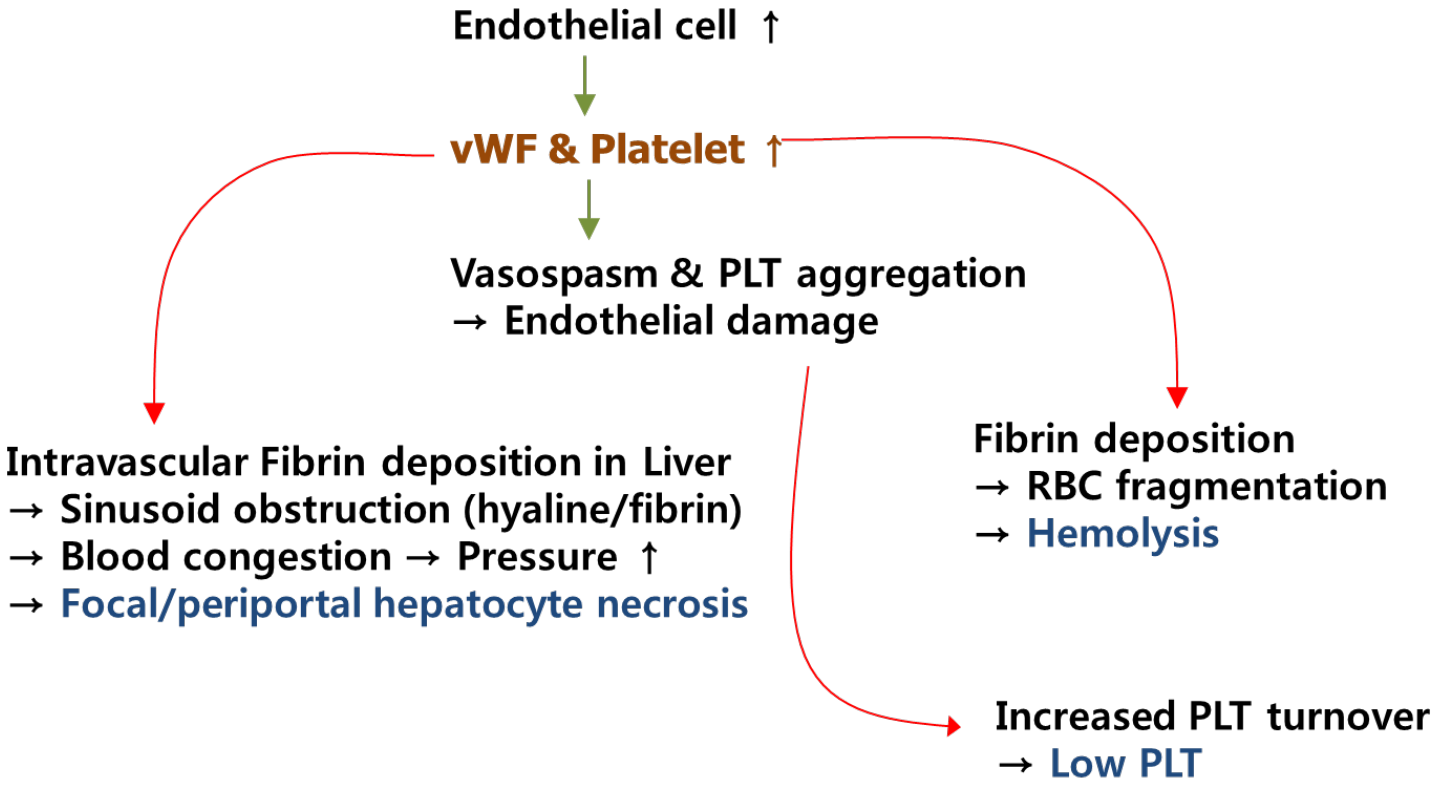
❖ Rejection of Fetus in Late Trimester





- **Remodeling ↓ of maternal vascularization**
- **Placenta ischemia**
- **Pregnancy, early**

- **Acute rejection of Fetal Allograft**
- **Pregnancy, late**



J Obstet Gynecol 2013,331-337
Emerg Radiol,2007,299-306
Radiographics,2000,367-378

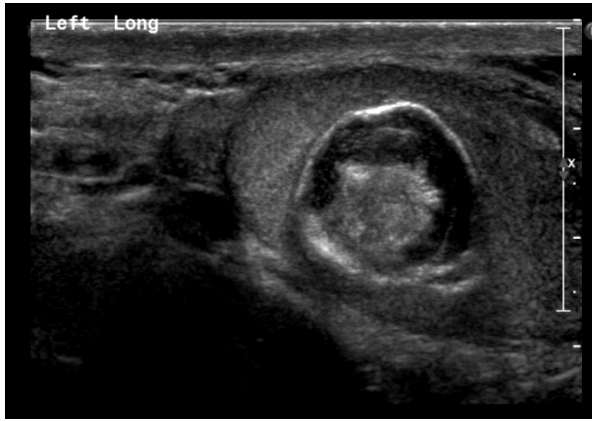
Case 5

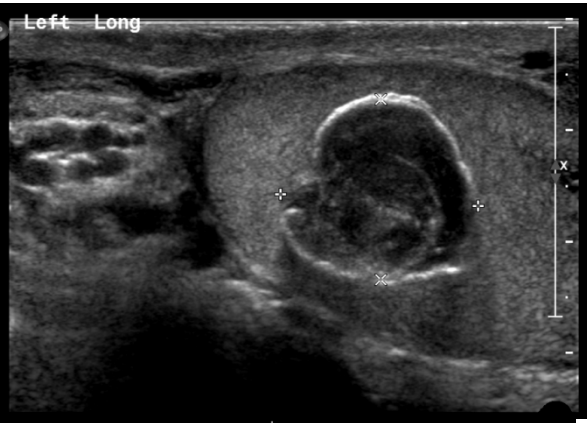
24/M

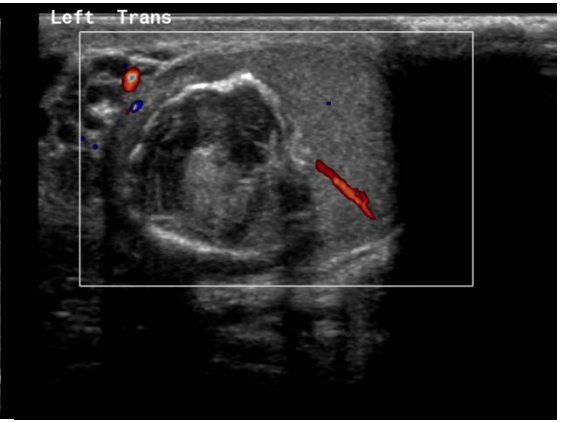
C.C.: Scrotal mass

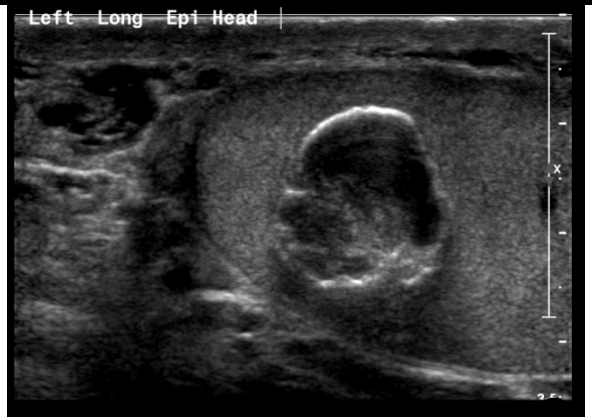
Question: Diagnosis?

Case 5



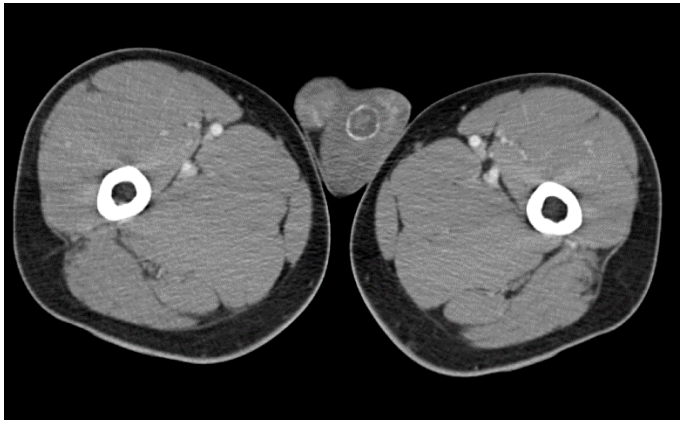


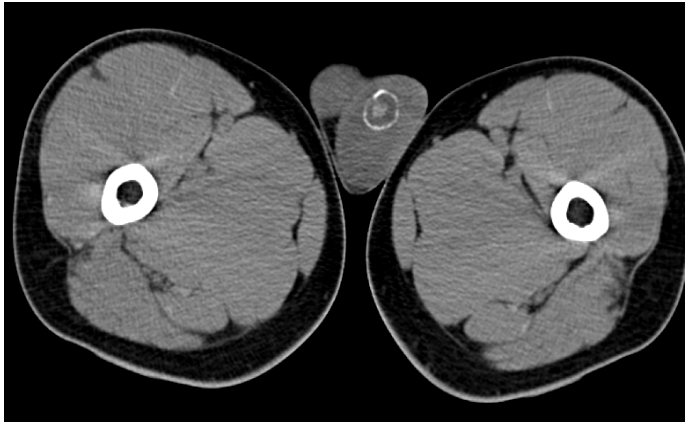




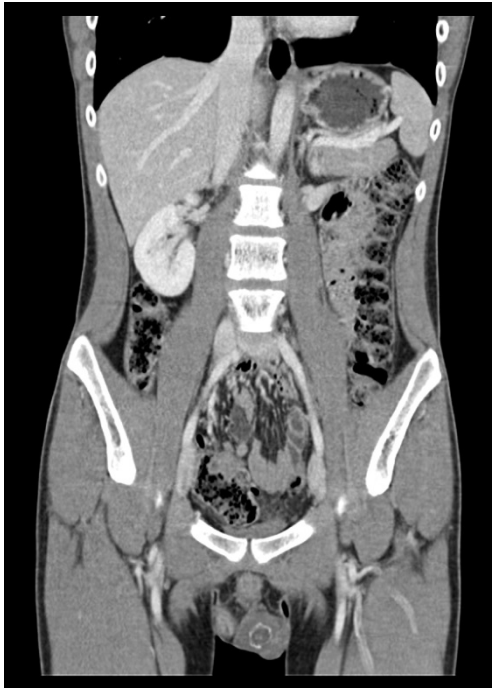
Onion-ring appearance

Case 5

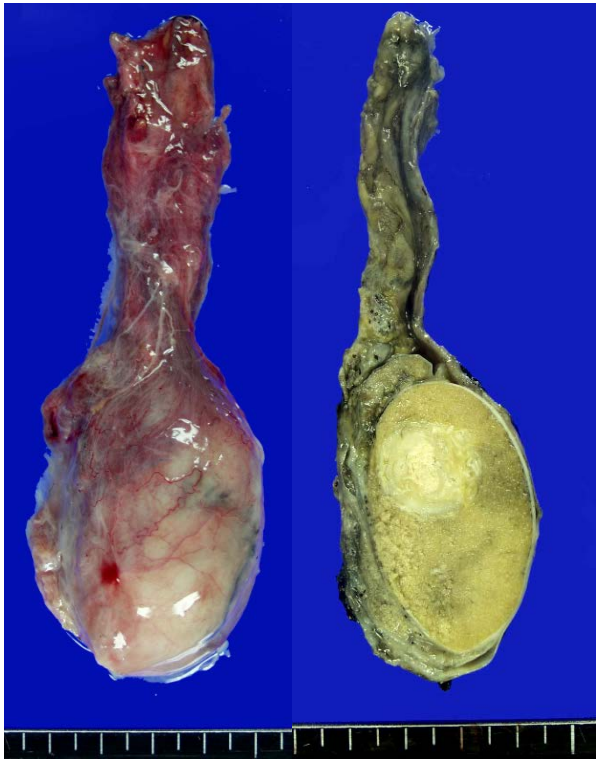




No enlarged paraaortic LN



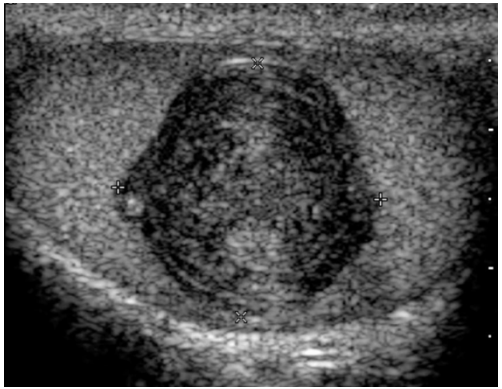
Epidermoid Cyst



A cyst (1.8x1.6cm) containing friable, yellow-white keratinous materials.

- A rare benign intratesticular tumor
  : Controversial histologic origin (germ cell origin ??)

- US finding
  - A well-circumscribed intra-testicular lesion
  - Bull's-eye or Target appearance : hypo-echogenic ring surrounding an echogenic center (keratin debris)
  - Or Onion-ring appearance : hypo- and hyper-echogenic rings (squamous cell-lined capsule) *Radiographics 2004,S243-246*



Take home message

- Unique Onion-ring appearance
  → Benign Testicular Epidermoid cyst

Case 6

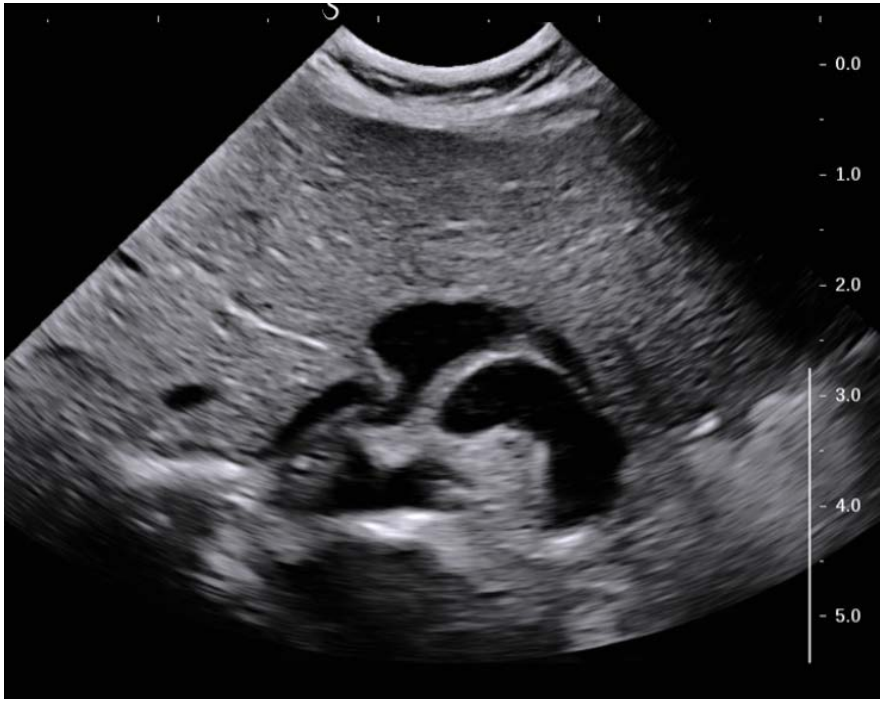
New born male

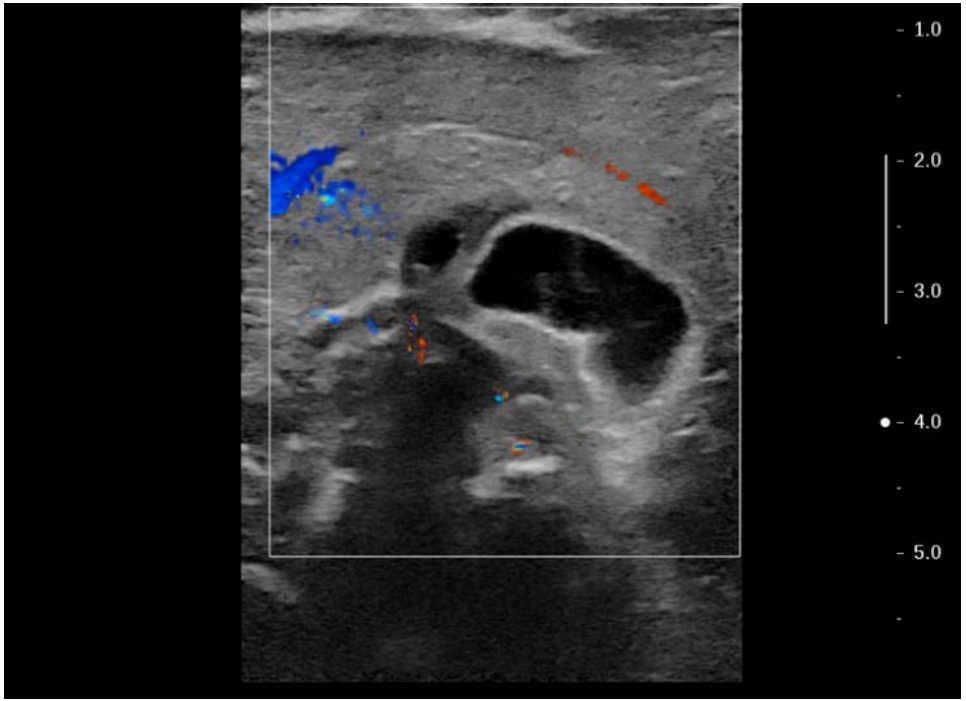
C.C. Prenatally detected lesion

History: IUP 38 weeks, 2910 g, C-sec delivery

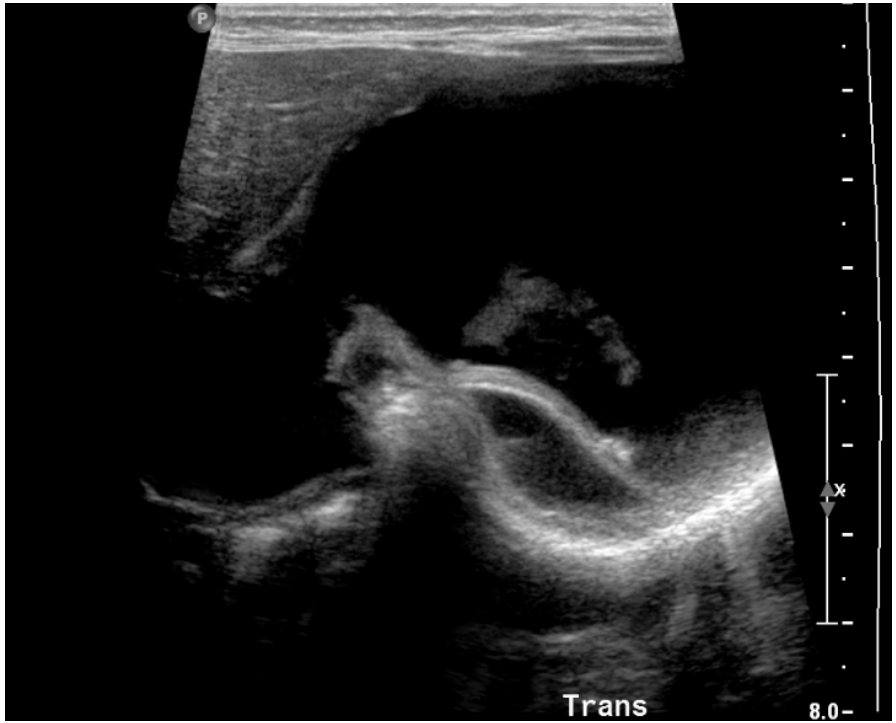
Question: Diagnosis?

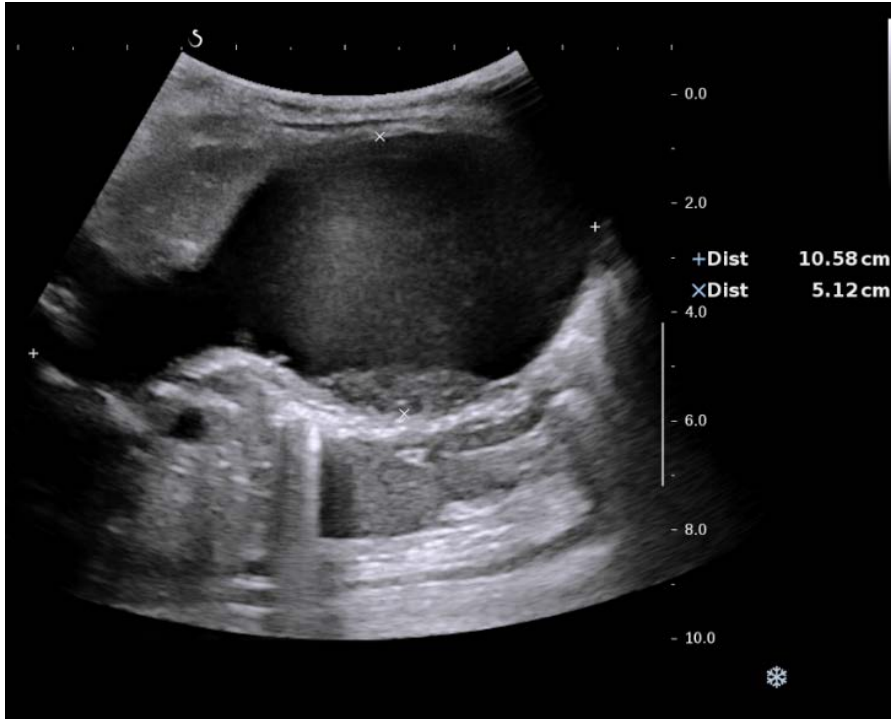
Case 6



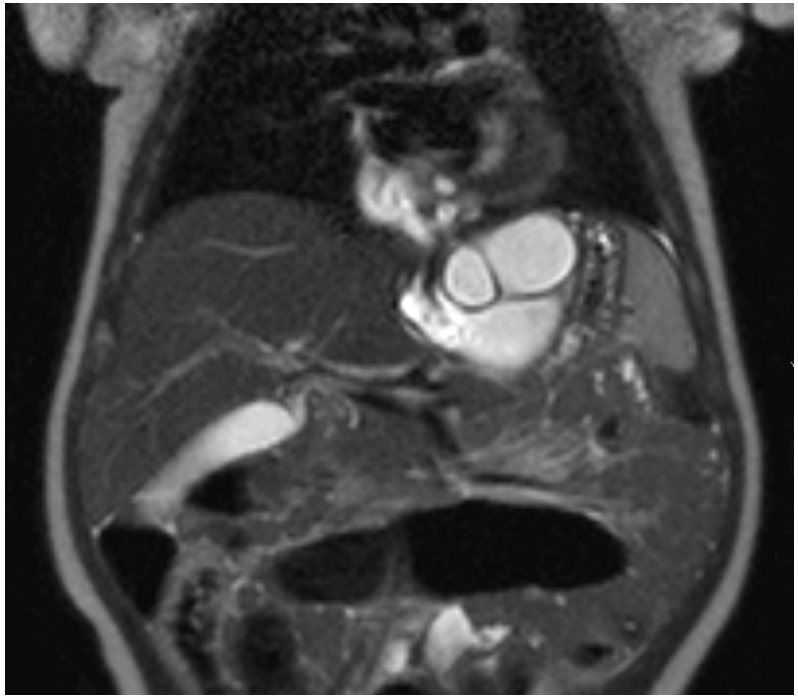


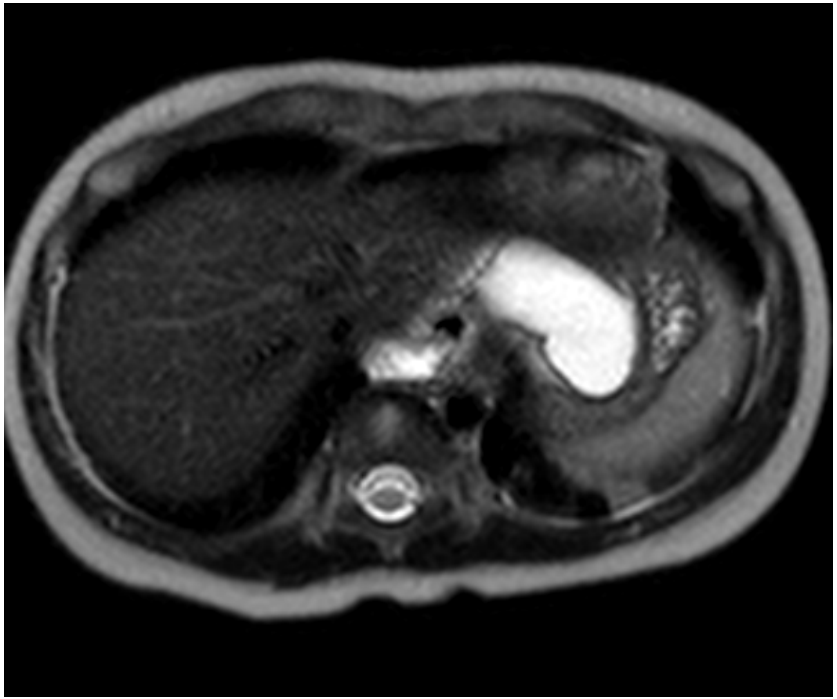
Case 6





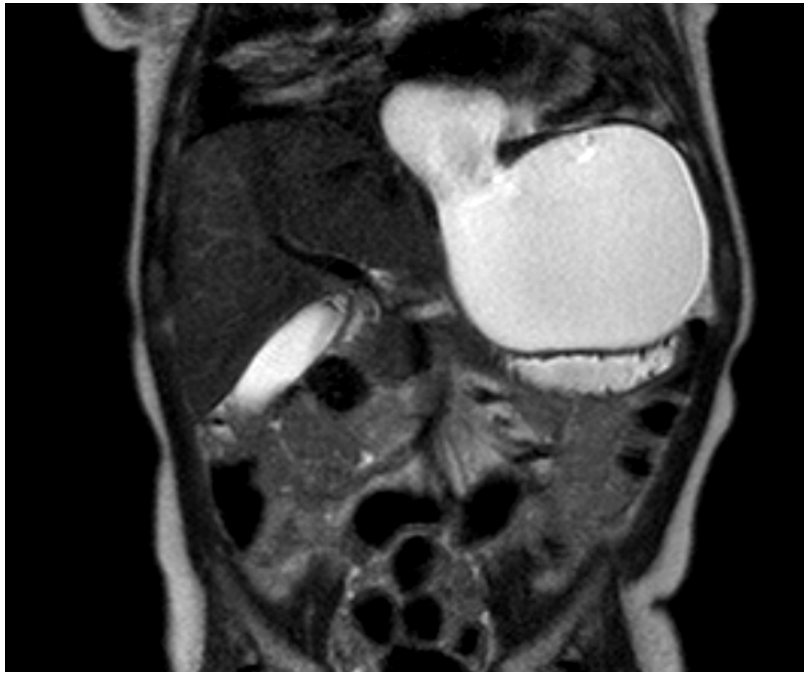
Case 6

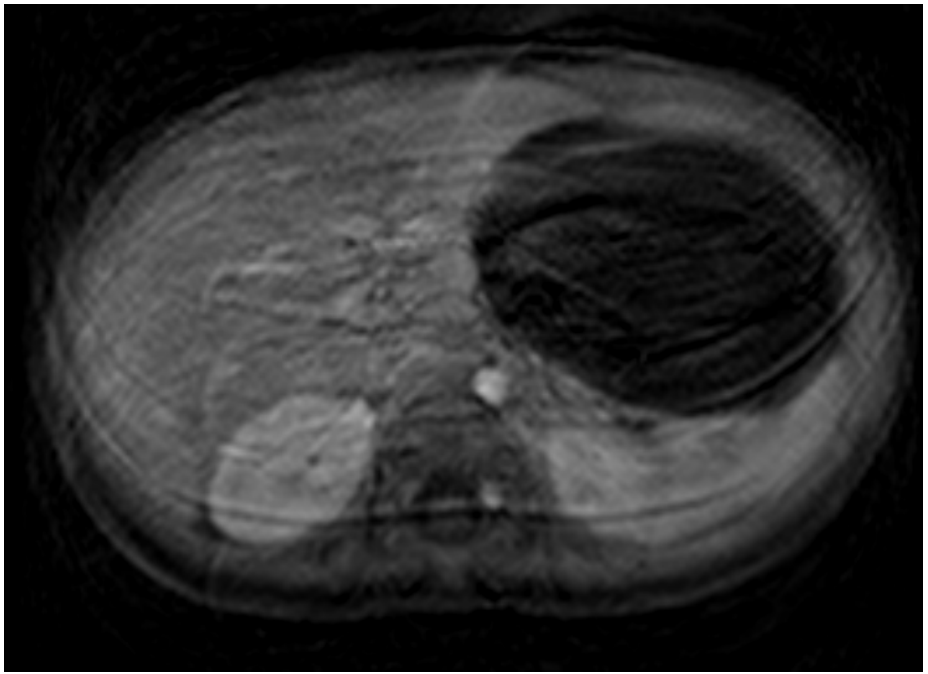




3 mo

Case 6





5 mo

Mature cystic teratoma

- Teratoma: the most common histologic subtype of childhood germ cell tumors
- Extragonadal germ cell tumors: arising from aberrant migration or deposition of germ cells along the path of migration
  - Concurrent mediastinal and abdominal mature teratoma across diaphragmatic defect is rare
  - Isolated posterior or middle mediastinal location is uncommon (2-8%), 13-15% have extension to other compartments
- Imaging feature
  - Well-demarcated heterogeneous mass containing a variable admixture of fat, fluid, soft tissue, and calcification, displacing rather than invading adjacent structures
  - Usually cystic: 90%
  - May be uni- or multiloculated
  - septal/rim contrast enhancement

RadioGraphics 2002; 22:S79–S93
J Pediatr Surg 1993 Sep;28(9):1161-4
J Thorac Imaging 2003 Jan;18(1):53-5

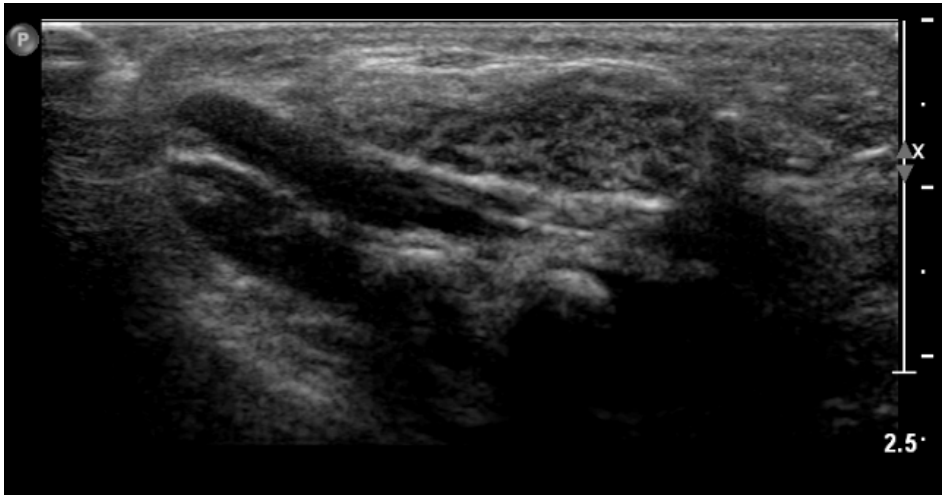
Case 7

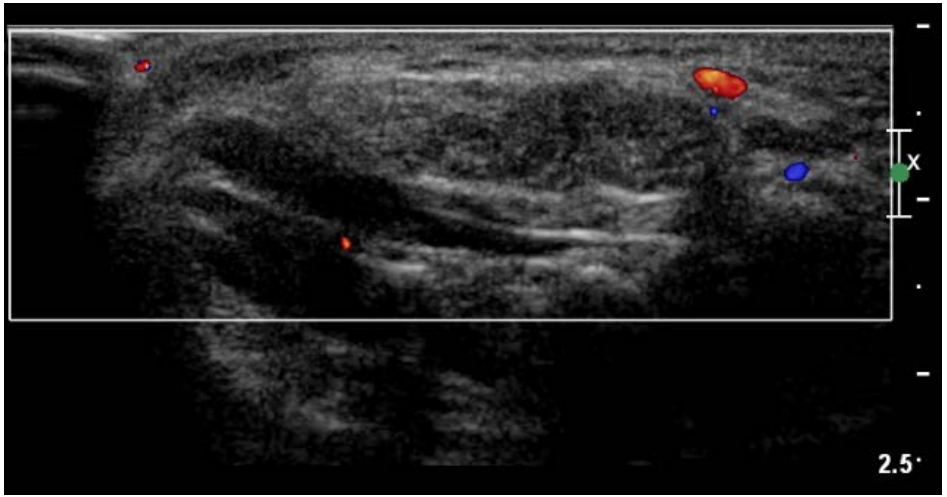
5/F

C.C.: Palpable lesion in the right palm

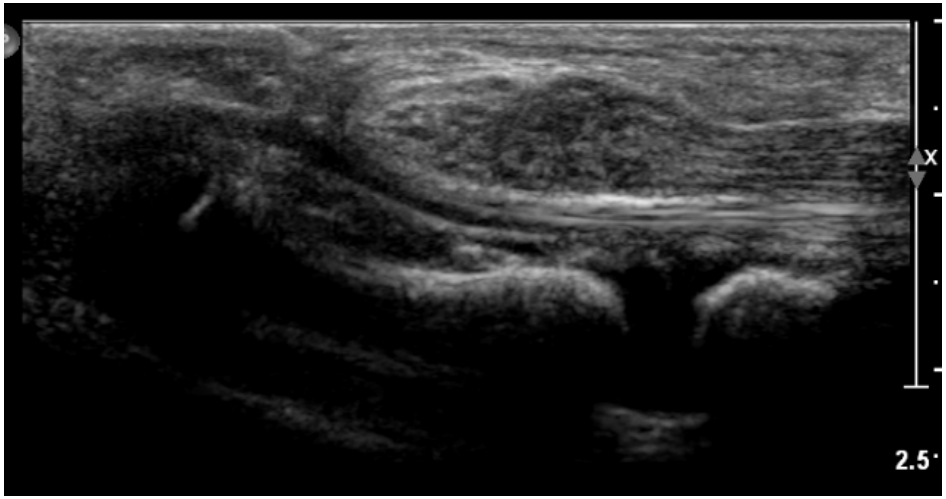
Question: Diagnosis?

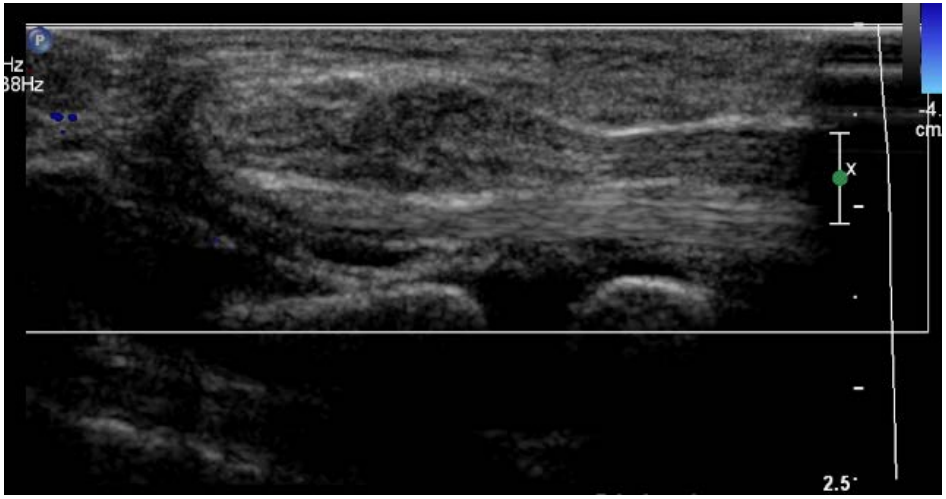
Case 7



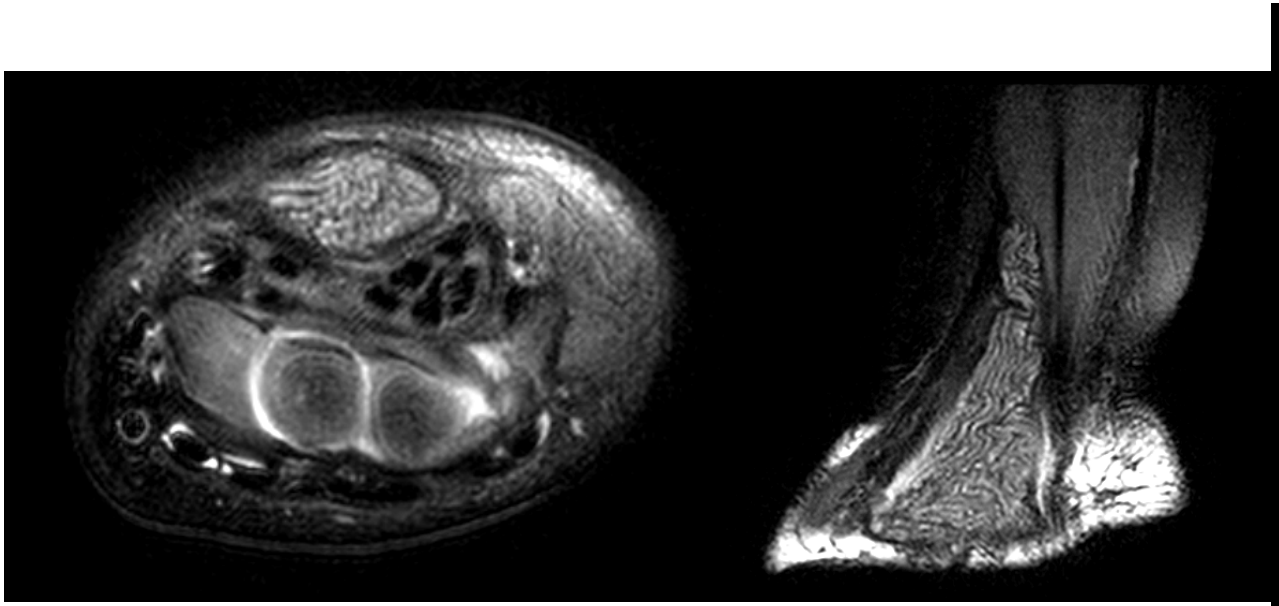


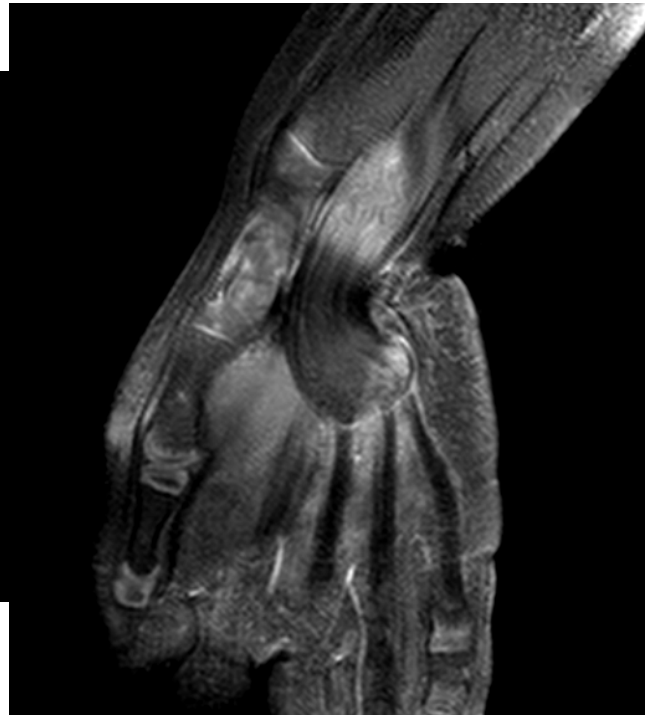
Case 7





Case 7





Fibrolipomatous hamartoma

- Fibrolipomatous hamartomas
  - Usually affect infants and less commonly children and young adults.
  - Also known as neural fibrolipoma, lipofibromatous hamartoma, perineural lipoma and intraneural lipoma
- Median nerve is overwhelmingly the most commonly affected nerve (80% of cases)
  - Followed by ulnar, radial nerves, dorsum of the foot and brachial plexus
- Presentation.
  - Soft slowly enlarging often, asymptomatic mass on the volar wrist or forearm.
  - Occasionally nerve compression will lead to symptoms of pain, paresthesia or carpal tunnel syndrome
  - Association with macrodystrophia lipomatosa(20-66% of cases) Radiol Case Rep. 2008; 3(3): 195.

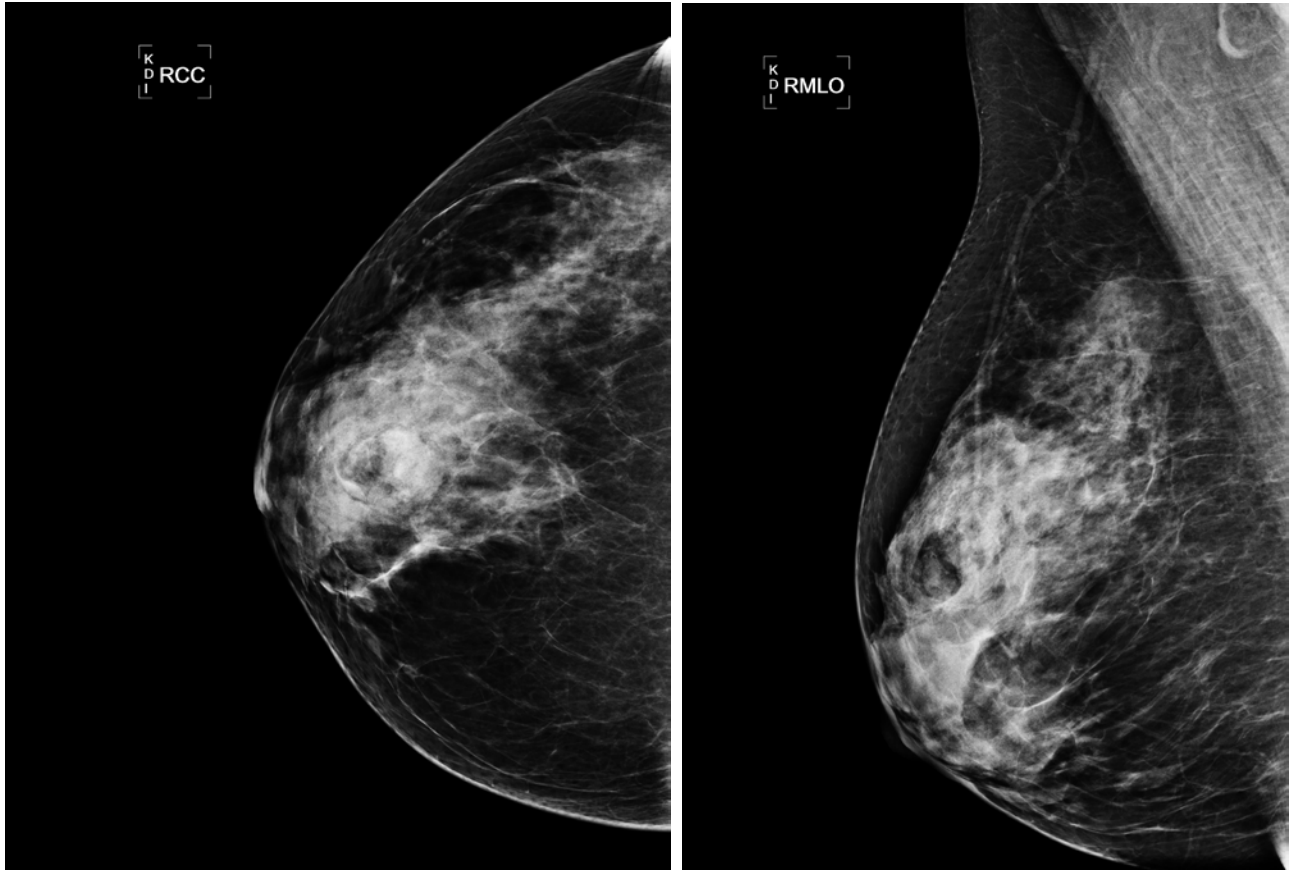
Case 8

55/F

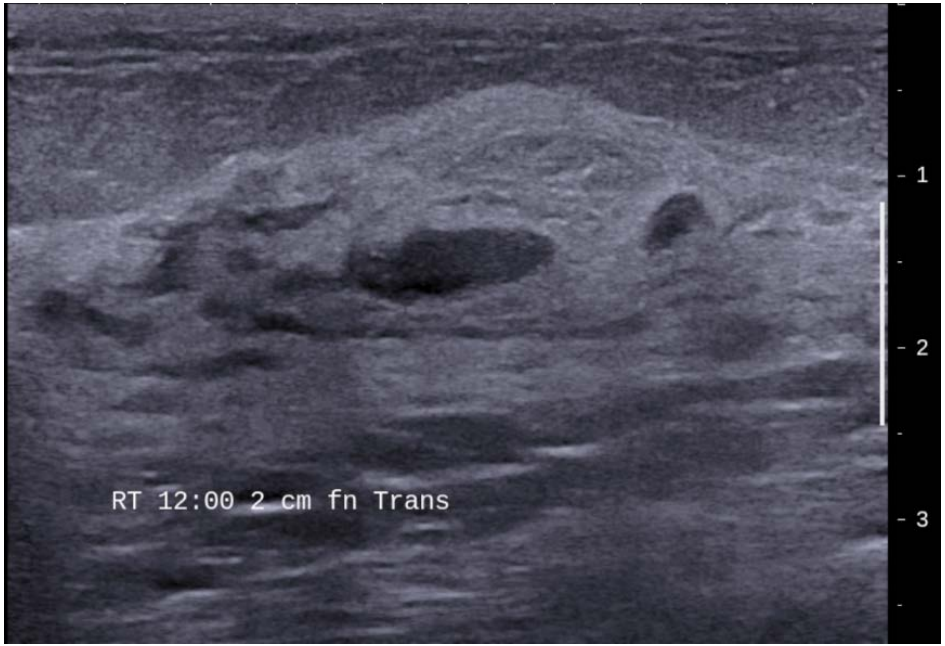
C.C.: Palpable mass in the right breast

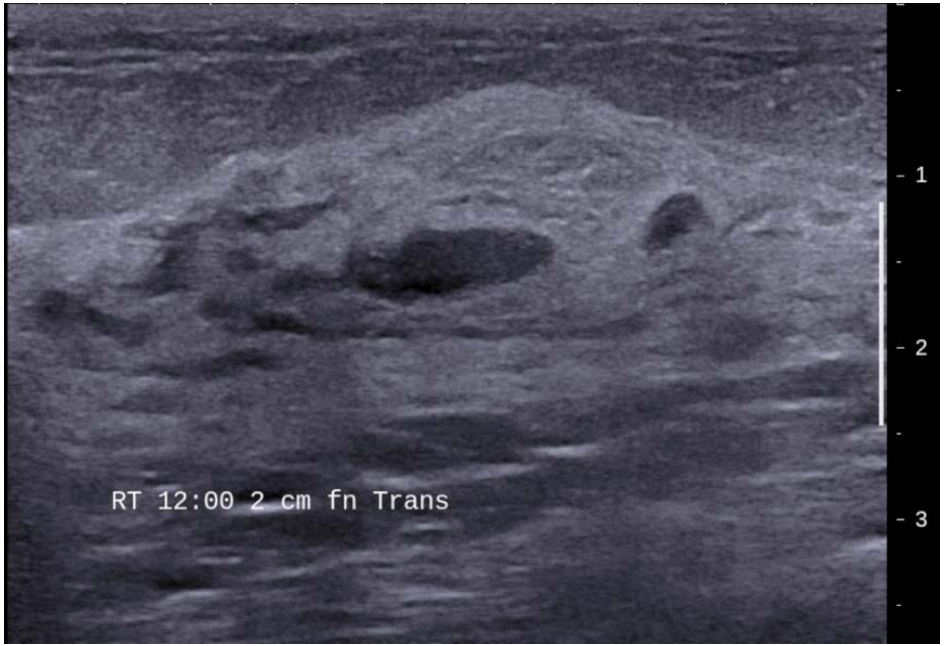
Question: Diagnosis?

Case 8



Case 8





Hamartoma

- Benign proliferation of fibrous, glandular, and fatty tissue
- All components are found in normal breast tissue
- Presents as a painless soft lump
- Typically occur in women older than 35 years of age
- Mammography : typically seen as a well-circumscribed, round to oval inhomogeneous mass surrounded by thin capsule –” breast within a breast” appearance
- Ultrasound : seen as a well-circumscribed, solid lesion

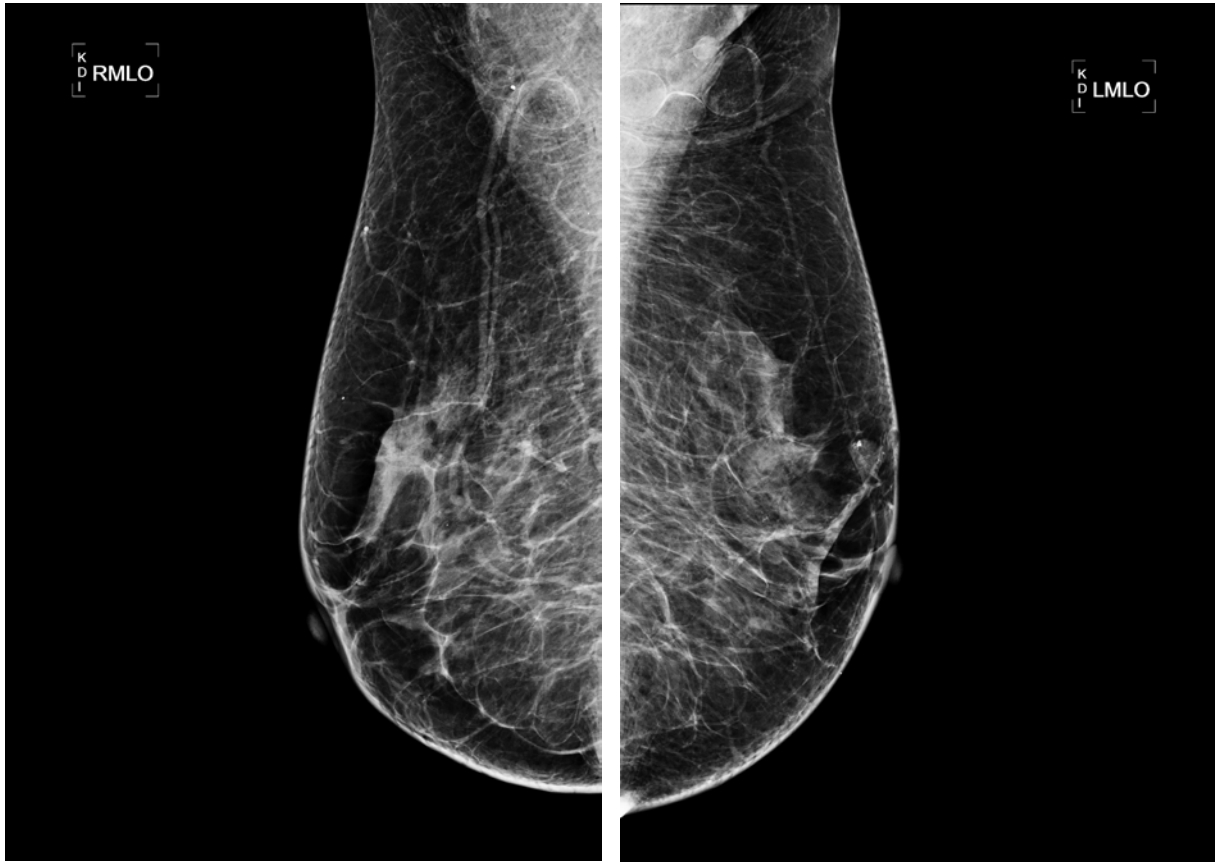
Case 9

57/F

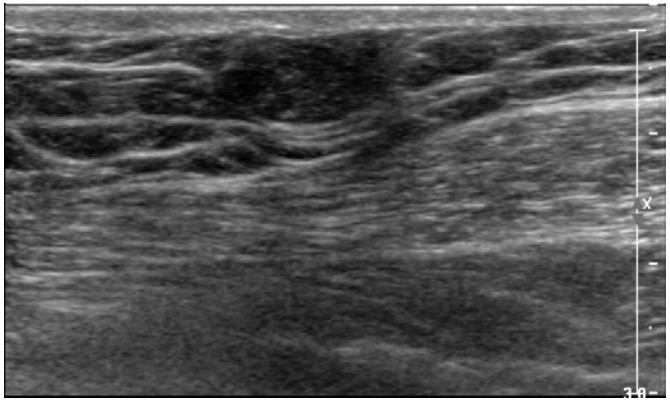
C.C.: Multiple palpable skin nodules in both breast and axilla

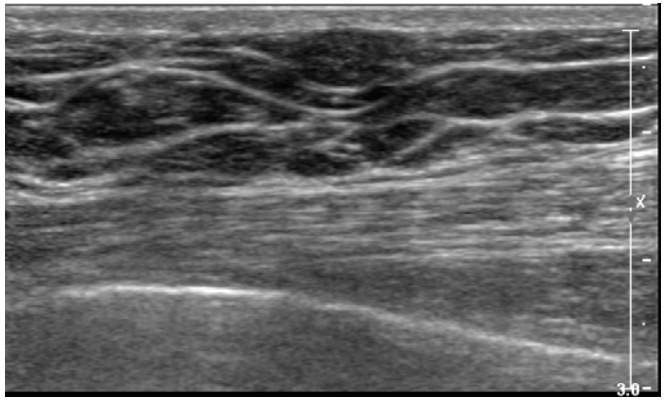
Question: Diagnosis?

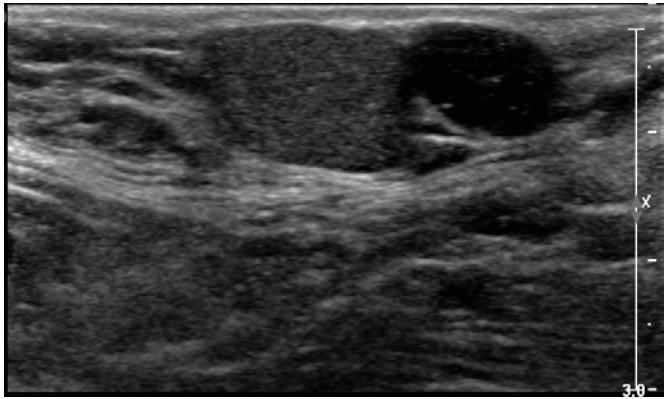
Case 9

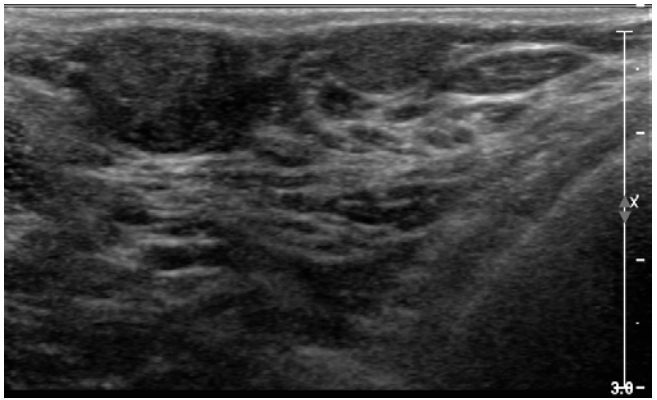


Case 9









Steatocystoma Multiplex

- Sporadic or autosomal dominant benign sebaceous gland tumor
- In the familial form, mutations are localized to the keratin 17 (K17) gene
- Consist of a nevoid formation of abortive hair follicle at the site where sebaceous glands attach
- Cysts manifest during adolescence and early adulthood

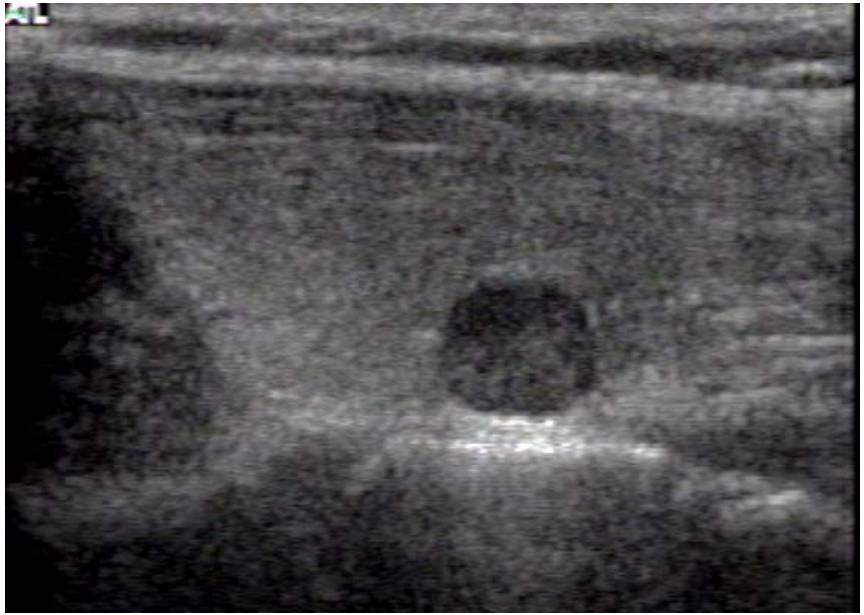
Case 10

55/F

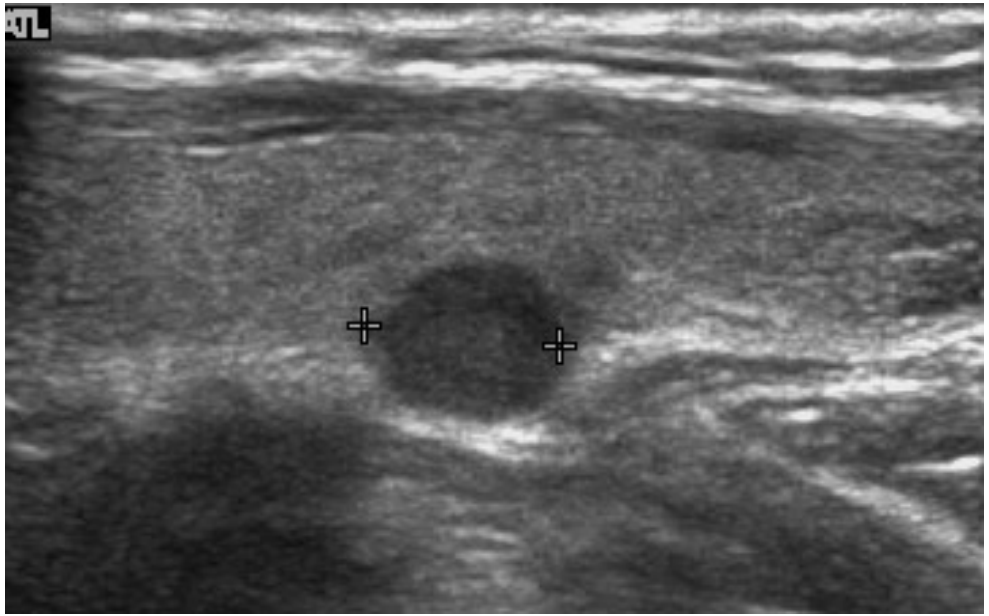
C.C.: Recently increased size of thyroid nodule
PHx.: Thyroid nodule followed up for 12 years since first diagnosed as category II (benign)

Question: Diagnosis?

Case 10

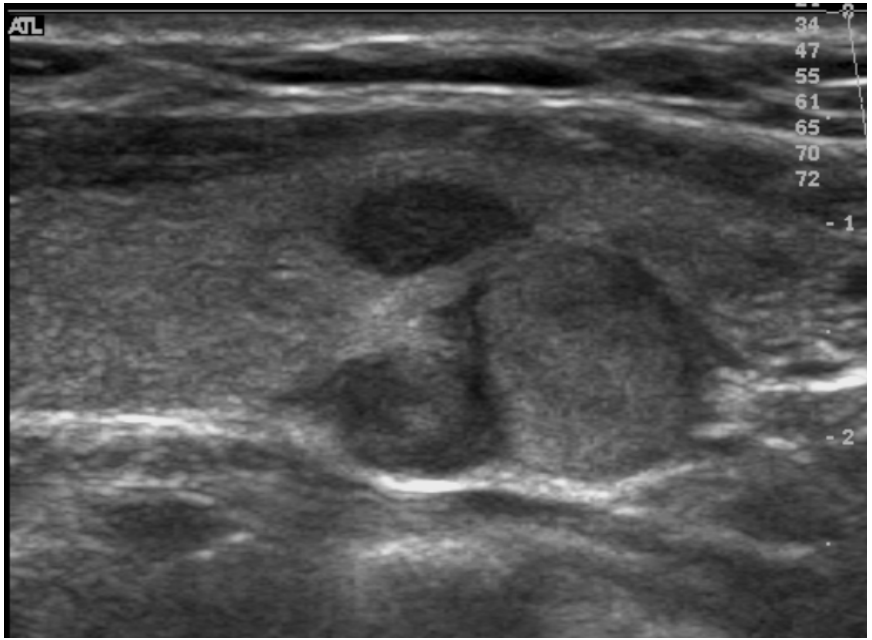


A. 2005 0.7 cm

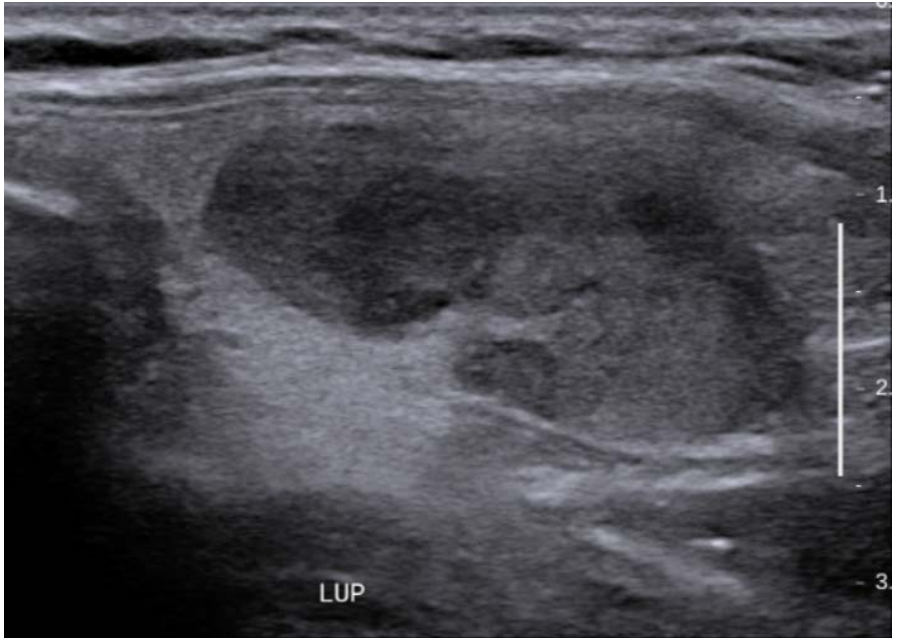


B. 2007 0.8 cm

Case 10

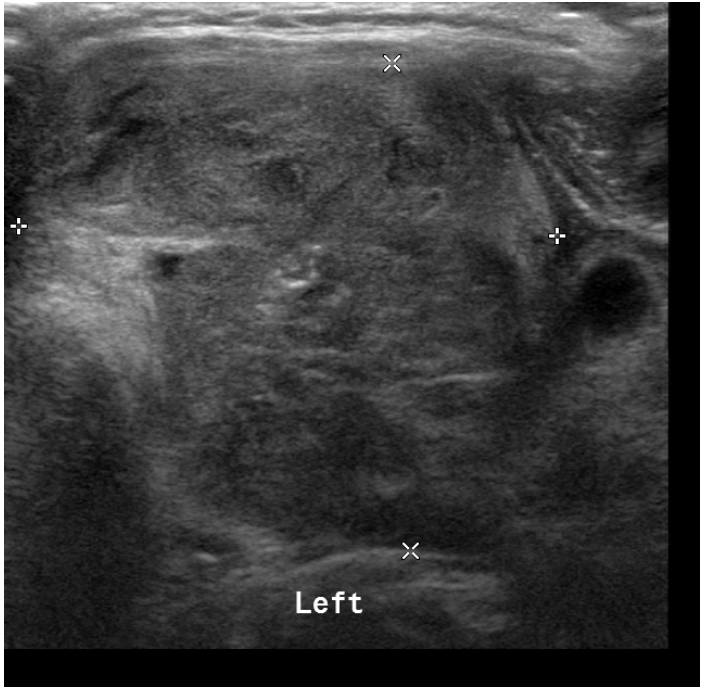


C. 2011 1.6 cm

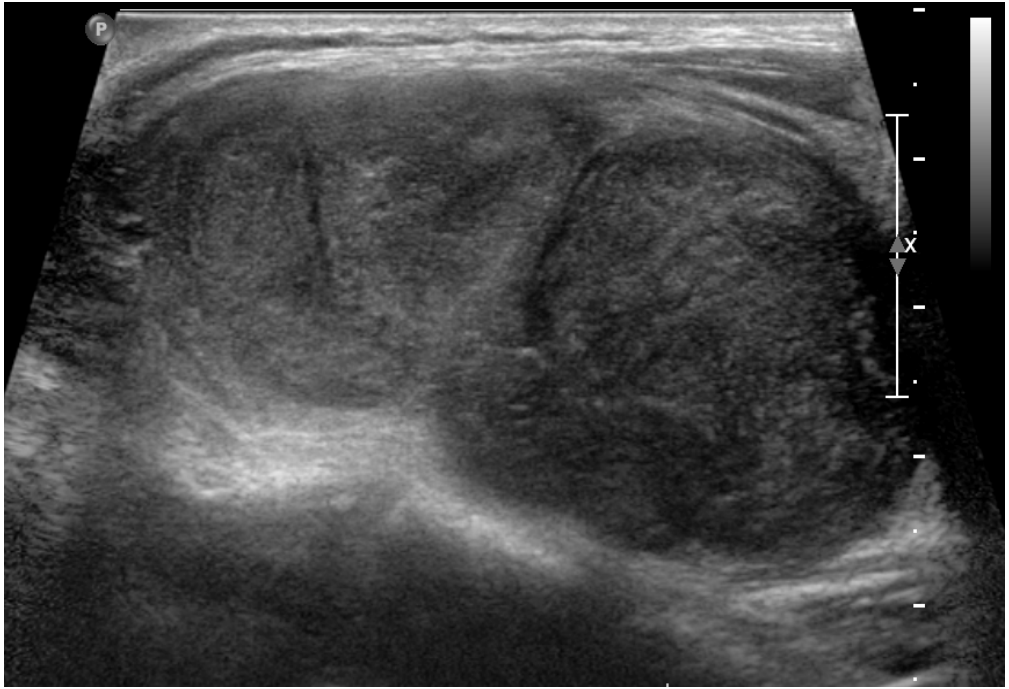


D. 2012 3.2 cm

Case 10



E. 2014 Transverse



F. 2014 longitudinal 5.6 cm

Anaplastic thyroid carcinoma

- 1-3% of thyroid cancer
- 14-50% of annual mortality of thyroid cancer
- The most aggressive form of thyroid cancer with median survival of 3-5 months.
- systemic metastasis in 46-68% of the cases at the time of diagnosis
- US finding: large solid and ill defined, hypoechoic mass with necrosis, nodular calcification and cervical lymph node metastasis.
- Diagnostic yield at the initial FNAC is around 50%.
- Considered to be the result of progressive mutation accumulation

Reference) Seminars in diagnostic pathology 2013;30:178

Yonsei Med J 2013;54:1400

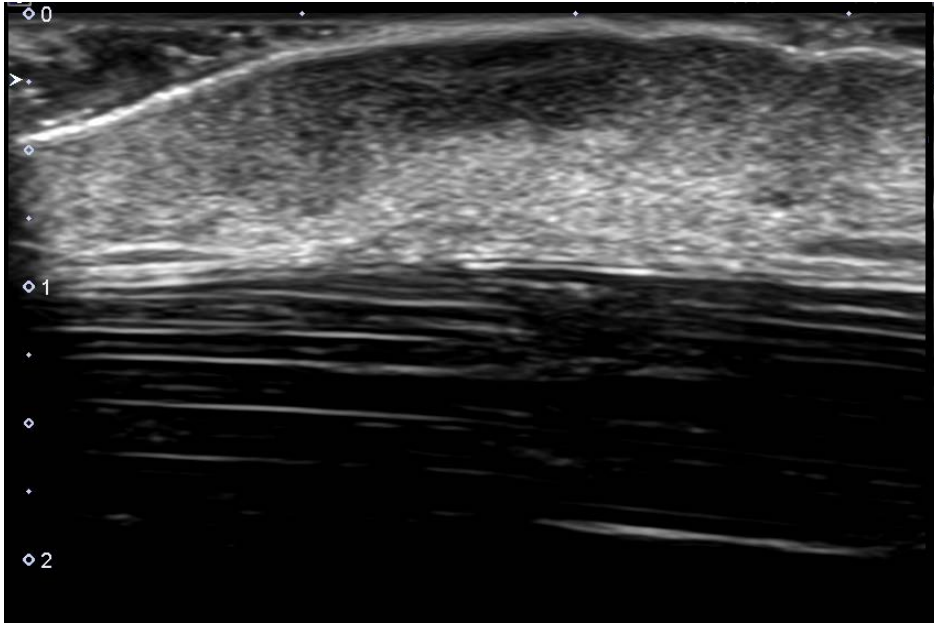
Case 11

M/53

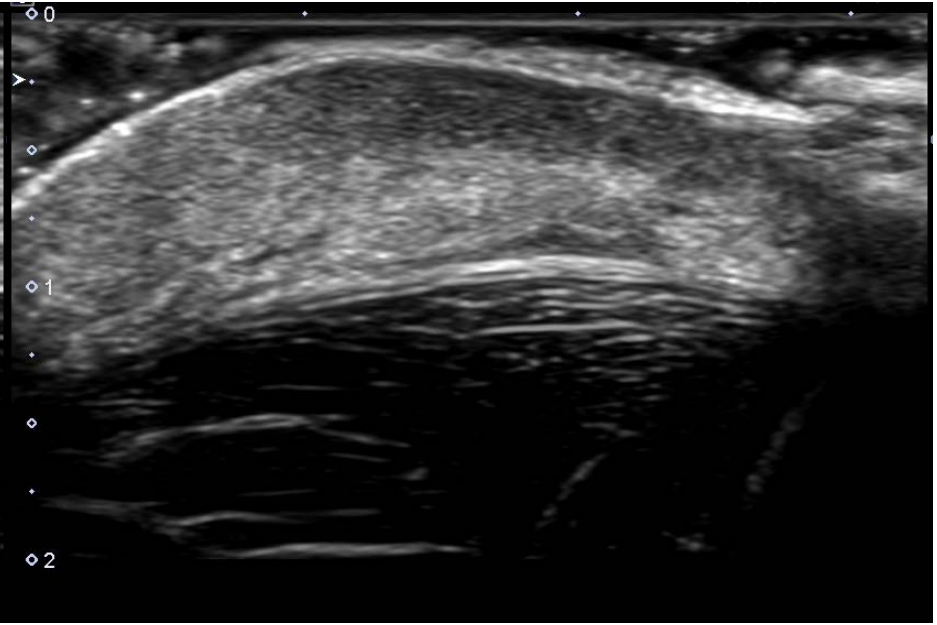
C.C.: Palpable mass on hand, foot and lower leg
Duration: 1 year

Question: Diagnosis?

Case 11



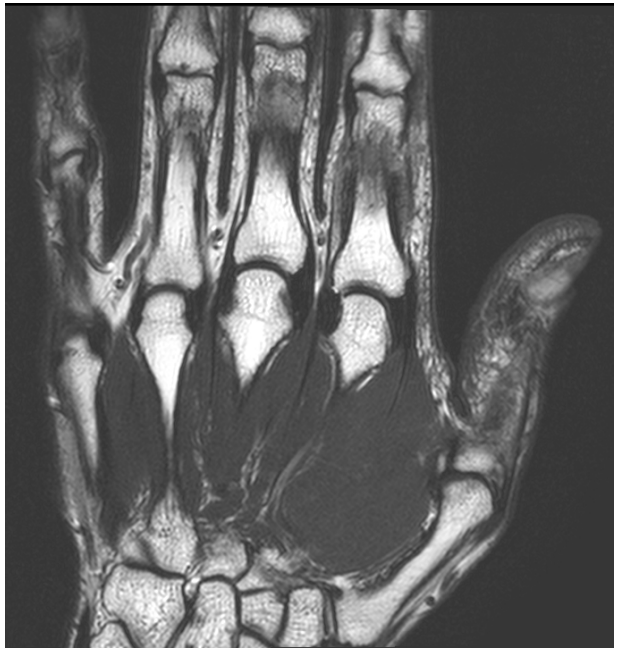
Longitudinal view



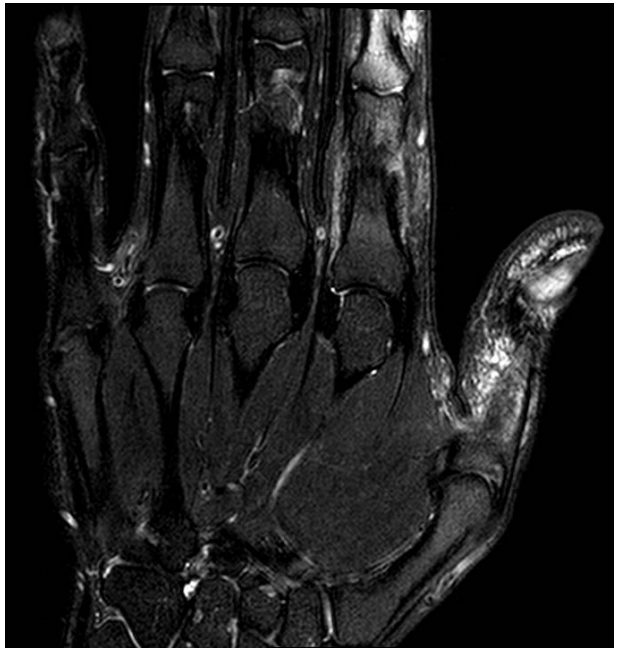
Transverse view

Pretibial soft tissue

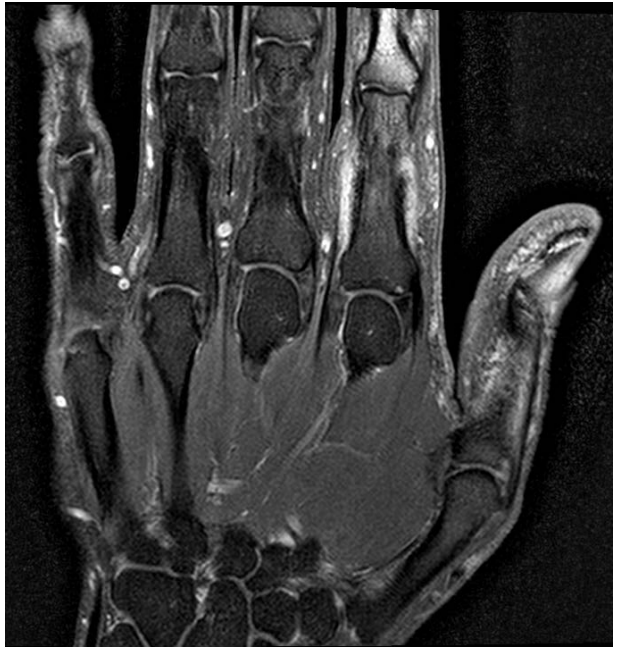
Case 11



T2



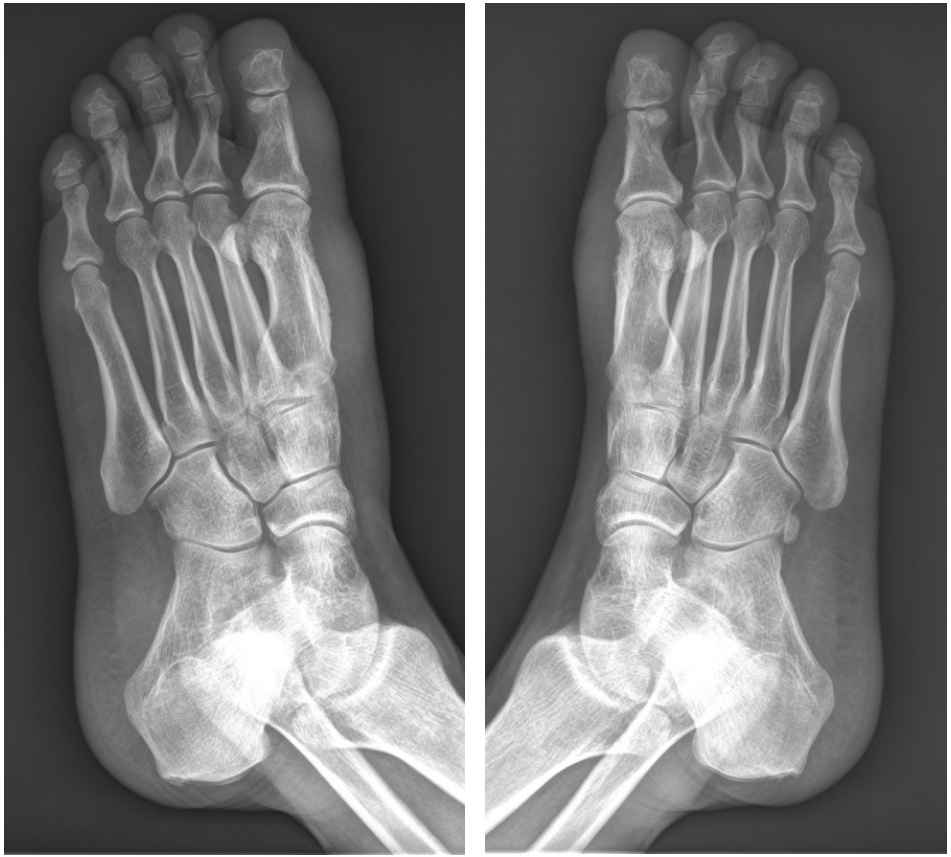
T2FS



T1CE

Right hand

Case 11



Thyroid acropachy

- Thyroid acropachy is an manifestation of autoimmune thyroid disease
  - Digital clubbing or swelling of digits and toes
  - Periosteal reaction of extremity bones
- Almost always associated with thyroid ophthalmopathy and dermopathy

- Imaging Findings
  - Prominent smooth flowing periosteal reaction affecting the hands & feet
  - Usually bilateral and symmetrical involving tubular bones of hands & feet
  - May also be evidence of soft tissue swelling
- DDx: Diffuse symmetric periostitis

1) Hypervitaminosis A
2) Pachydermoperiostosis
3) Hypertrophic pulmonary osteoarthropathy
4) Chronic venous insufficiency

Case 12

60/F

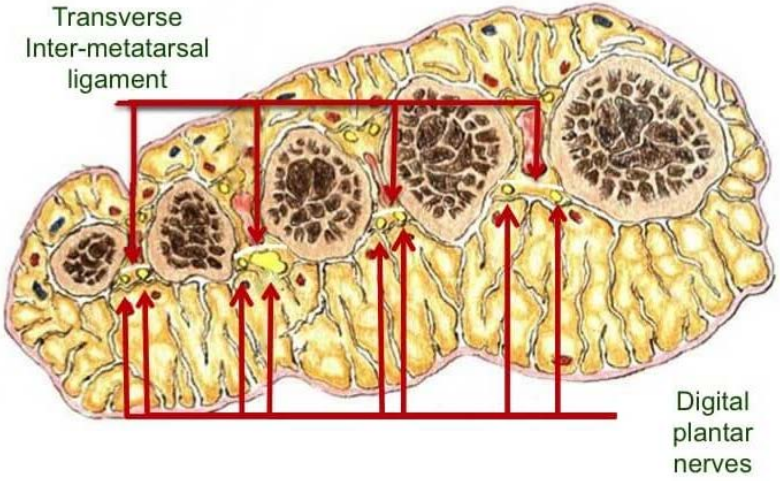
C.C.: Right foot pain
Duration: 2 years

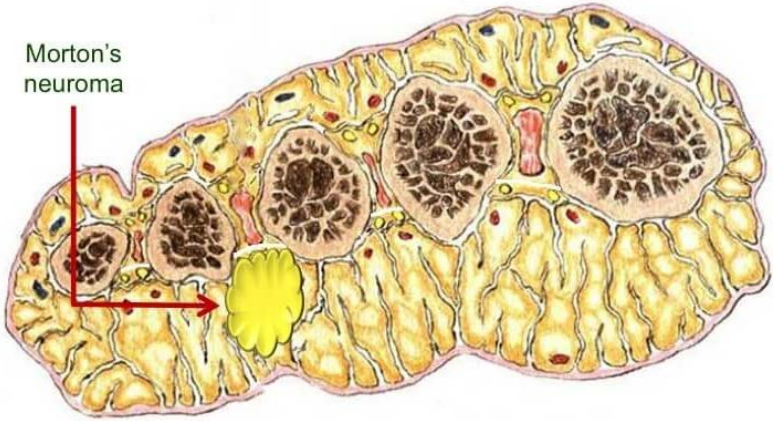
Question: Diagnosis?

US at the plantar aspect of foot while squeezing forefoot

Morton's neuroma

- Non-neoplastic enlargement with varied degrees of perineural fibrosis, local vascular proliferation, edema of the endoneurium, and axonal degeneration
- 3rd intermetatarsal space is most frequently involved.





https://www.mortonsneuroma.com/mortons-neuroma-science/

- Imaging Findings

- Round to ovoid
- US : well-defined hypoechoic lesion
- MRI : typically T1 & T2 low
- Tend to show intense enhancement

- Sonographic Mulder sign

- Lateral compression of the metatarsal heads
- Produces a palpable click
- Displacement of an intermetatarsal mass

Torriani, Martin, and Susan V. Kattapuram. "Dynamic sonography of the forefoot: the sonographic Mulder sign." *American Journal of Roentgenology* 180.4 (2003): 1121-1123.