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# Case of the Day

# Check the Answer!



  
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# Case 1

18/F

C.C.: Abdominal pain

Duration: 1~2 days

**Question: Diagnosis?**

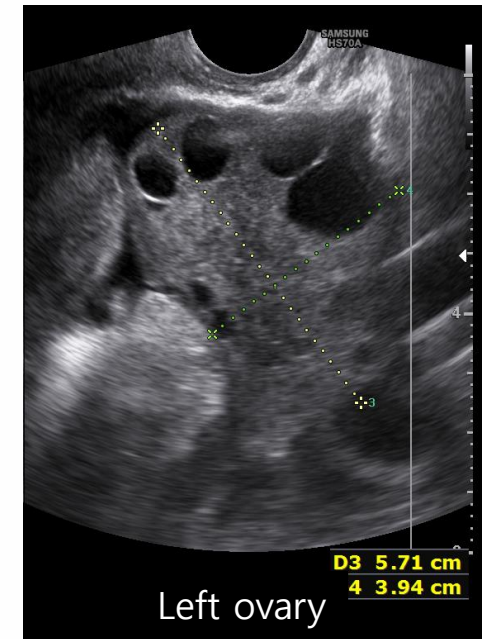
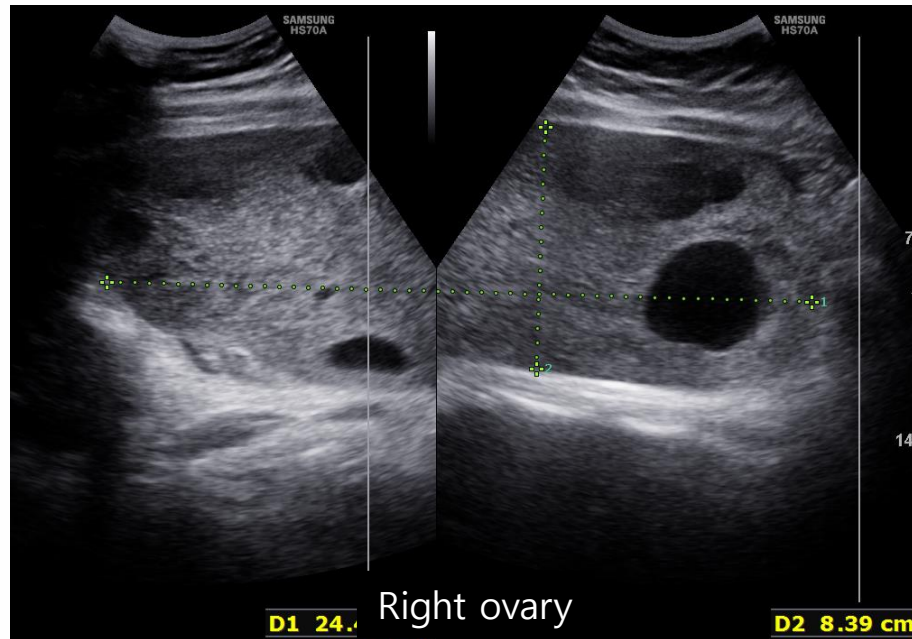


  
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# Case 1





  
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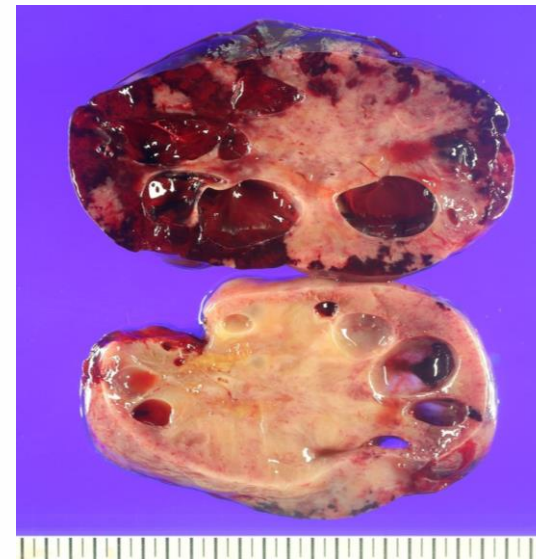
# Case 1



# Case 1

## Massive ovarian edema with fibromatosis

- Ovary, right oophorectomy;
  - **Immature fibromatosis & massive edema**
- Ovary, left, partial resection;
  - **Immature fibromatosis & massive edema**





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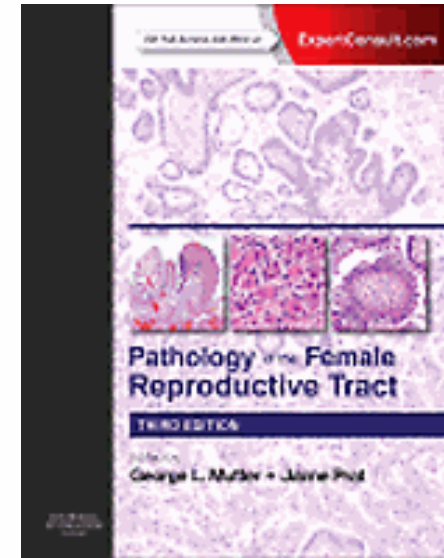
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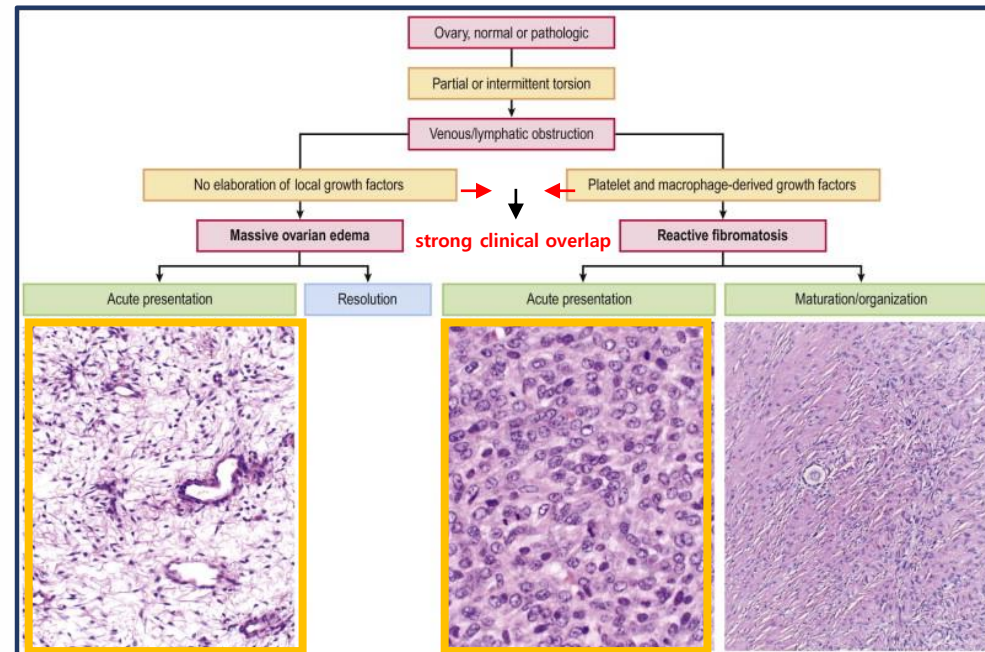
# Case 1

## Chapter 24. Non-Neoplastic and Tumor-Like Conditions of the Ovary

| CHAPTER OUTLINE   |     |   |     |
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# Case 1



Massive ovarian edema with Immature fibromatosis



  
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## Case 2

72/F

C.C: Incidentally detected renal mass

Lab: not specific

**Question: Diagnosis?**

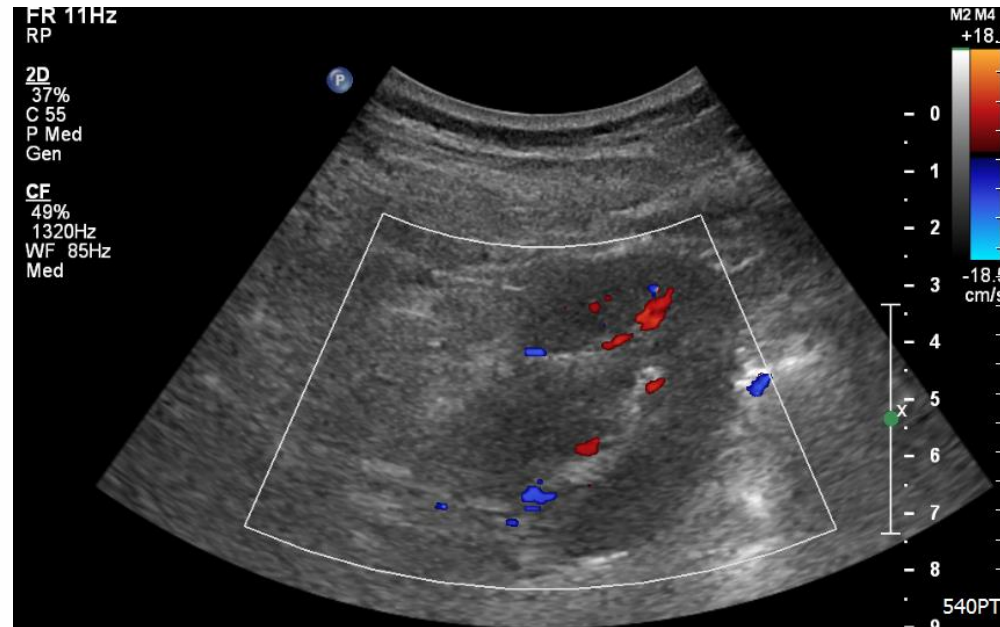


  
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## Case 2



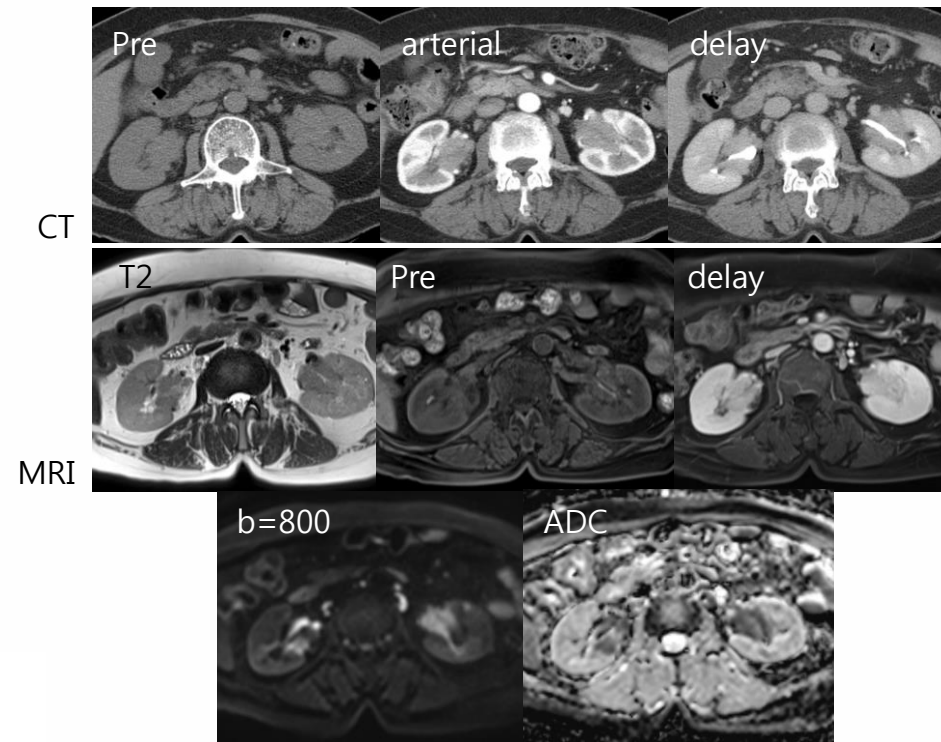


  
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## Case 2





  
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## Case 2

### IgG4-related kidney disease

- ✓ IgG4-RD systemic inflammatory disorder that typically shows mass-forming lesions in various combinations that can involve almost every organ.
- ✓ IgG4-RKD is characterized by IgG4-positive plasma cell-rich TIN(tubulointerstitial nephritis) with different degrees of fibrosis intermingled from area to area.
  - \*35% of patients with AIP
- ✓ average age of 65 years, and **73–87% are men**
- ✓ unexplained renal dysfunction, acute or progressive renal failure
- ✓ Elevated serum IgG4 levels are the most important serological finding in IgG4-RKD (20–30% ; Normal)



## Case 2

### IgG4-related kidney disease

✓ *CT*

- *bilateral round or wedge-shaped peripheral cortical lesions (M/C)*
- *diffuse patchy involvement*
- *a rim of soft tissue around the kidney*
- *bilateral nodules in the renal sinuses*
- ***diffuse wall thickening of the renal pelvis***
- *solitary lesions are very rare, but if encountered, the suspicion of malignant tumor*

✓ *MRI*

- *hypointensity on T1 & T2*
- *DWI(+)*



  
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## Case 3

39/F

C.C.: Incidental finding on US

**Question: Diagnosis?**

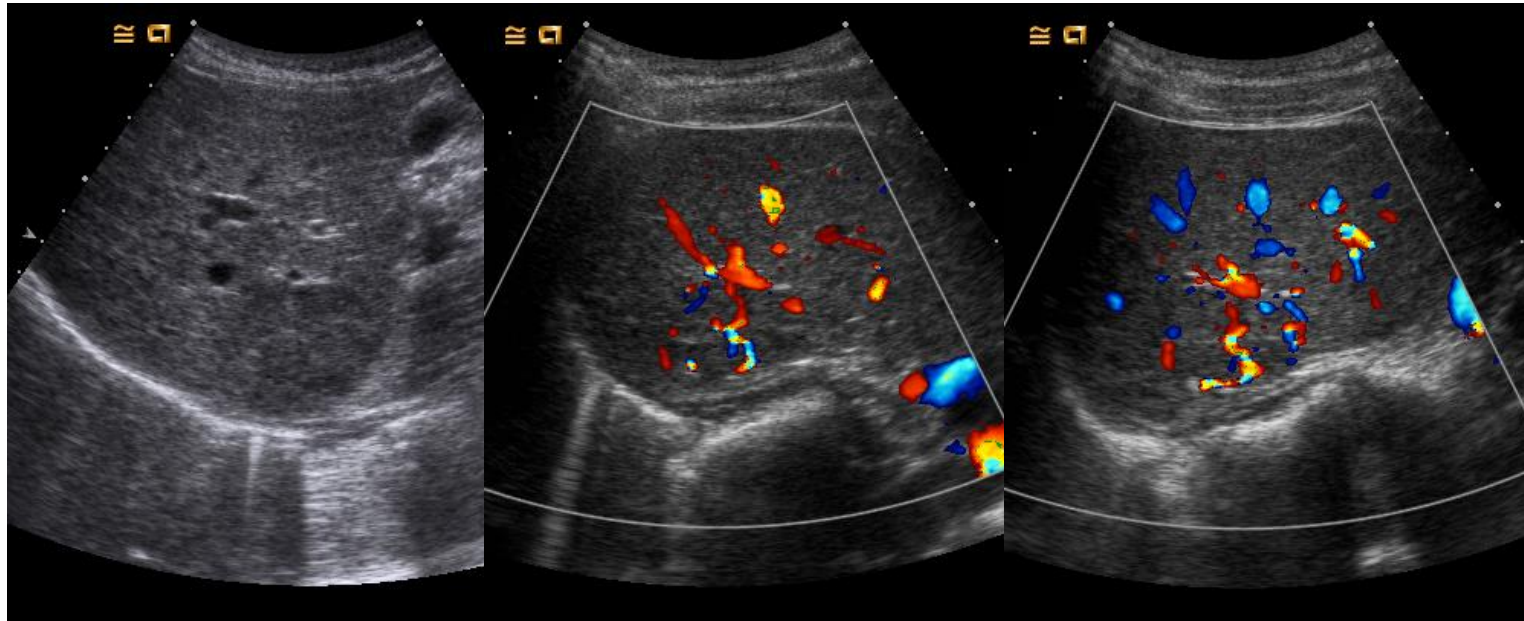


  
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## Case 3



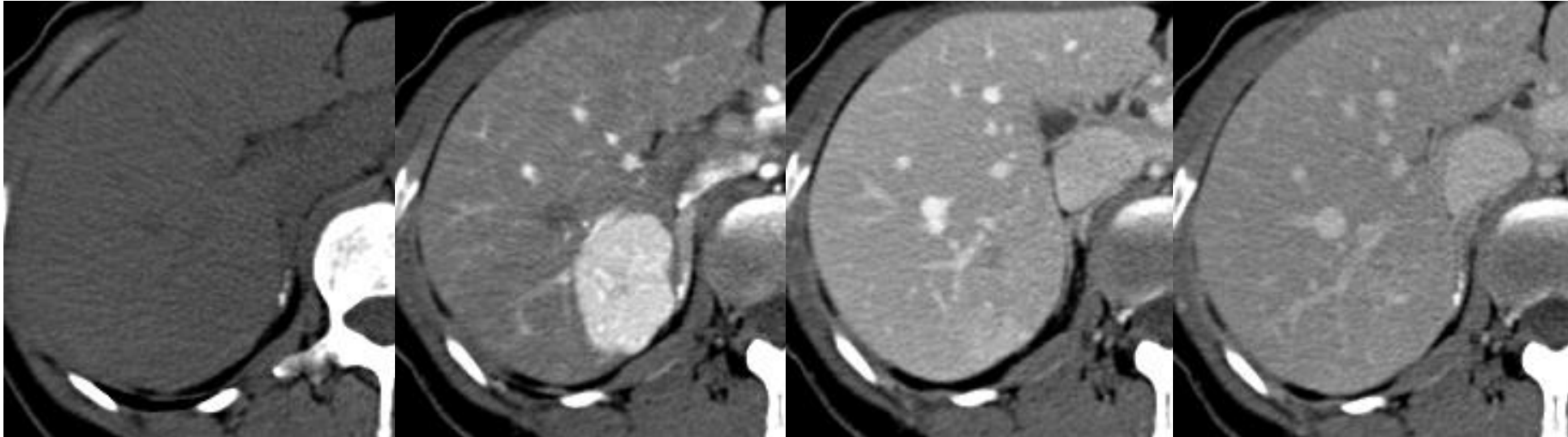


  
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## Case 3





  
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# Case 3

## Focal nodular hyperplasia (FNH)

- **Benign tumor of liver caused by hyperplastic response to a localized vascular abnormality**
- 2nd m/c benign liver tumor (Prevalence : 0.9% / F>M)
- Imaging findings
  - US: Mostly homogeneous & isoechoic mass  
Central scar – hypoechoic
  - Doppler: spoke-wheel pattern (large central feeding artery with multiple small vessels radiating peripherally)
  - CT: NECT → Iso or hypodense to liver / **Central scar**
  - MRI: T1 iso-slightly hypo and T2 slightly hyper SI mass  
Homogeneous arterial enhancement and delayed enhancement  
HBP iso to high SI  
Central scar – T1 hypo, T2 hyper SI



  
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## Case 4

75/F

C.C.: Incidental finding on US

**Question: Diagnosis?**

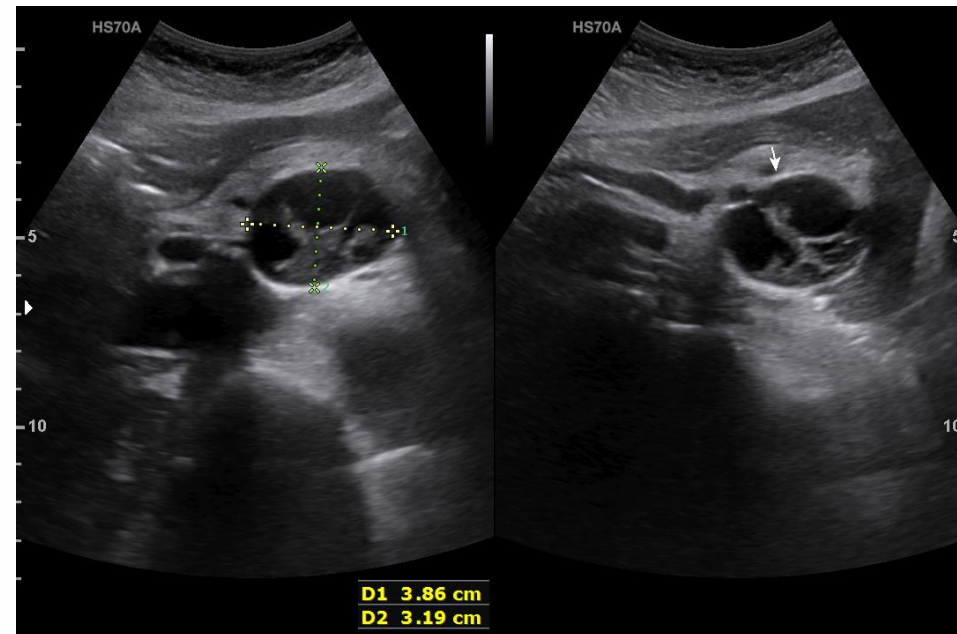


  
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## Case 4



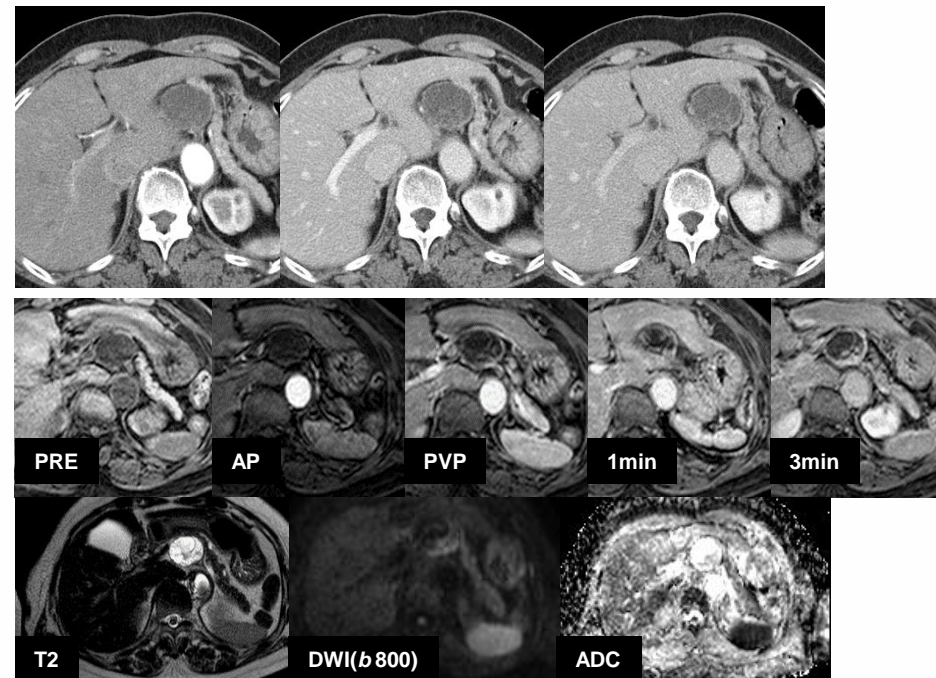


  
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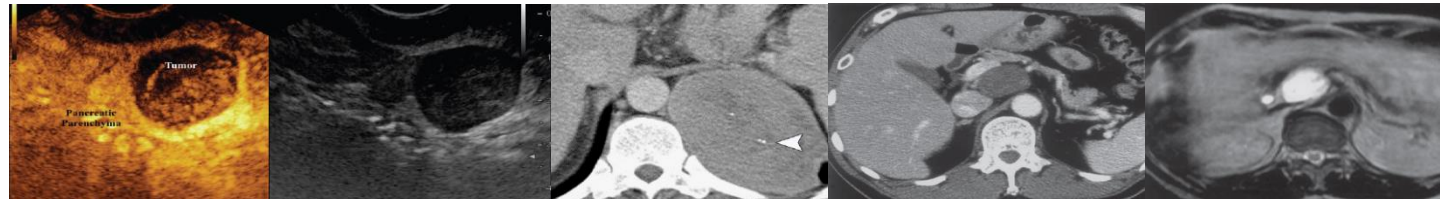
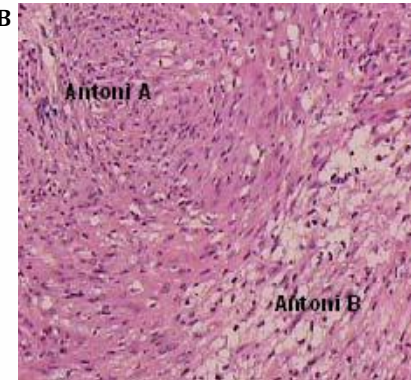
## Case 4



# Case 4

## Retroperitoneal schwannoma

- Benign tumor that arises from the perineural sheath of Schwann cell – Antoni A & Antoni B
  - 6% of retroperitoneal neoplasm (20-50 years / F>M)
  - Frequent cystic change (66%)
  - Ancient schwannomas: hemorrhage, cystic changes, calcification, hyalinization
  - Imaging findings
    - **Round, well-defined mass with/without calcification & cystic change**
    - US: well-defined echogenic mass with/without calcification or cystic portion
    - CT: homogeneous (may be heterogeneous in large size)
    - MRI: Nonspecific (T1 iso, T2 high SI, Heterogeneous enhancement )
- Antoni A(cellular)-T1,T2 low + cystic/myxoid Antoni B-T2 high**





  
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## Case 5

42/F

C.C.: Detected on screening US

**Question: Diagnosis?**

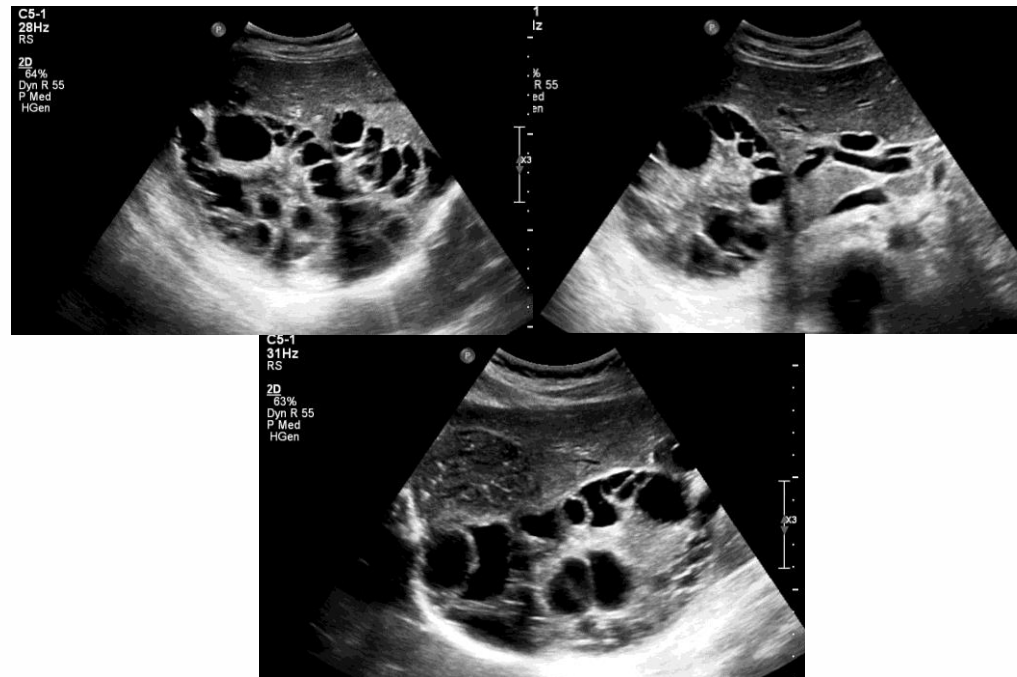


  
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## Case 5



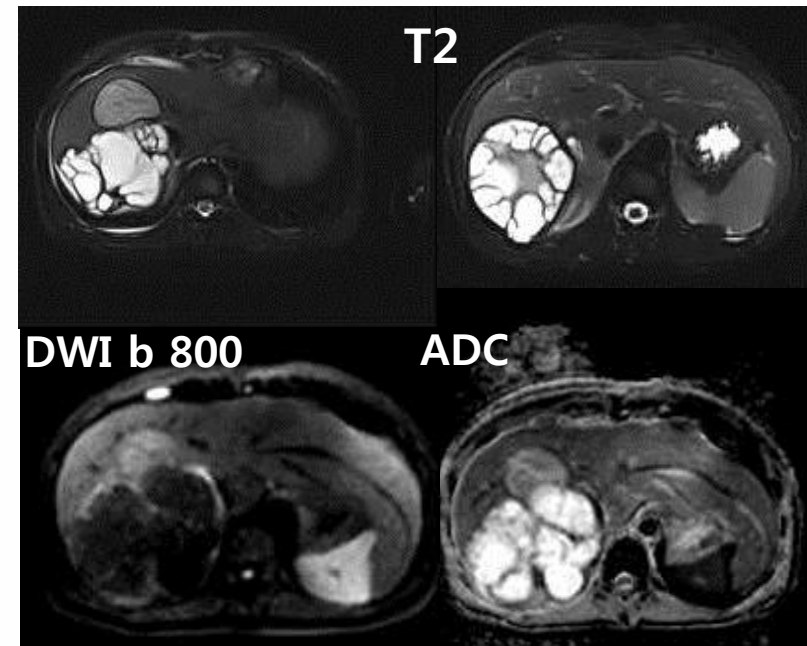


  
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## Case 5



## Case 5

### Hydatid cyst (Echinococcus granulosus infection)

- invade the intestinal mucosal wall and proceed to the liver via the portal venous system.



Proximal small intestine



Oncosphere

Portal vein or lymphatics



Oncosphere

Liver(75%), Lung(15%)

“ Hydatid cyst ”



# Case 5

## *Echinococcus granulosus* (Hydatid Cyst)

- **US findings** : variable and range from purely cystic to solid-appearing pseudotumors
  - I. Wavy bands of delaminated endocyst (watery lily sign)
  - II. Daughter cysts (brood capsules)
    - small spheres that contain the protoscolices and are formed from rests of the germinal layer
  - I. Calcifications at periphery

- *Radiographics* 24.4 (2004): 937-955.

- *Radiographics* 20.3 (2000): 795-817.



  
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## Case 6

40/F

C.C.: Right hand pain & hypesthesia in the  
median nerve territory

Duration: 3 months

**Question: Diagnosis?**

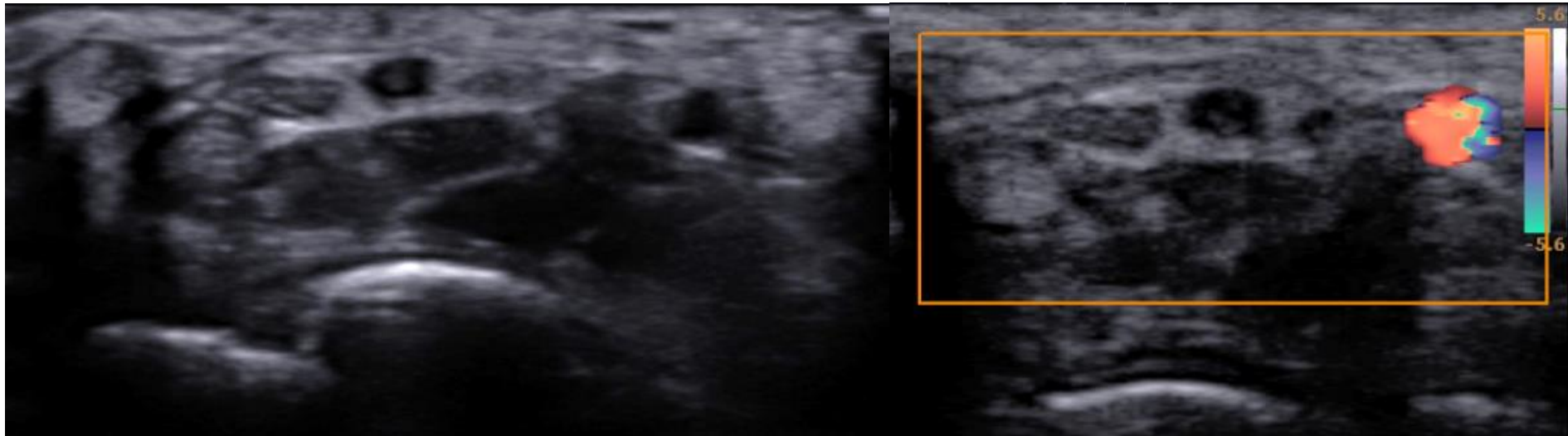


  
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## Case 6



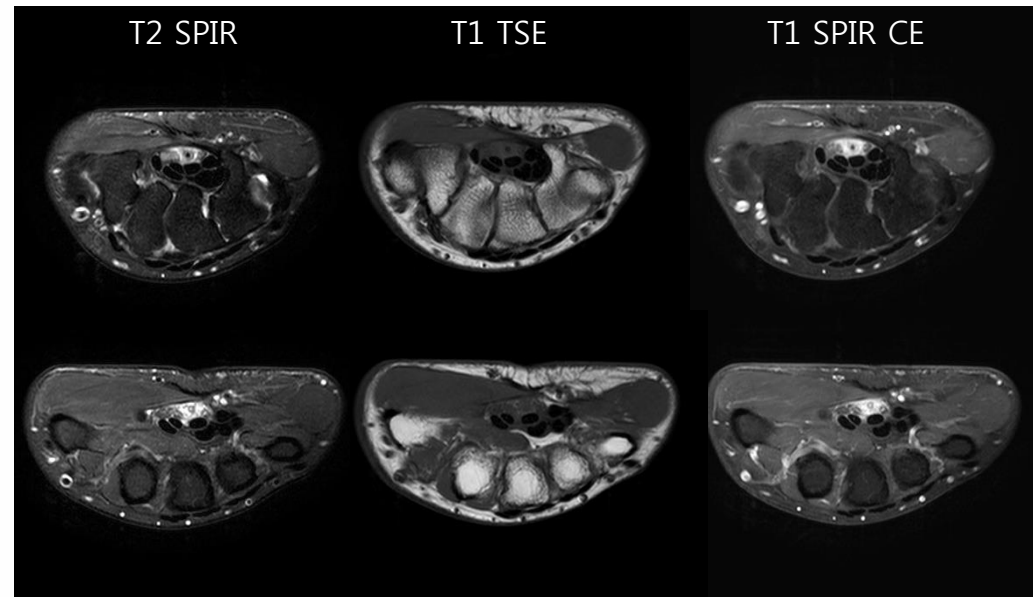


  
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## Case 6





## Case 6

### Thrombosed persistent median artery with bifid median nerve

#### Persistent median artery

- An accessory a. that arises from the ulnar or ant. interosseous a. in the proximal forearm and is a persistent embryological remnant of the axial artery
- Prevalence: ~10% (bilateral 63%)
- Association with bifid median n. (63~75% of PMA)
- Usually asymptomatic, but potential cause of CTS in cases of enlarged(>2~3mm), thrombosed, or calcified PMA

- **Thrombosed PMA**

Possible cause: infection of deep facial planes due to cut wound, frequent bicycle riding with wrist placed in unusual position, trauma, stiff clutch of motorcycle, oral contraceptive, screwdriver usage and excessive housework

Martyn Salter et al. "Thrombosed persistent median artery causing carpal tunnel syndrome associated with bifurcated median nerve: A case report." Pol J Radiol (2011) 76:46-48



  
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## Case 7

19/M

C.C.: Left hand (1st to 5th fingers) motor weakness

Duration: 1 months

Hx: Exercise of upper extremity for 1 year

**Question: Diagnosis?**

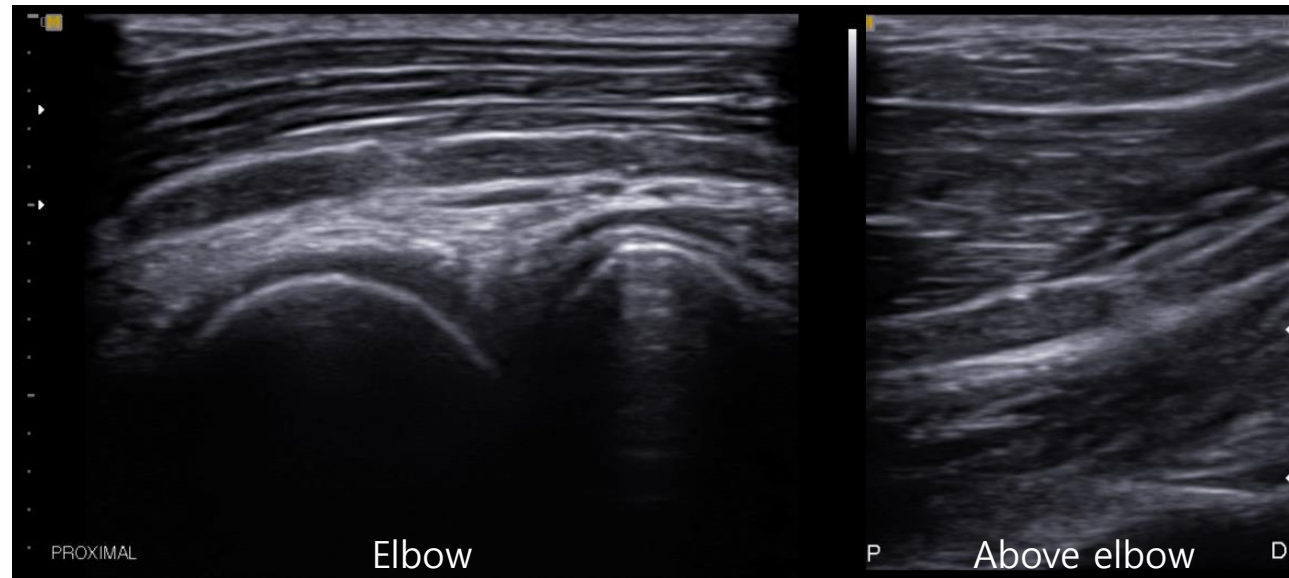


  
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# Case 7



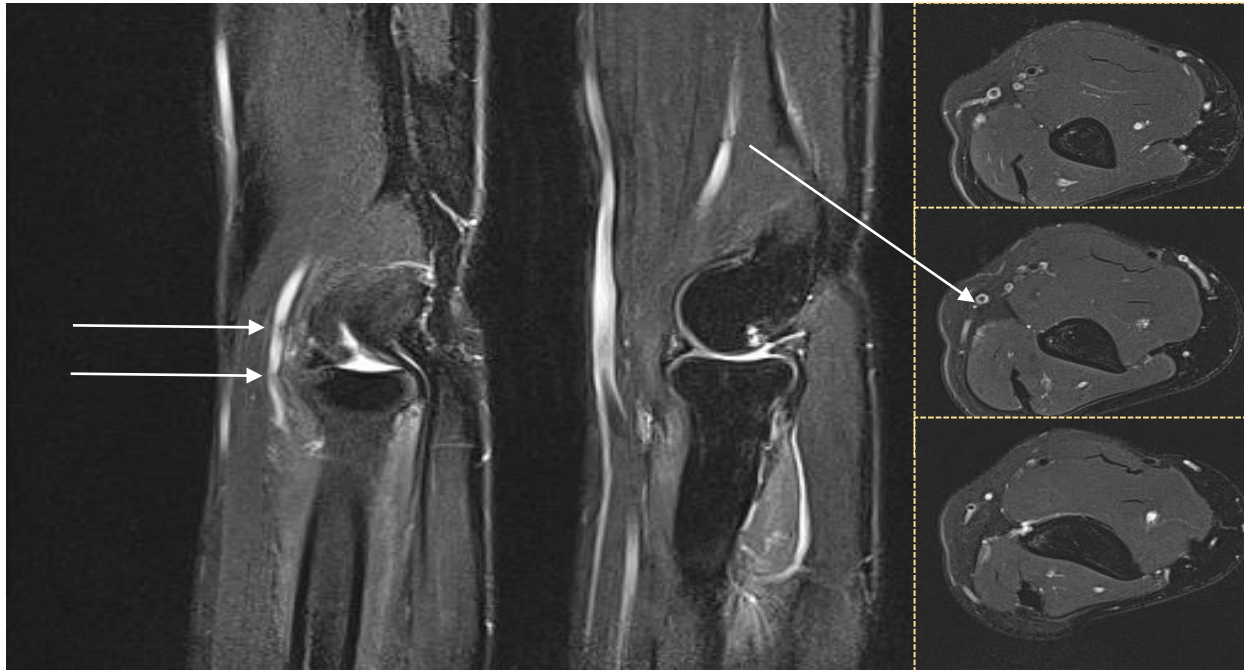


  
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## Case 7





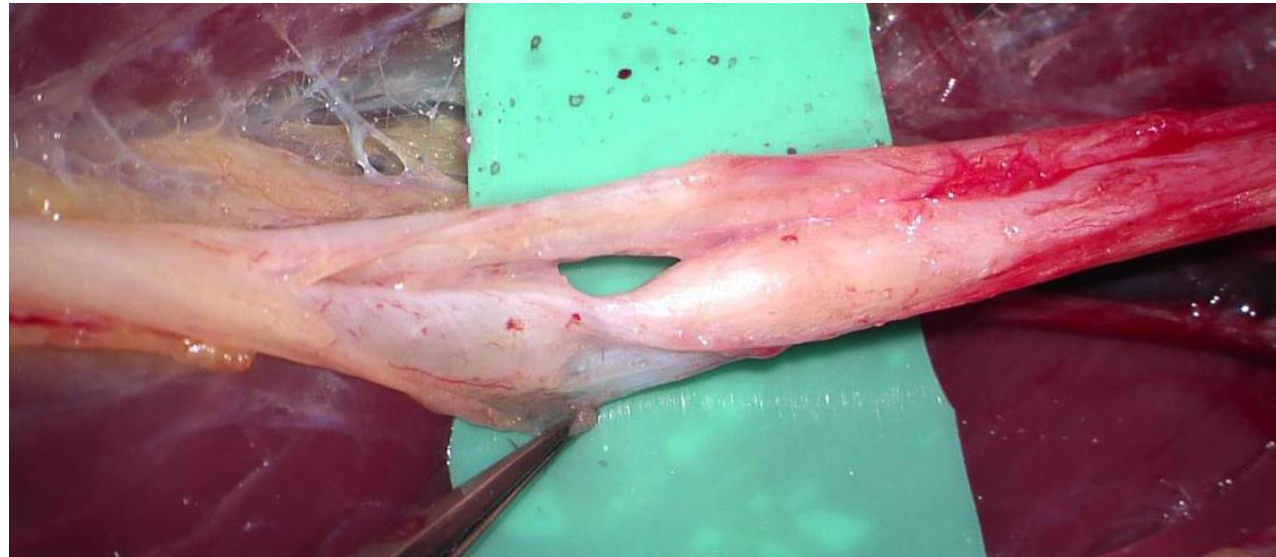
  
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# Case 7

## Radial nerve torsion



# Case 7

## Radial nerve torsion

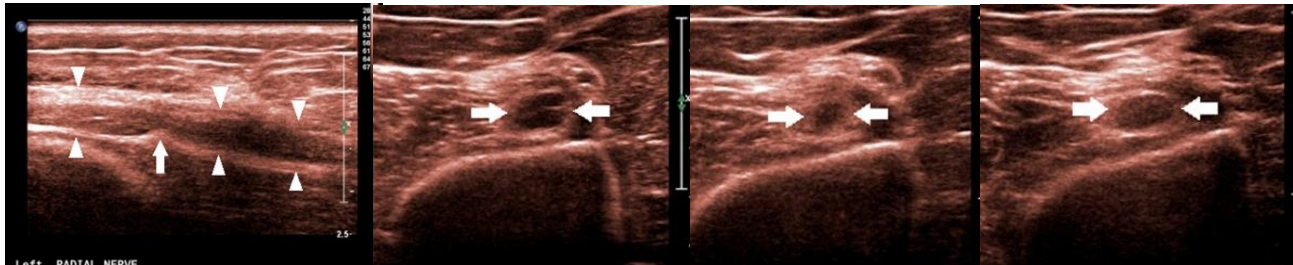
Rare cause of peripheral nerve palsy in upper extremity.

M/C in radial nerve, but also reported in other nerves of U/E.

Pathogenesis is unclear;

Localized inflammation or neurovascular injury resulting in adhesion or scarring → vulnerable to repetitive motion  
→ nerve twisting

Imaging feature: hourglass-like constriction with diffusely enlarged nerve



Yoshimi Endo et al. "Spontaneous nerve torsion: unusual cause of radial nerve palsy." Skeletal Radiol (2015) 44:457–461



  
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## Case 8

60/F

C.C.: Incidental finding on US

**Question: Diagnosis?**

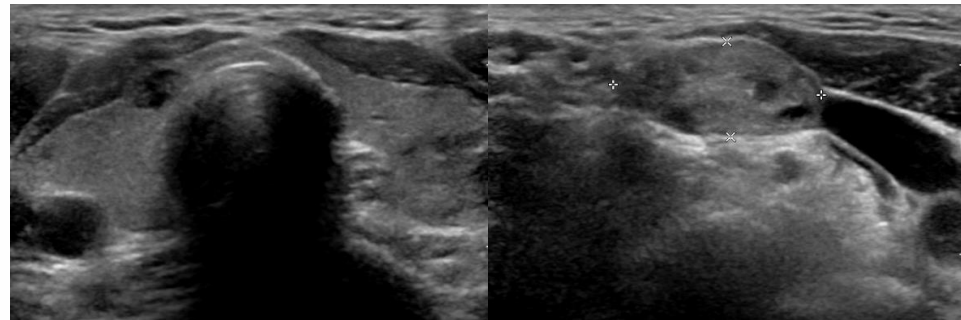


  
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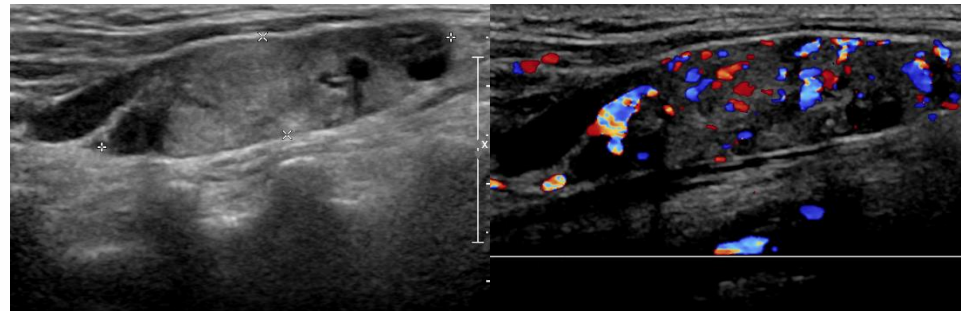
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## Case 8



Short axis



Long axis

NECK US

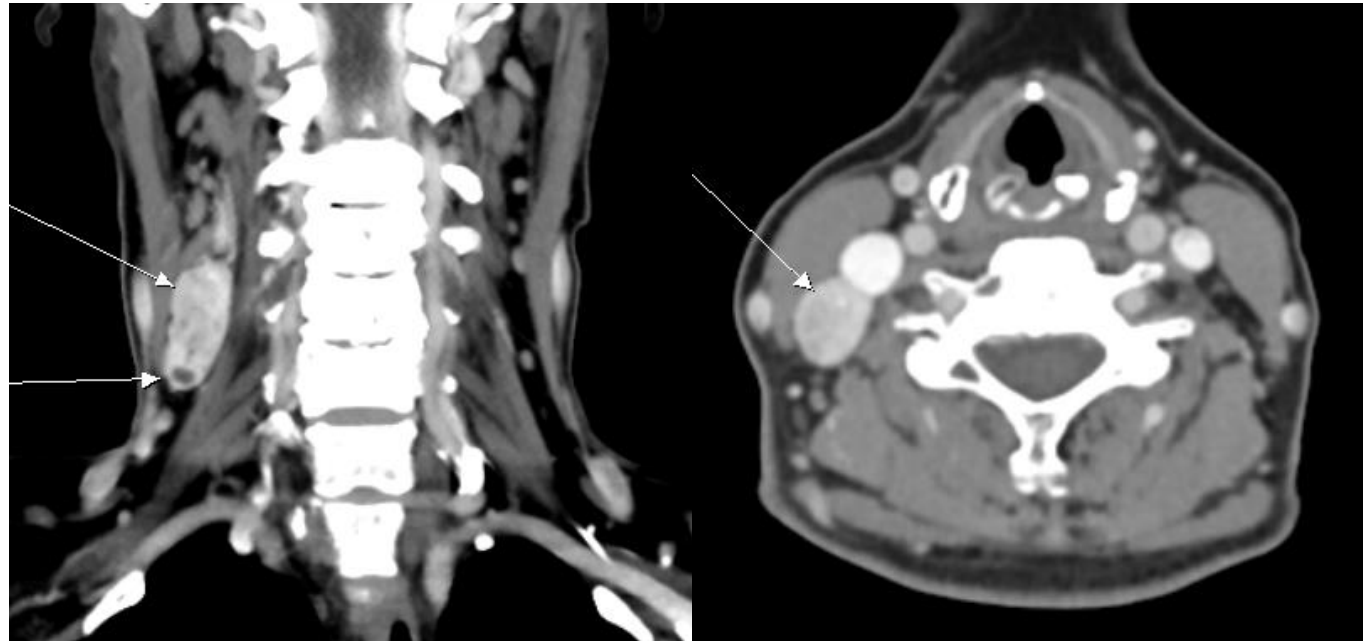


  
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## Case 8



NECK CT [CE]



  
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## Case 8

### Ectopic thyroid in lateral neck

Pathologic report for excisional biopsy:  
Ectopic thyroid (sequestered thyroid nodule)

## Case 8

### Ectopic thyroid in lateral neck

4. typical location of thyroid ectopia
- (a) the base of the tongue
  - (b) adjacent to the hyoid bone
  - (c) the midline infra-hyoid portion of the neck
  - (d) the lateral part of the neck, rarely



RadioGraphics 2014; 34:37–50

## Case 8

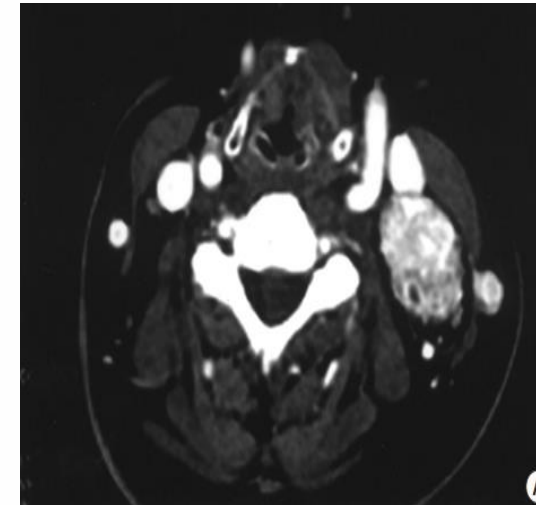
### Ectopic thyroid in lateral neck

#### Ectopic thyroid tissue in lateral neck

Definition: Any thyroid tissue lateral to the carotid sheath and jugular vein

#### The origin of lateral thyroid tissue: unclear

Hypothesis: lateral thyroid anlagen (ie, the ultimobranchial bodies), which have failed to fuse appropriately with the median anlage during caudal migration



J Korean Med Sci 2008;23:548-550



  
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## Case 9

82/M

C.C.: Dyspnea

**Question: Diagnosis?**

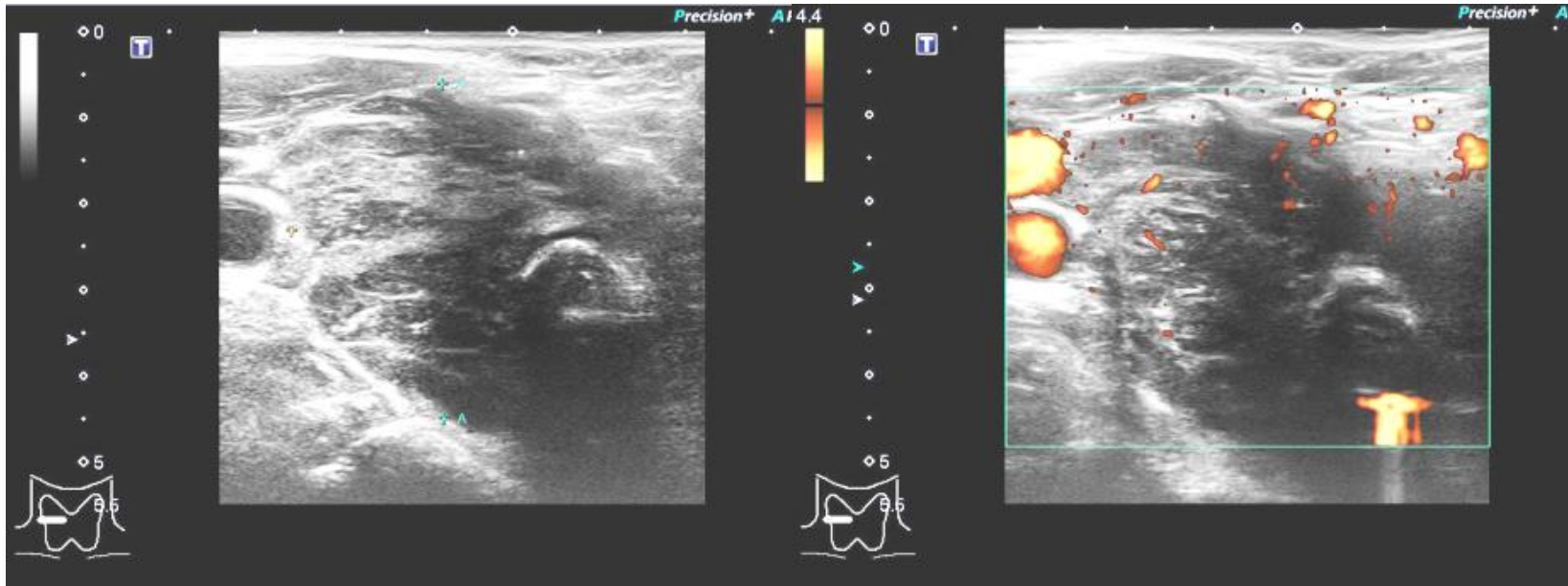


  
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## Case 9



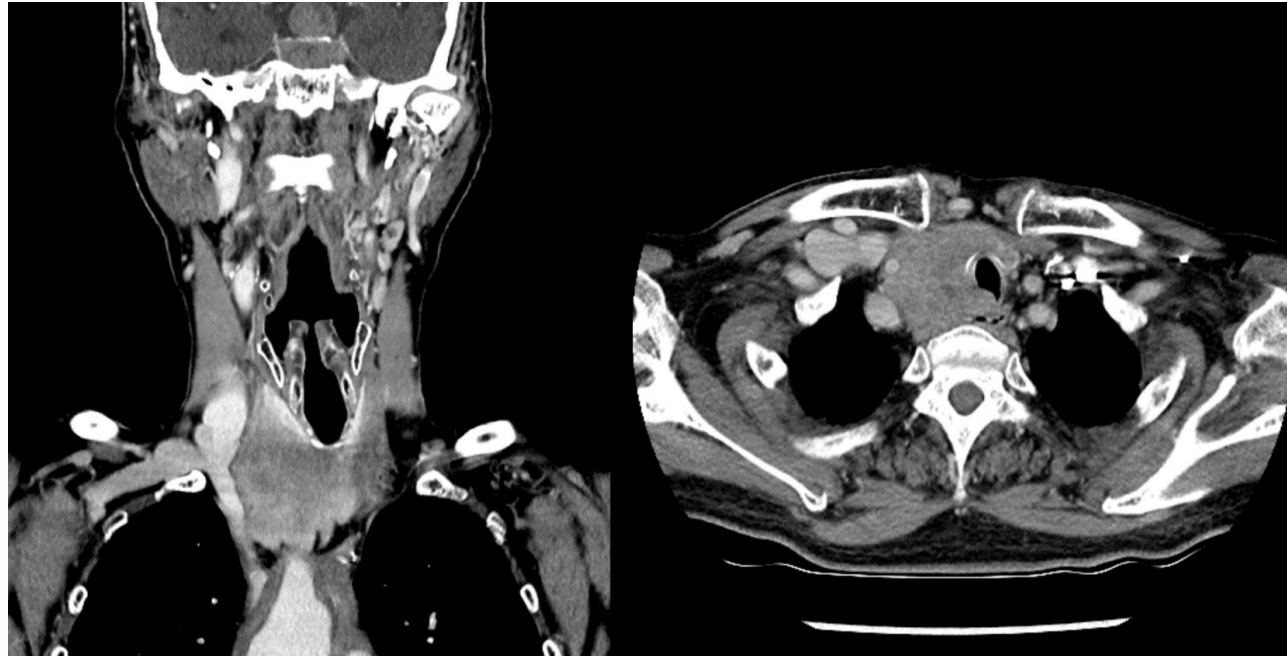


  
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## Case 9





## Case 9

### Riedel's thyroiditis

Right neck biopsy: Dense fibrosis with patchy infiltration of lymphocytes and eosinophils without thyroid structure, suggestive of Riedel thyroiditis

The results of immunohistochemical staining;

1. CD3 : +ve in T cells
2. CD20 : +ve in B cells
3. CD30 : revealed no atypical cells
4. Thyroglobulin : -ve



## Case 9

### Riedel's thyroiditis

- \* A rare form of chronic thyroiditis characterized by a fibrosing reaction that destroys the thyroid gland and extends into the adjacent soft tissues of the neck with unknown cause. It maybe associated with mediastinal/retroperitoneal fibrosis, sclerosing cholangitis
- \* Symptoms: stridor, dysphagia and vocalfold paralysis may occur (recurrent laryngeal nerve involvement), about 1/3 have hypothyroidism
- \* Demographics: F>M, 4<sup>th</sup>-7<sup>th</sup> decades, firm palpable thyroid
- \* Imaging findings
  - USG: Heterogeneous hypoechoic mass
  - CT: hypodense compared to normal gland
  - MR: decreased signal on T1 and T2 weighted images as well as adjacent soft tissue infiltration



  
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## Case 10

61/F

C.C.: Palpable mass on the right breast

**Question: Diagnosis?**

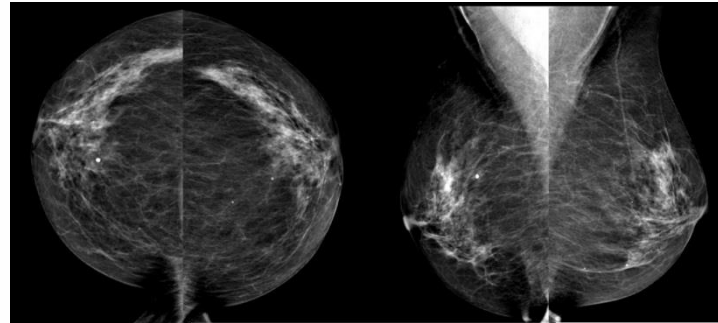


  
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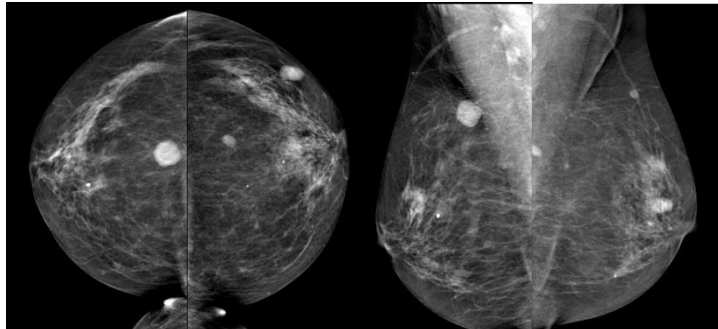
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## Case 10



2008-06-25



2010-06-25

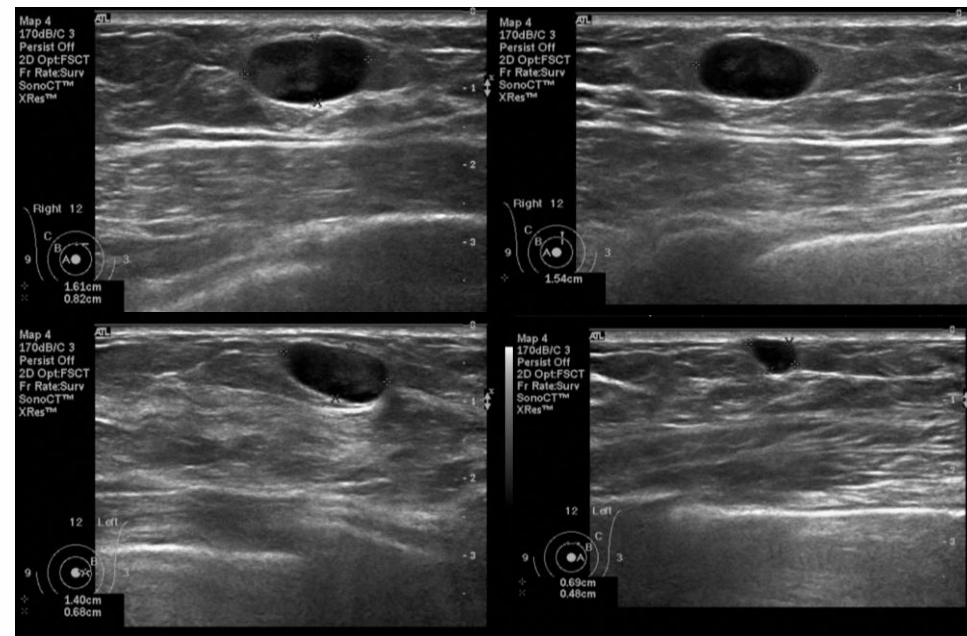


  
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# Case 10





# Case 10

## Breast lymphoma

Only approximately 0.04% to 0.7% of all breast cancer

### Primary breast lymphoma

breast should be the site of the first or major manifestation of the lymphoma

no evidence of lymphoma elsewhere, except at the ipsilateral axillary node

accounts for 0.85% to 2.2% of all extranodal malignant lymphomas

m/c symptom of breast lymphoma: painless, palpable mass

# Case 10

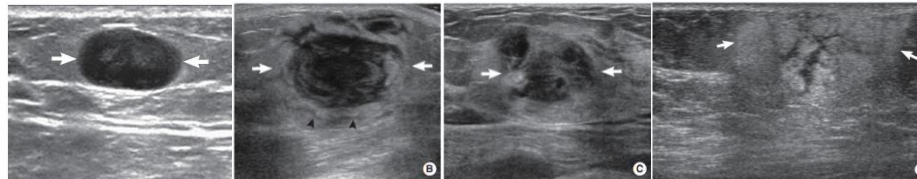
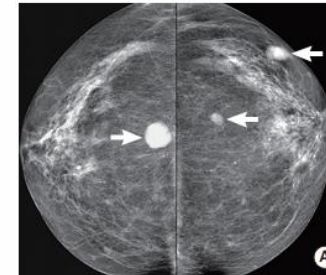
## Imaging findings

### Mammography

solitary, noncalcified, circumscribed, or indistinctly delineated, oval or round mass that can vary in density

### US

Hypoechoic solid mass with circumscribed or indistinct margins  
Heterogeneous echo patterns, hypoechogenicity, and hyperechogenicity are also seen frequently



Lymphoma Affecting the Breast: A Pictorial Review of Multimodal Imaging Findings. Shim E, Song SE, Seo BK, Kim YS, Son GS  
J Breast Cancer. 2013 Sep;16(3):254-265



# Case 10

## Differential diagnosis

### **Other breast malignancies**

characteristic features of more common breast carcinomas  
- calcifications, spiculations, or architectural distortion  
-> distinctively absent in lymphoma

### **Inflammatory disease**

complicated cysts that have movable echoes or sedimentations, complex cysts, which have cystic and solid contents  
dilated ducts or fistulous tracts to the skin

### **Subcutaneous panniculitis and fat necrosis**

panniculitis - spontaneously regresses without treatment within 1 to 4 weeks  
fat necrosis - history of breast surgery, trauma, and biopsy



  
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# Case 11

66/F

C.C.: Mass on the left breast

Duration: 2 weeks

**Question: Diagnosis?**

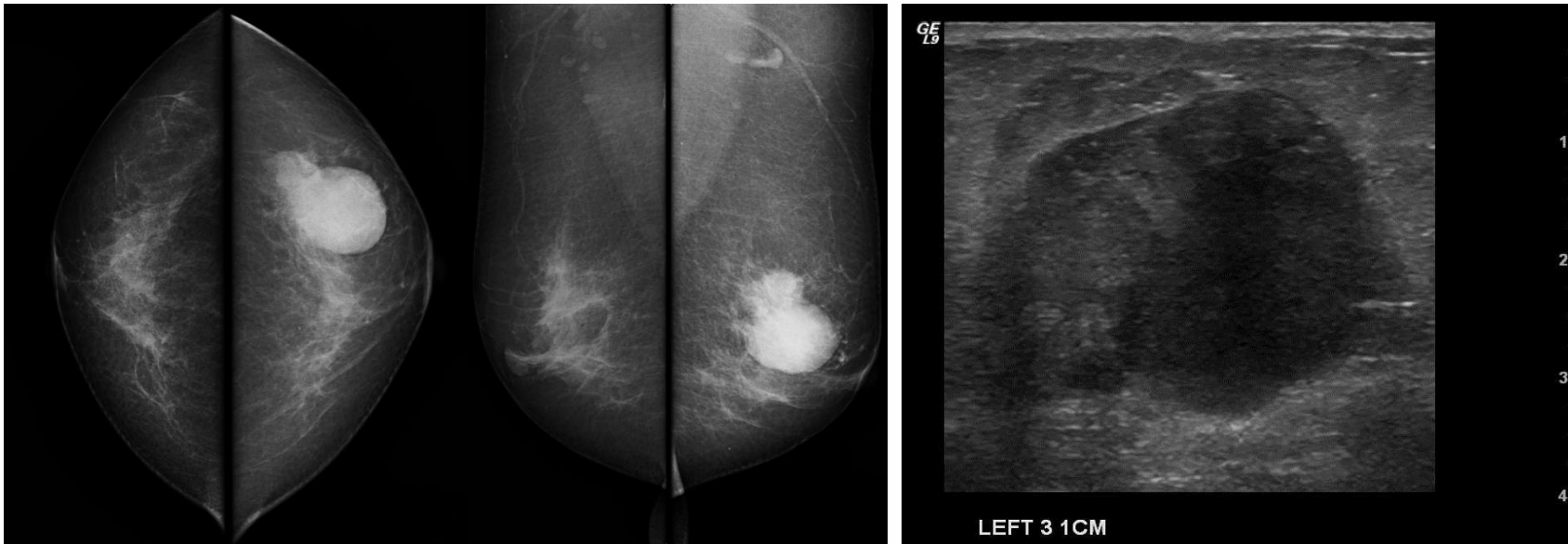


  
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# Case 11



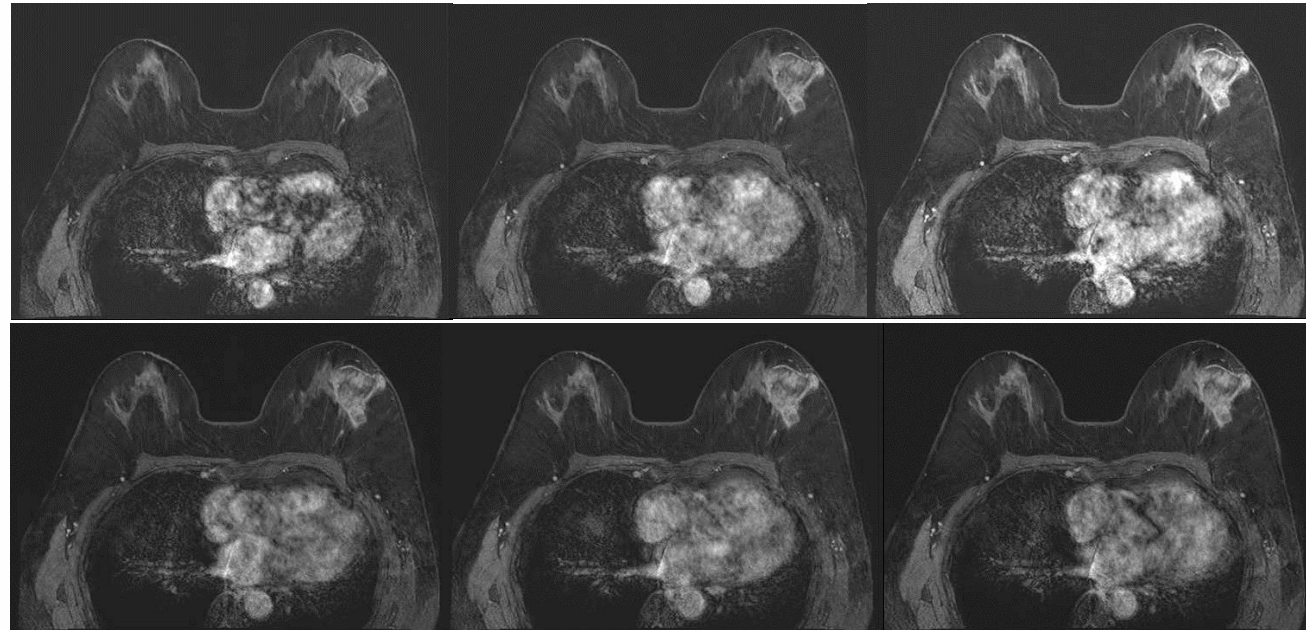


  
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# Case 11



Dynamic CE



  
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# Case 11

## **Metaplastic carcinoma**

ER: Negative (0%, Allred 0) , PR: Negative (0%, Allred 0),  
c-erbB2: 0



# Case 11

## Metaplastic carcinoma

Ductal carcinoma that has undergone metaplasia into a nonglandular growth pattern, including squamous cell, spindle cell, and heterogeneous mesenchymal growth patterns.

< 1 % of ductal carcinoma

Frequently discovered in patients more than 50 yrs old

Rapidly growing palpable mass

Axillary lymph node metastasis is infrequent.

Variants (Wargotz et al)

- matrix-producing carcinoma

- spindle-cell carcinoma

- squamous cell carcinoma

- Carcinosarcoma

- metaplastic carcinoma with osteoclastic giant cells

- low-grade fibromatosis-like tumors



# Case 11

## Imaging Findings

### *Mammography*

Predominantly circumscribed noncalcified high-density mass

### *US*

Round or lobular mass

Well-circumscribed or microlobulated margin

May show complex internal echogenicity, with solid and cystic components → necrosis and cystic degeneration.

### *MRI*

Round or lobular mass

Relatively smooth (or, infrequently, spiculated) margin

High SI on T2 → necrosis and cystic degeneration

Rim like enhancement and the type III washout pattern.



  
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## Case 12

4 days/M

C.C.: Incidentally detected hepatic lesion on US

P/Hx: NICU care for birth asphyxia 《37+0wks, 2660g,

C/S》

**Question: Diagnosis?**

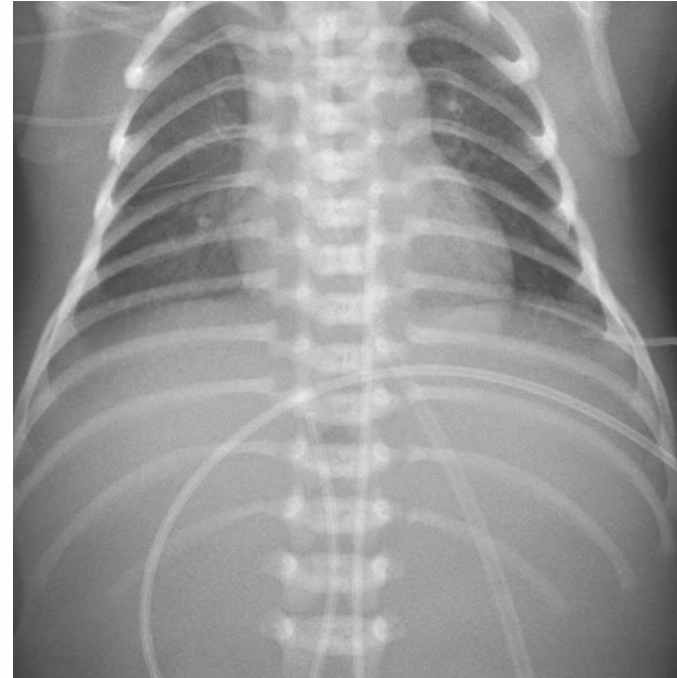
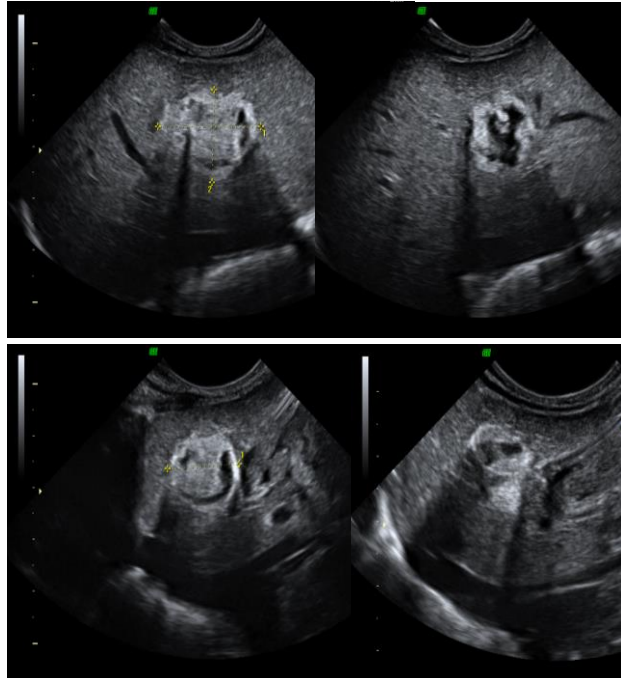


  
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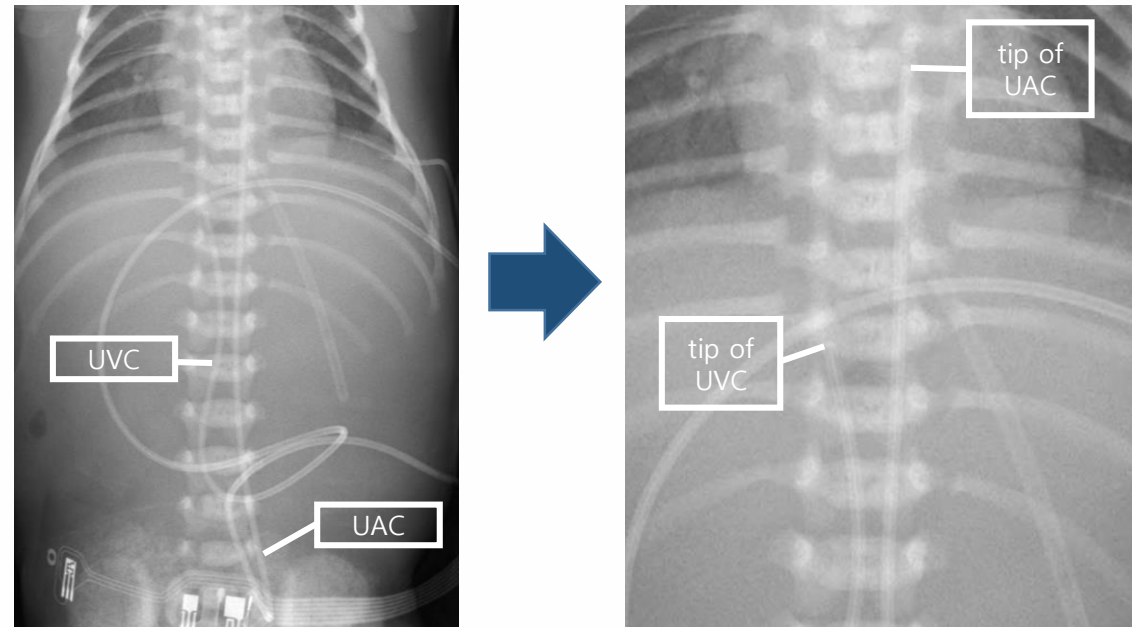


## Case 12



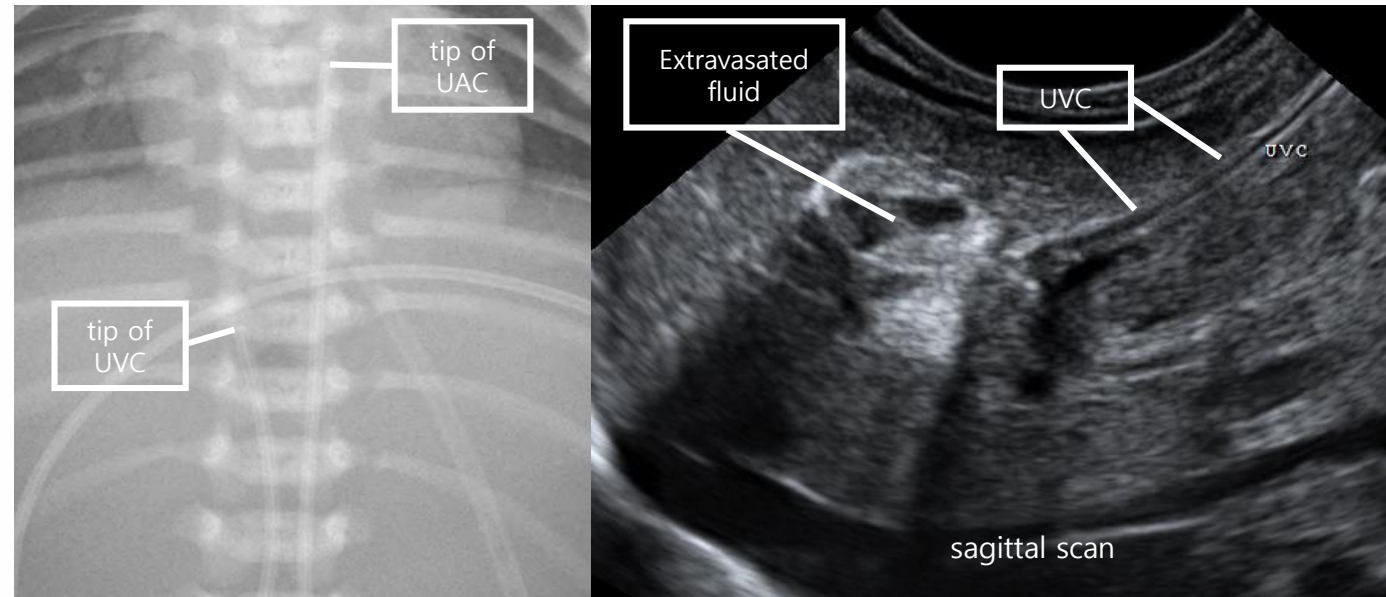
## Case 12

**Intrahepatic extravasation of fluid from UVC : a complication of malpositioned UVC**



## Case 12

**Intrahepatic extravasation of fluid from UVC : a complication of malpositioned UVC**





  
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## Case 12

UVC: for fluid administration

Intrahepatic extravasation of (TPN) fluid

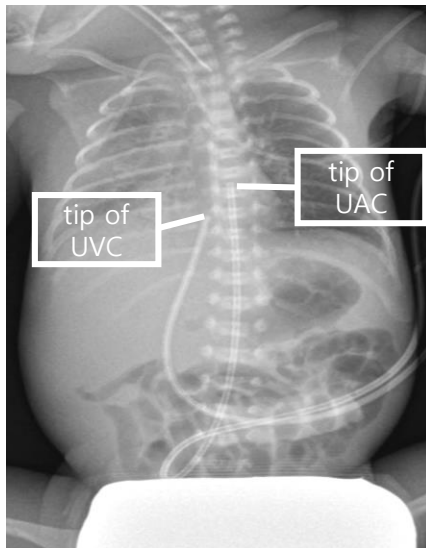
→ prompt removal of UVC

if not noticed, not removed

→ possibility of hepatic perforation or laceration

# Case 12

## Appropriate location of catheter tips



### Umbilical vein catheter

- IVC at the level of diaphragm (T7-T9)
- lower part of right atrium

### Umbilical artery catheter

- high position (T6-T9)
- low position (L3-L5)