

# 심포지엄 CASE

서울아산병원  
호흡기내과 임상강사 유정완

서울아산병원

## Chief Complaints

Right chest pain ( 15 days ago)

57/M



# Present Illness

15일 전부터 발생한 흡기시 악화되는 우측 흉통 (흡기시 악화)으로 외부 병원 내원. 흉부 방사성 촬영상 우측 흉수 소견 있음을 확인. 흉수 천자상 ADA 47 U/L로 상승 결핵성 흉막염 의심되어 일차 항결핵제 7일간 복용 중, chest CT , PET 촬영에서 malignancy 소견 의심되어 본원 내원.

## Past medical History

DM/HTN/Pul TB (-/-/-)

OP Hx: 2년전 thyroid ca로 total thyroidectomy 시행 후,  
thyroxine 복용중

**Family history:** non-specific

## Social History

Alcohol: none

Smoking: past-smoker, ( 20YA quitting), 0.5 pack/day for 15 years

Occupation: 건설현장일

# Review of system

## General

general weakness (-)/weight loss (+): 3kg for 10 days

febrile sense/chills (-/-)

## HEENT

headache/dizziness (-/-)

sore throat/Hoarseness (-/-)

## Respiratory

Cough/sputum/hemoptysis (-/-/-)

DOE (-)



# Review of system

## Cardiovascular

palpitation/orthopnea (-/-)

## Gastrointestinal

A/N/V/C/D (-/-/-/-/-)

abdominal pain/discomfort (-/-)

hematemesis/melena/hematochezia (-/-/-)

## Genitourinary

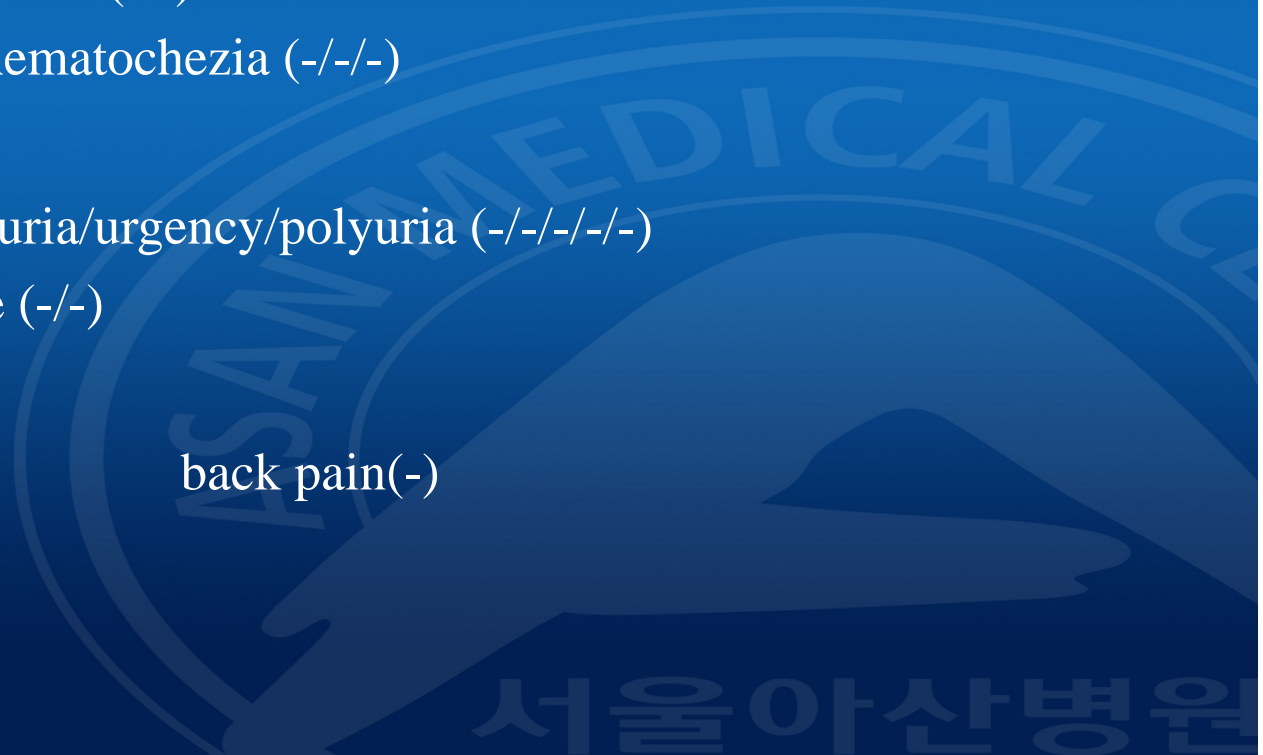
frequency/dysuria/nocturia/urgency/polyuria (-/-/-/-/-)

hematuria /foamy urine (-/-)

## Musculoskeletal

arthralgia/myalgia (-/-)

back pain(-)



# Physical examination

V/S: BP: 133/93 mmHg-PR: 84/min-RR: 16/min-BT: 36.5°C

General appearance: not so ill-looking, Mental status: alert

Skin

skin rash/bruising/petechiae (-/-/-)

HEENT

isocoric pupils with prompt light reflex

not anemic conjunctivae, no icteric sclerae

palpable lymph node (-)

jugular vein engorgement (-)

ASAN MEDICAL CENTER

서울아산병원

# Physical examination

## Chest

symmetric expansion without retraction

decreased breath sound on rt. lower anterior and posterior thorax

regular heart beats without murmur

## Abdomen

soft & flat

normoactive bowel sound

direct tenderness/ rebound tenderness (-/-)

hepatomegaly/splenomegaly (-/-)

## Musculoskeletal

pretibial pitting edema (-/-)

costovertebral angle tenderness (-/-)



# Initial laboratory findings

CBC: WBC 10,300 /mm<sup>3</sup>      Hb 14.9 g/dL      Plt 375k /mm<sup>3</sup>

## Chemical battery

BUN/Cr                      9/0.57 mg/dL                      Glucose                      165 mg/dL

Protein/Albumin            8.0/3.7 g/dL                      Ca/P                      8.3/3.9 mg/dL

AST/ALT                      18/19 IU/L                      ALP                      66 IU/L

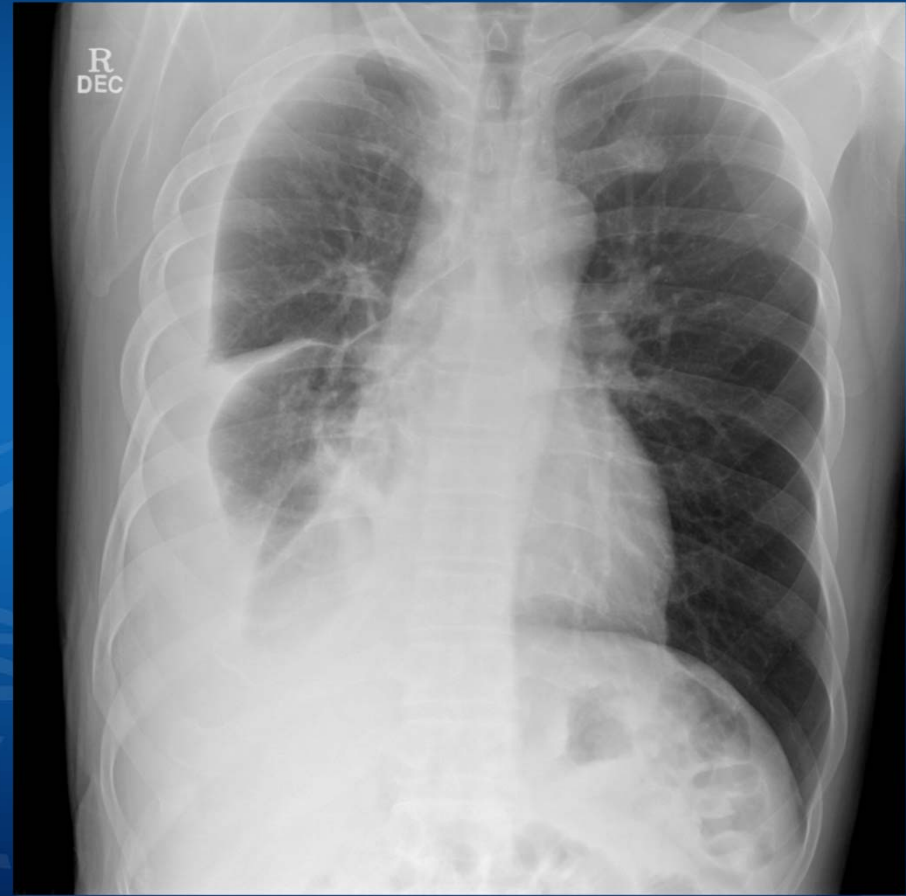
Total bilirubin              0.3 mg/dL                      LD                      184/L

Na-K-Cl                      139-4.0-98 mmol/L

Coagulation: PT 11.3 sec    INR 1.01                      aPTT 28.8 sec



# Initial Chest Radiography



# Initial Problem list

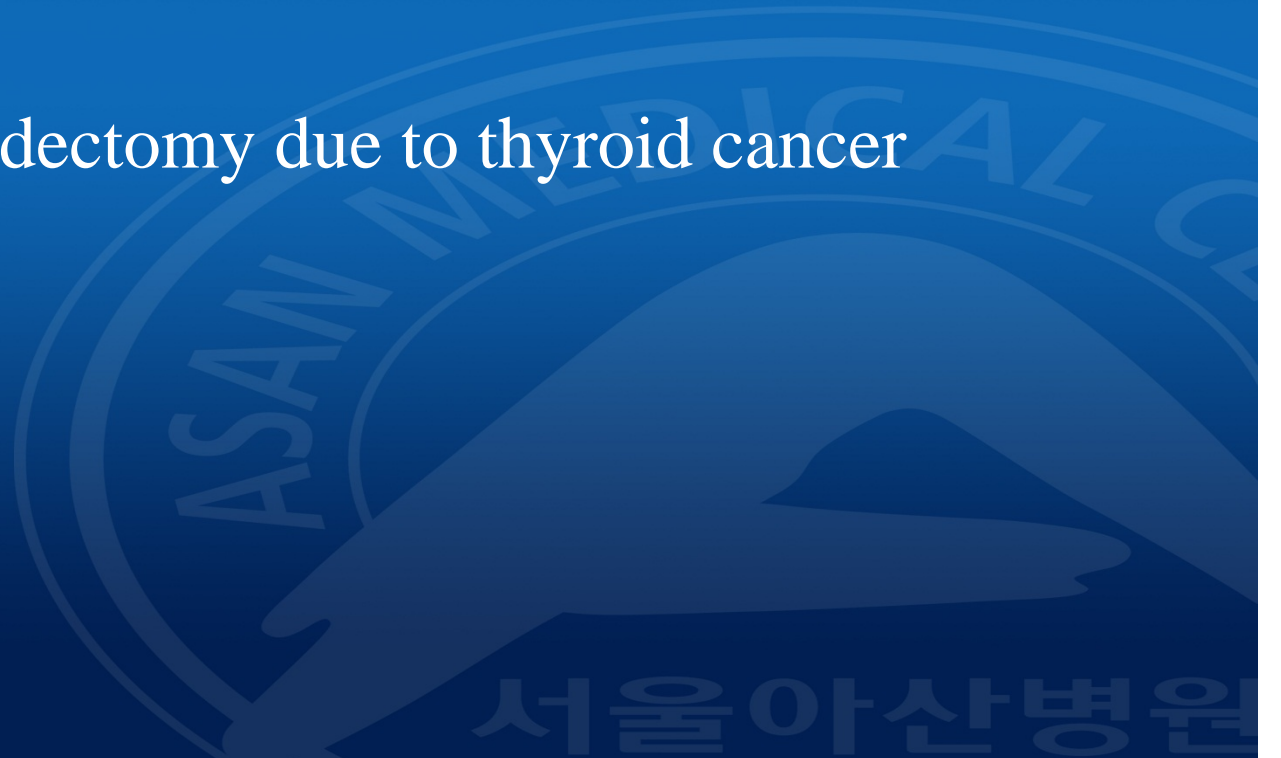
#1. Rt. pleuritic chest pain

#2. Rt. pleural effusion

#3. ADA elevation

#4. Leukocytosis

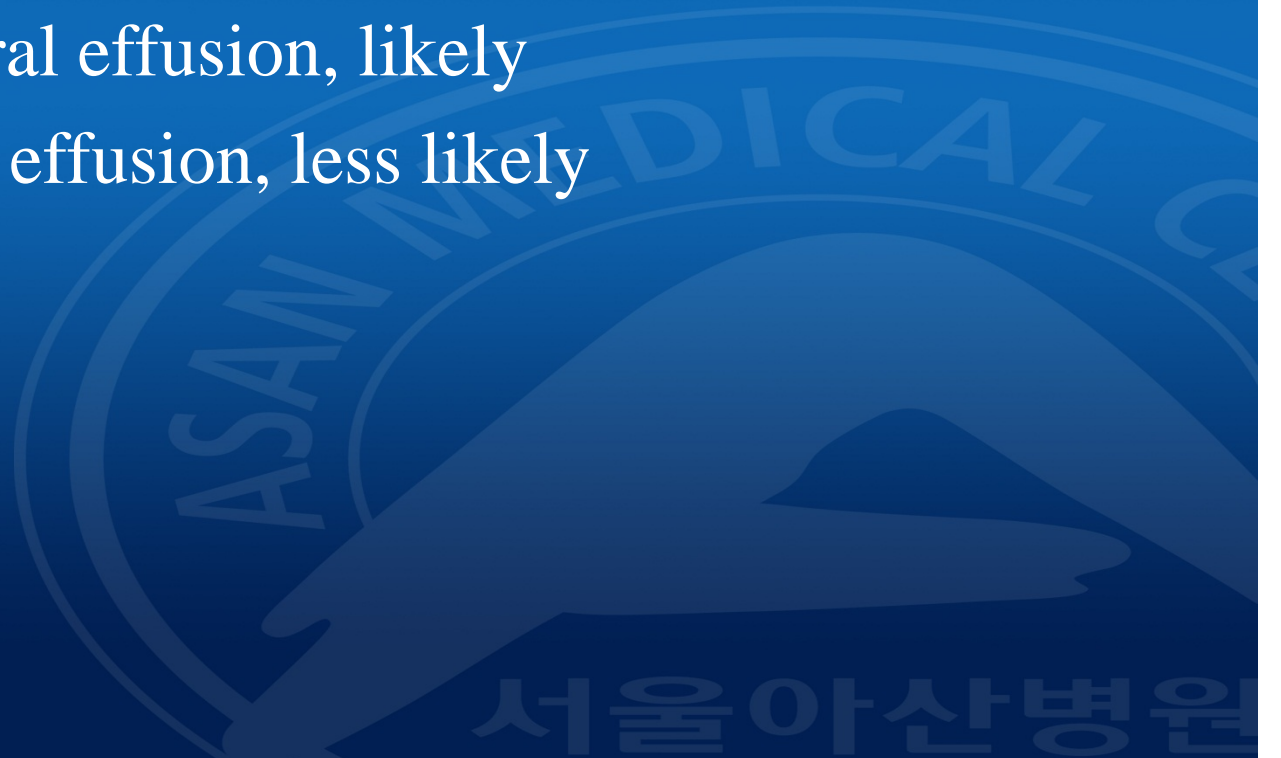
#5. s/p total thyroidectomy due to thyroid cancer



# Initial Assessment

#1, #2, #3, #4

1. TB pleurisy, likely
2. Malignant pleural effusion, likely
3. Parapneumonic effusion, less likely



# Plan

## Diagnostic plan

Sputum S/C, AFB S/C, cytology

Thoracentesis (pleural fluid analysis, pH, protein, LD, glucose, albumin, ADA, AFB smear and culture, cytology )

Chest CT scan

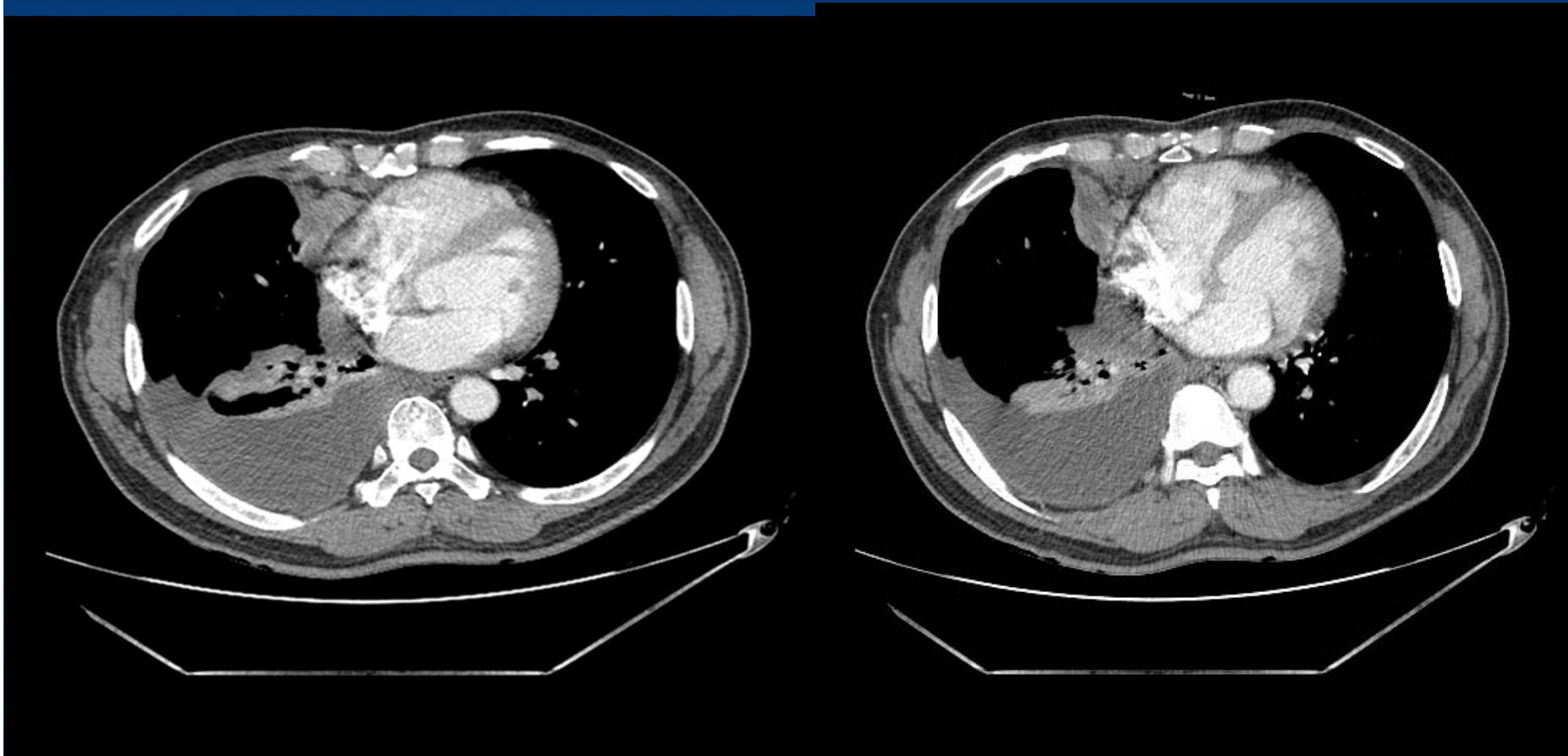
Outside PET-CT review

## Therapeutic plan

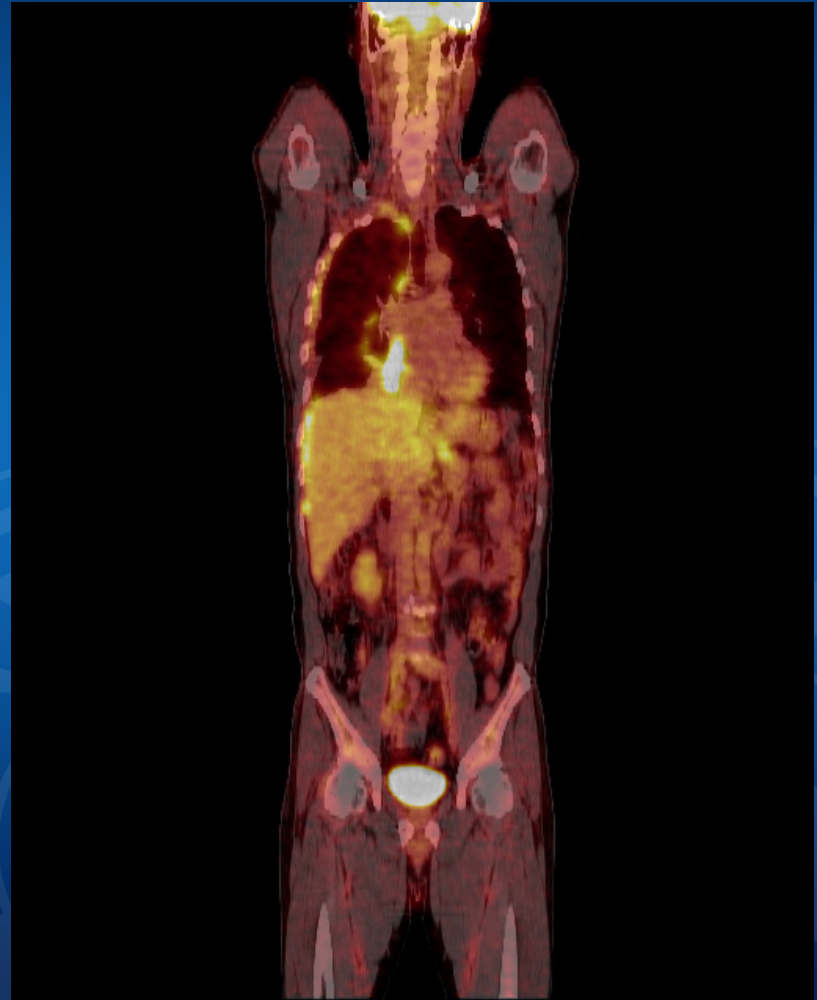
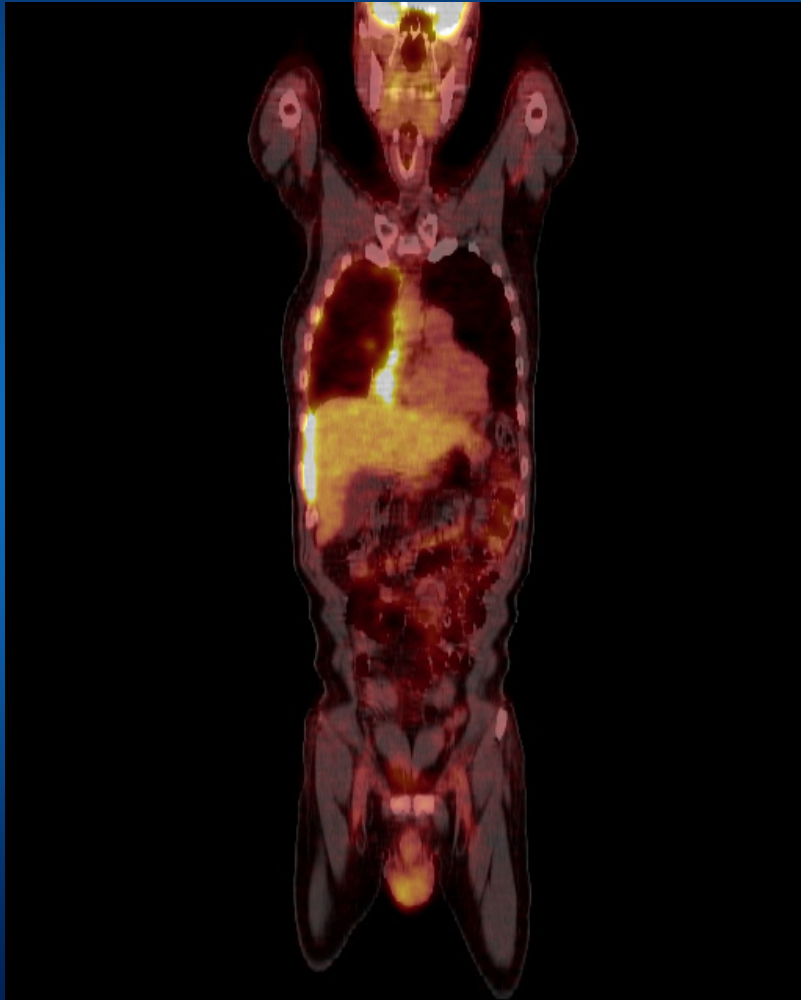
Anti-TB medication 유지



# Chest CT scan



# PET-CT



# HD #1

S> 관찰아요

O> Pleural fluid analysis

Color: mild turbid, blood tinged

RBC: 46000/uL, WBC: 8800/uL (neu: 5%, **lym:48%**, his: 40%, meso : 7%)

pH: 7.2, **Protein: 6.2 g/dL**, glucose: 116 mg/dL, **LD: 687 U/L**,

Albumin: 3.6 g/dL

Gram stain: negative, AFB smear : negative

**ADA: 67.3 U/L**

A> #1. TB pleurisy

#2. malignant pleural effusion

P> Pleural fluid cytology, pleural fluid TB-PCR

Anti-TB medication 유지

# HD #2

S> 특별히 불편한 건 없어요.

O> Pleural fluid TB-PCR: negative

Pleural fluid cytology with cell block: metastatic adenocarcinoma

A> #1. Malignant pleural effusion, more likely

#2. TB pleurisy, possible

P> VATS biopsy



# HD#7

S> 검사 결과는 언제 나오나요?

O>

Rt. pleural VATS biopsy

pleural cavity: pleura의 whole field에 diffuse nodule lesion이 퍼져 있음

Frozen Bx: epithelioid malignant cell → mesothelioma와 adenocarcinoma와의 감별이 어려움

A>

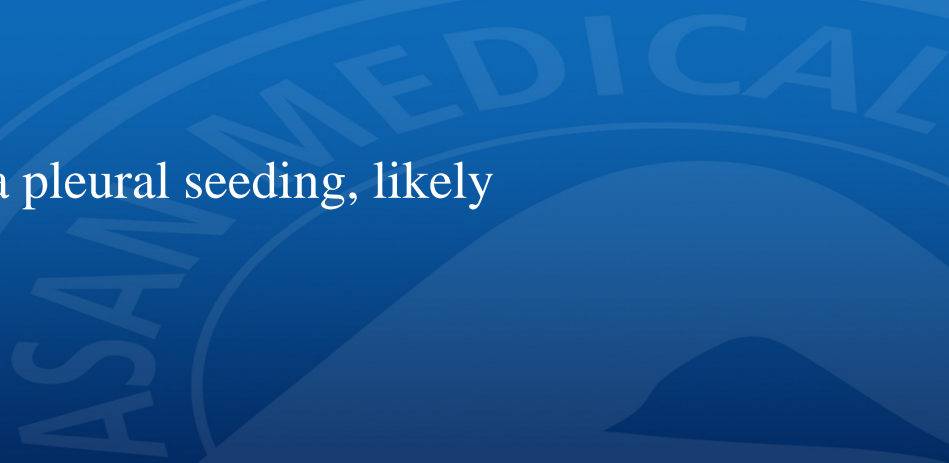
#1. lung cancer, adenocarcinoma pleural seeding, likely

#2. Mesothelioma, likely

#3. TB pleurisy, less likely

P>

Permanent biopsy 결과 기다리기



# HD #12, POD #5

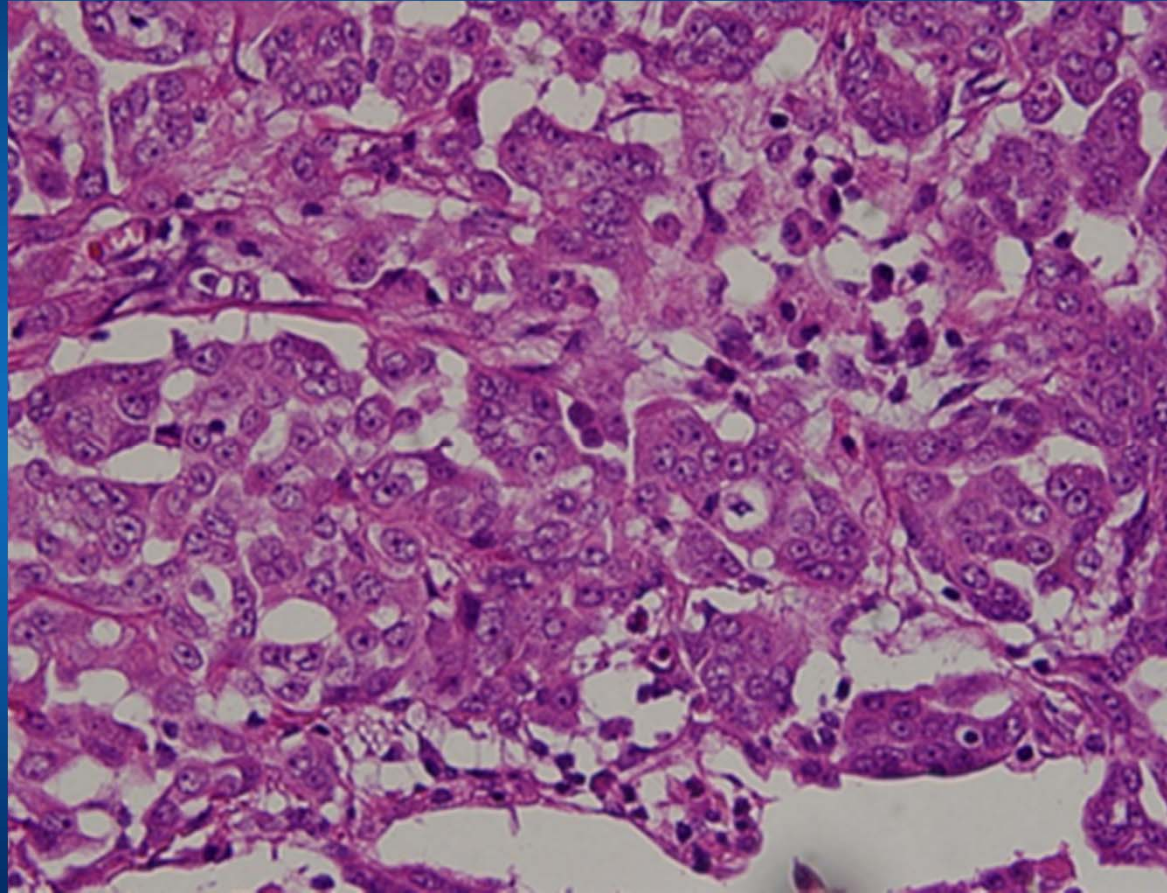
O>Pleura: malignant mesothelioma, epithelioid type

A> Malignant mesothelioma

P> Surgery

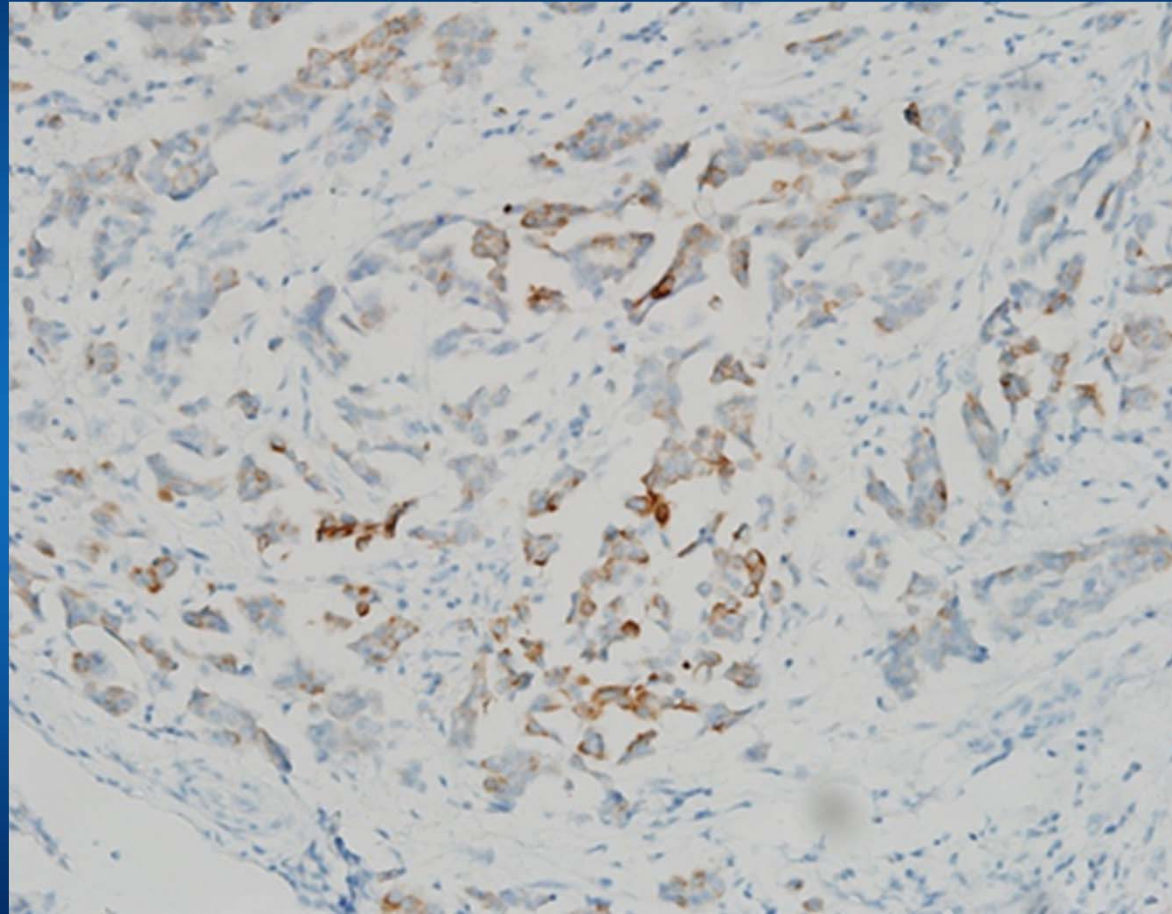


# Pathology



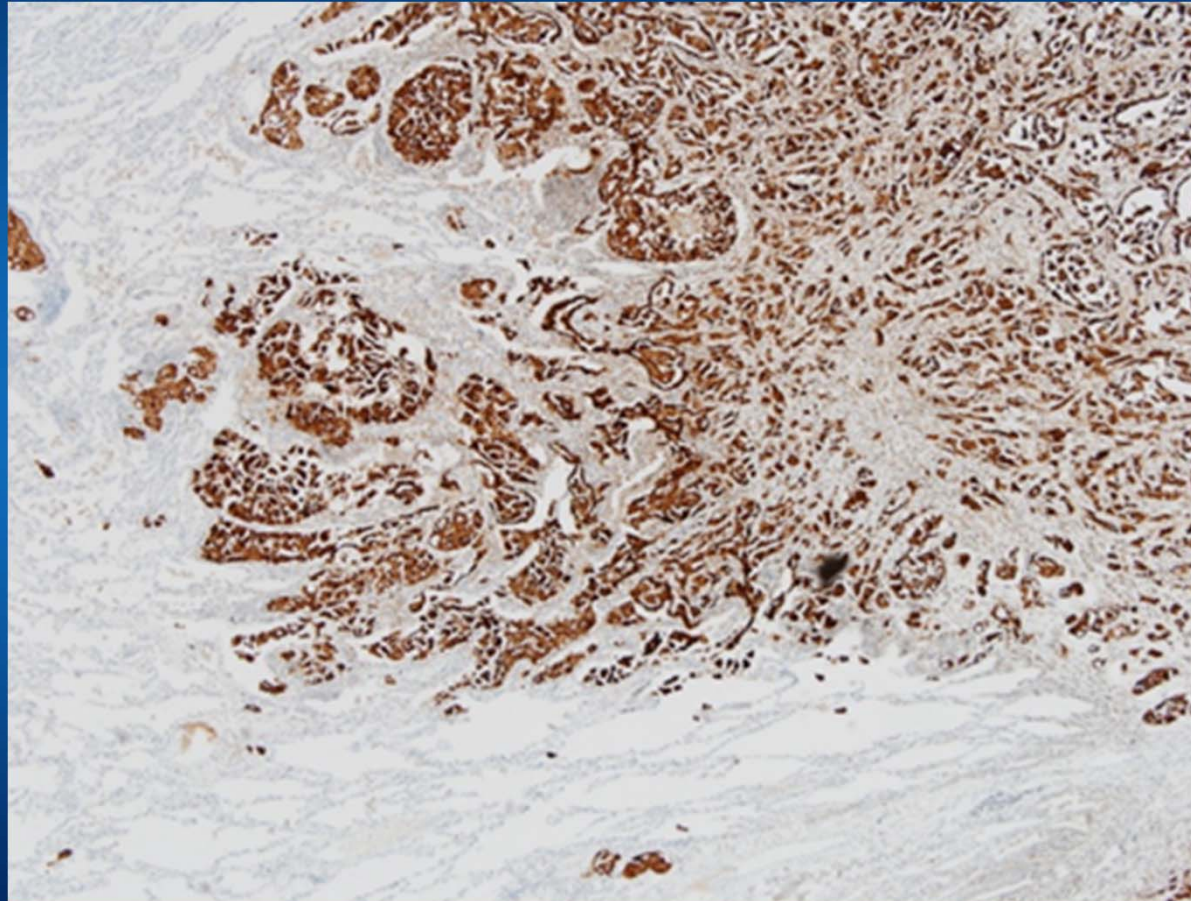
Epithelioid feature malignant cell

# Pathology



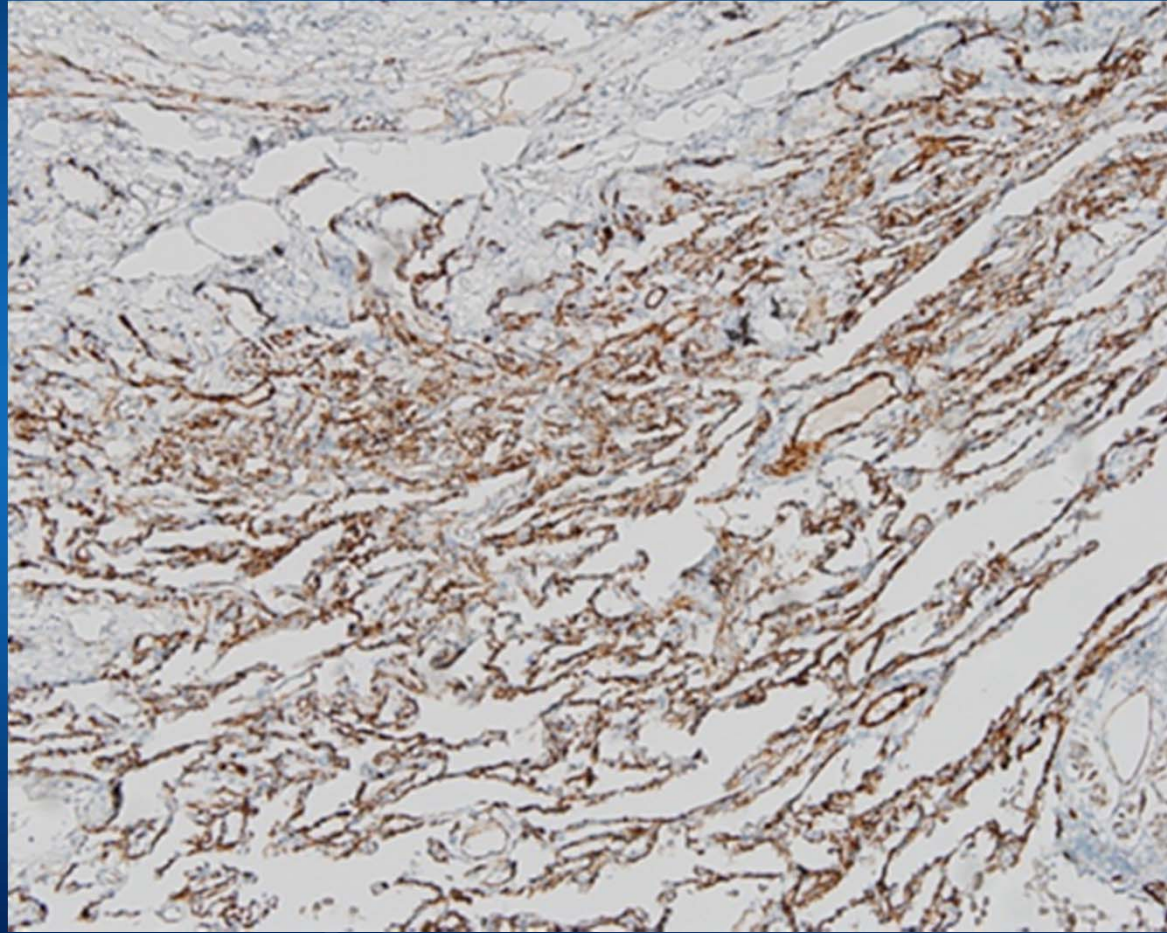
Positive immunohistochemical staining with CK5/6

# Pathology



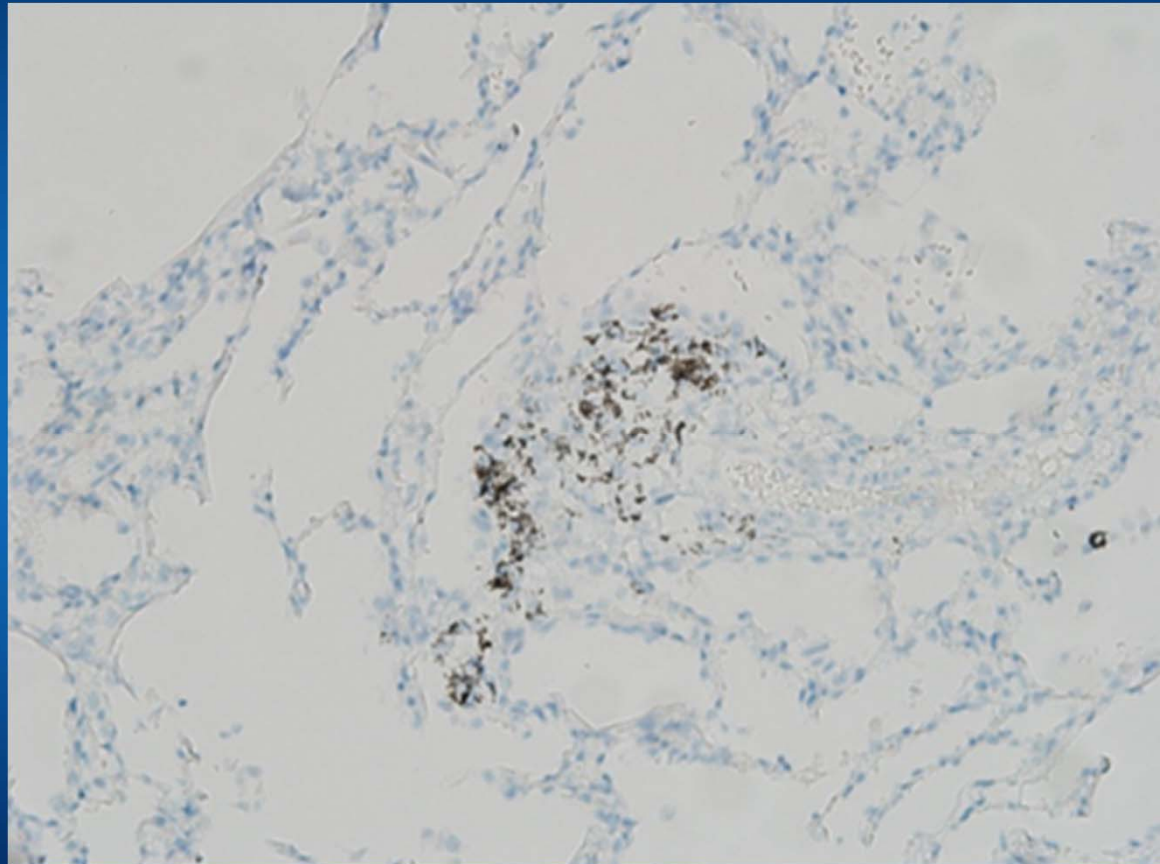
Positive immunostaining with calretinin

# Pathology



Positive immunohistochemical staining with WT-1

# Pathology



**Weakly positive immunohistochemical staining with D2-40**

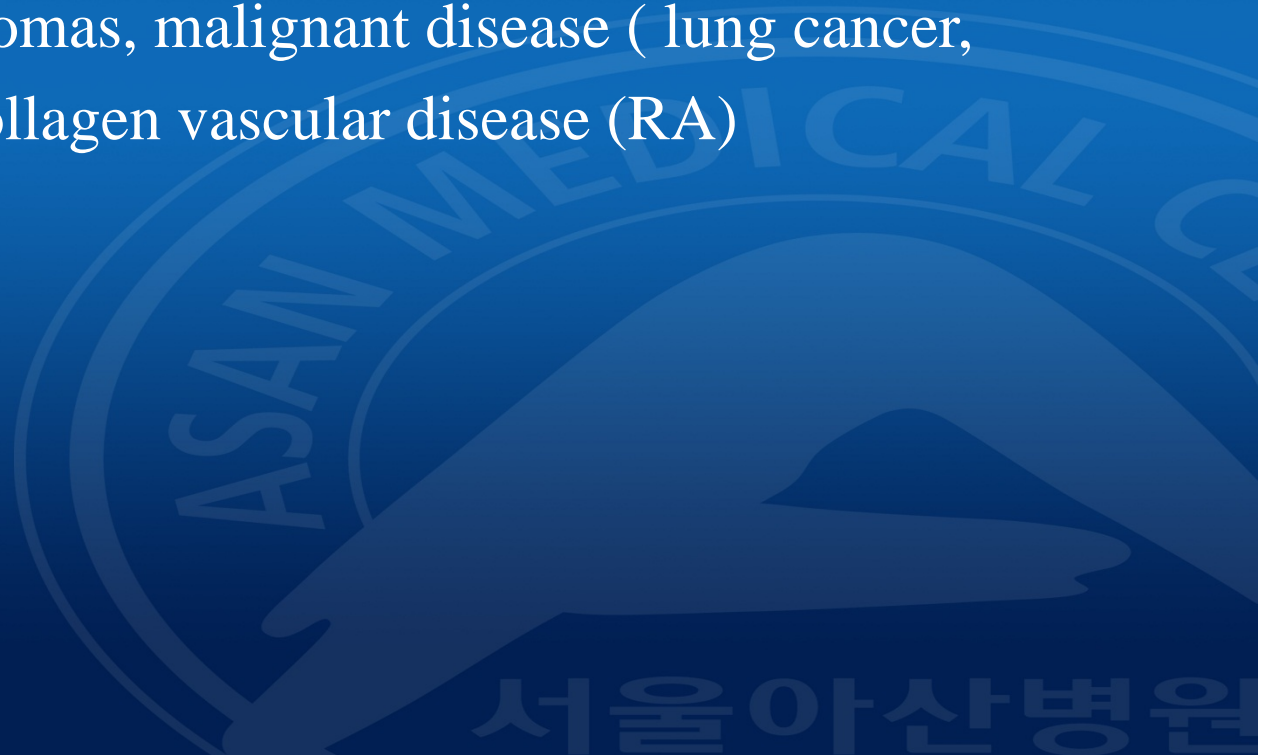
# ADA

- Enzyme involved in purine catabolism
- Present in abundance in lymphocytes
- Lymphocytic differentiation and proliferation



# Pleural fluid ADA

- >40 IU/L: 81-100% sensitivity and 83-100% specificity for TB pleurisy
- Other condition with ADA elevation in pleural fluid  
Empyema, lymphomas, malignant disease (lung cancer, mesothelioma), collagen vascular disease (RA)



# ADA elevation in nontuberculous pleural effusion

- 7/410 (1.71%): nontuberculous lymphocytic pleural fluid >40IU/L  
2: bronchogenic carcinoma, 2: complicated parapneumonic effusion,  
1: lymphoma, 1: mesothelioma, one: idiopathic  
*(Eur Respir J 2003; 21: 220-224)*
- Three cases of malignant pleural mesothelioma misdiagnosed as  
Tuberculous pleurisy  
1 case: 52/M, Rt. side chest pain  
pleural fluid analysis: WBC 2,016/uL (neu: 35%, lym: 65%), ADA 42 IU/L  
*(Tuberc Respir Dis 2007; 62: 323-330)*