대한결핵 및 호흡기학회 심포지움
Case - M/71

2015.05.11

서울아산병원
전임의 박순영

- Chief complaint
  - Dyspnea, MRC grade 3 (onset: 2 weeks ago)
- Present illness
  - 고혈압 외에 특이 병력 없던 환자로, 평소 등산을 자주 함. 2주 전부터 빨리 걷거나 등산 시 호흡곤란 발생함. 1주 전부터 자세를 바꿀 시에도 호흡곤란 있어 내원함.

- Past history
  - Hypertension (+) : on amlodipine 5mg QD
    Retinal artery occlusion (2009년 1월)
- Social history
  - 흡연 : 40갑년, 8년 전 금연
  - 음주 : 소주 반 병/주 * 50년
  - 직업 : 건설현장 일용직

- Review of systems
  - General
    - weight loss(-), easy fatigability(-), fever(-), chilling(-)
  - Cardiovascular
    - **Chest discomfort(+)**, palpitation(-), orthopnea(-)
  - Respiratory
    - **Cough/sputum(+/+)**;mild, scanty yellowish, hemoptysis(-)

- Physical examination
  - Vital signs

    123/78mmHg - 89/min - 20/min - 36.5℃
  - Chest
    - Symmetric expansion without retraction
    - No accessory muscle use
    - Clear breathing sound without crackle/wheezing
    - **Decreased breath sound in left lower chest wall**

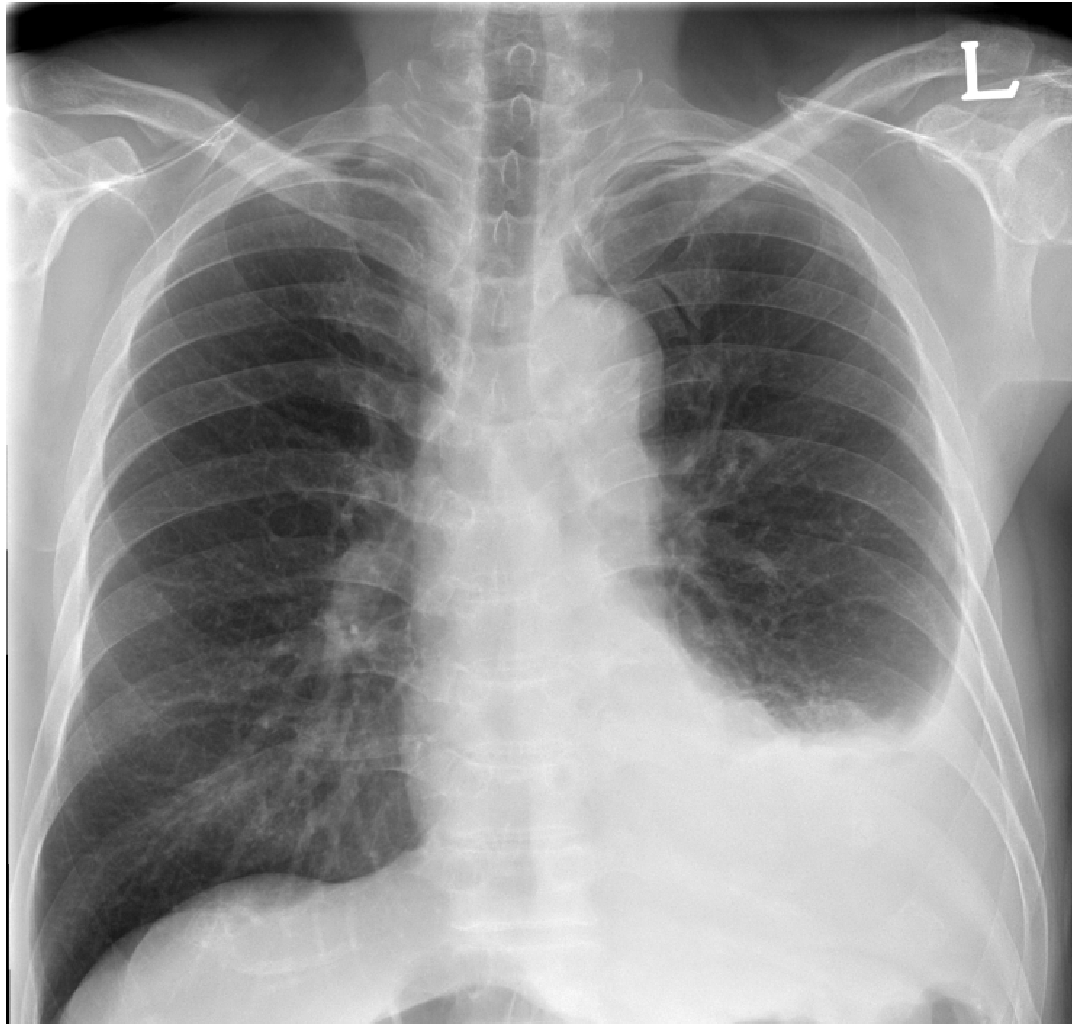
Initial laboratory data

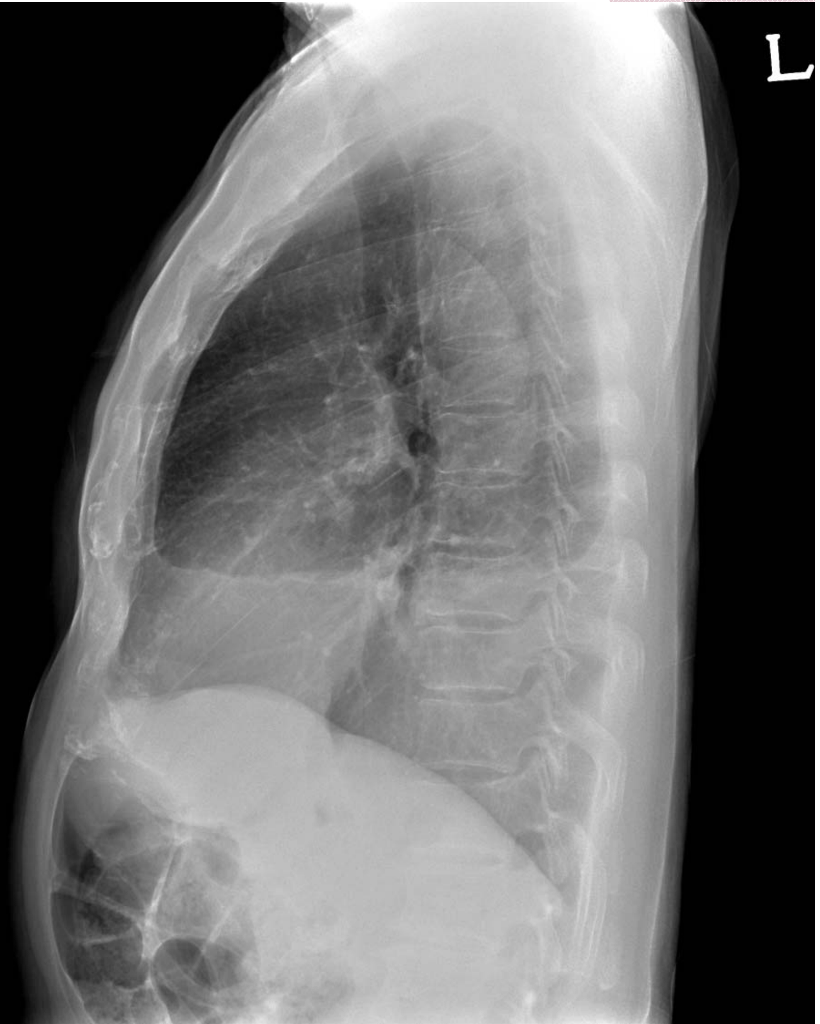
- CBC
  - 7,100/uL-14.9g/dL-298,000/uL
- Chemistry
  - BUN/Cr 24/0.79 mg/dL
  - Protein/Alb 7.1/3.6 g/dL
  - AST/ALT 21/14 IU/L ALP 87 IU/L T.Bil 0.5 mg/dL
- Electrolyte
  - Na/K/Cl/Total CO2 137/4.3/103/22.8 mmol/L
- Acute phase reactants
  - CRP 2.41 mg/dL
- Coagulation
  - PT(%) 97% PT(INR) 1.03 aPTT 28.8 sec
  - D-dimer 1.01 ug/mL FEU
- ABGA
  - pH 7.43 pCO2 39 mmHg pO2 77 mmHg

    Base excess 1.6

    Bicarbonate 26

Chest X-ray





Initial assessments and plan

#1. Pleural effusion, left

r/o malignant pleural effusion

r/o tuberculous pleurisy

r/o parapneumonic effusion

Chest left decubitus X-ray, Chest CT

Diagnostic thoracentesis, Pleural fluid analysis

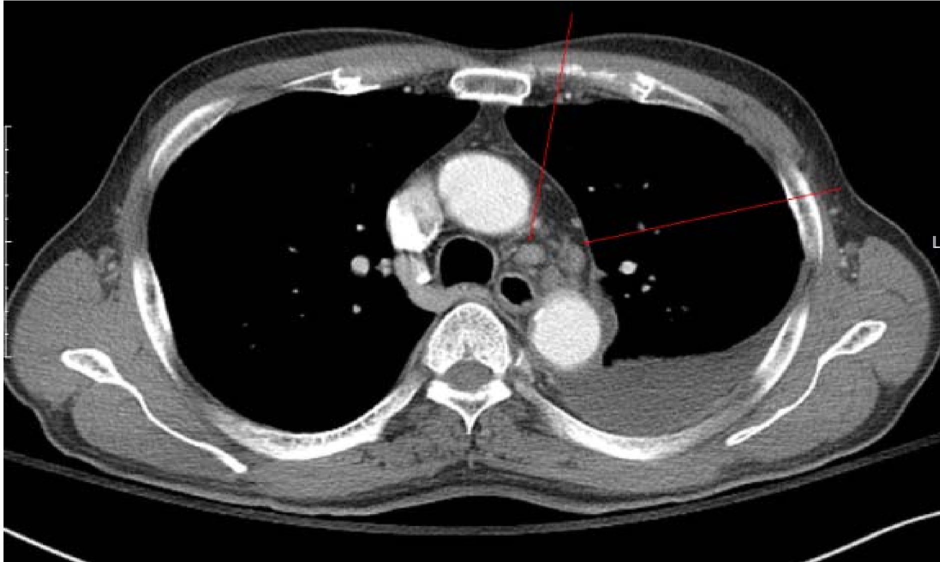
Sputum culture/Gram stain, AFB/culture

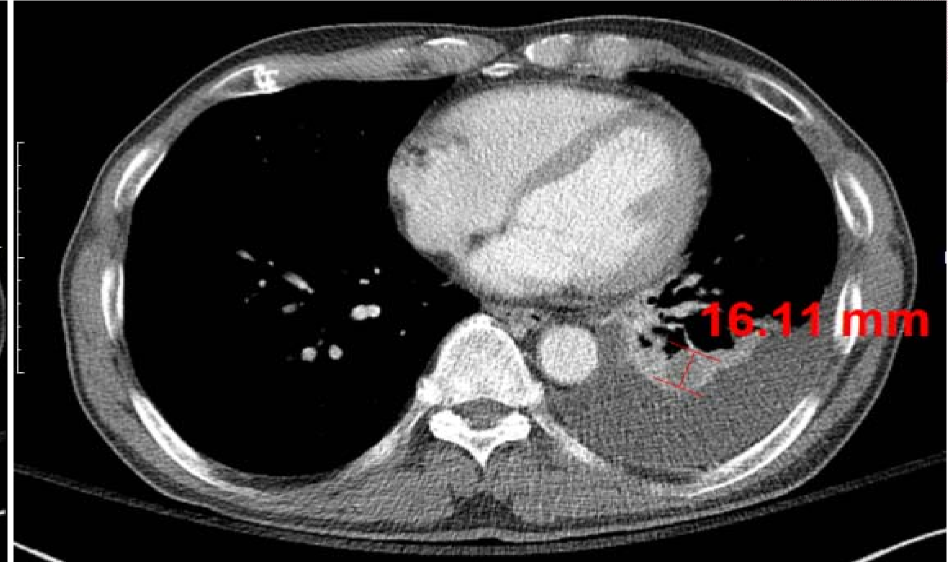
▶ Pleural fluid analysis

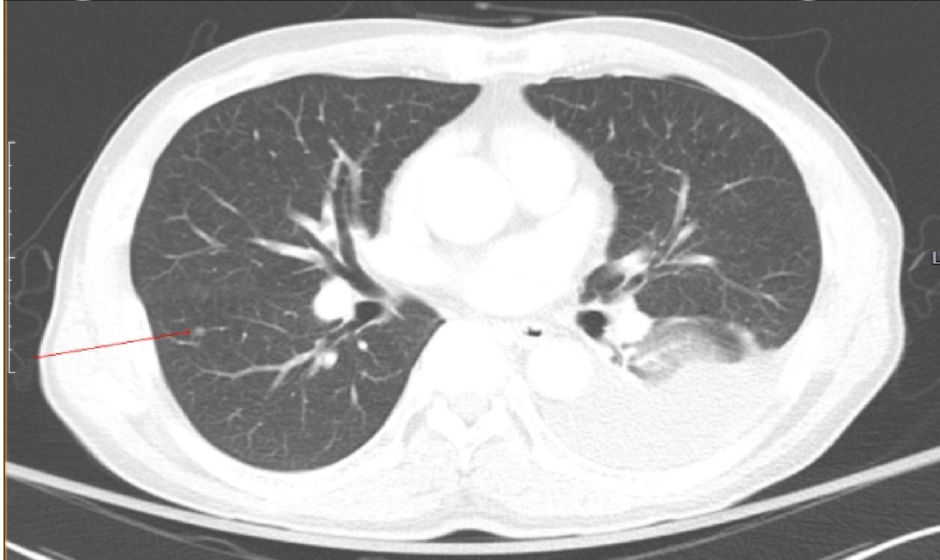
Pleural fluid	
pH	7.0
RBC	190 /uL
WBC	1800 /uL
Neutrophil	21%
Lymphocyte	**34%**
Histiocyte	33%
Mesothelial cell	**10%**
Basophil	2%

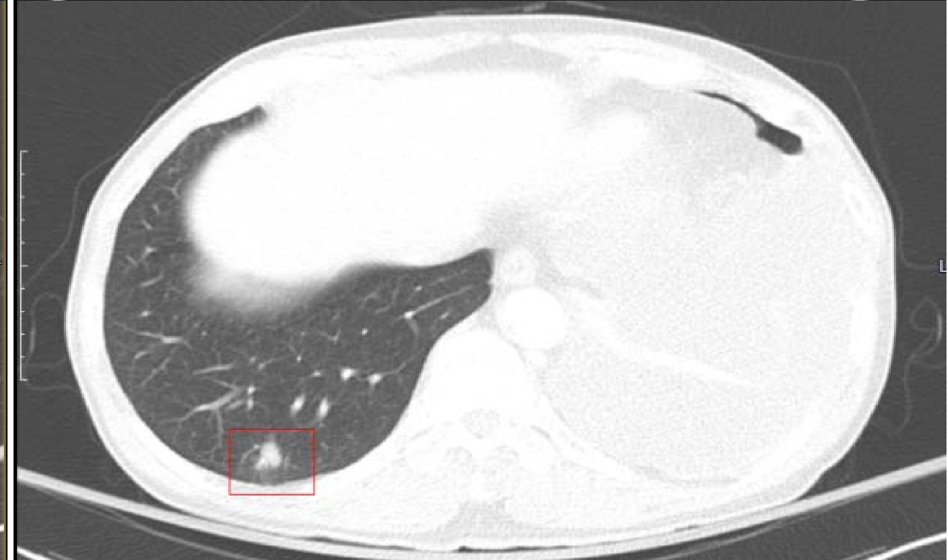
	Pleural	Serum
Proterin (g/dL)	**5.2**	7.1
LD (IU/L)	178	187
Glucose (mg/dL)	103	108
Albumin (g/dL)	3.5	3.6
ADA (U/L)	**70.3**	

Chest CT









Progress

O> Diagnostic thoracentesis :

lymphocyte/Neutrophil ratio > 0.75 with high ADA

Chest CT with enhance :

multiple lung nodule with mediastinal lymphadenopathy

A> Lung cancer with multiple metastasis, and pleural seeding, most likely

Tuberculous pleurisy, possible

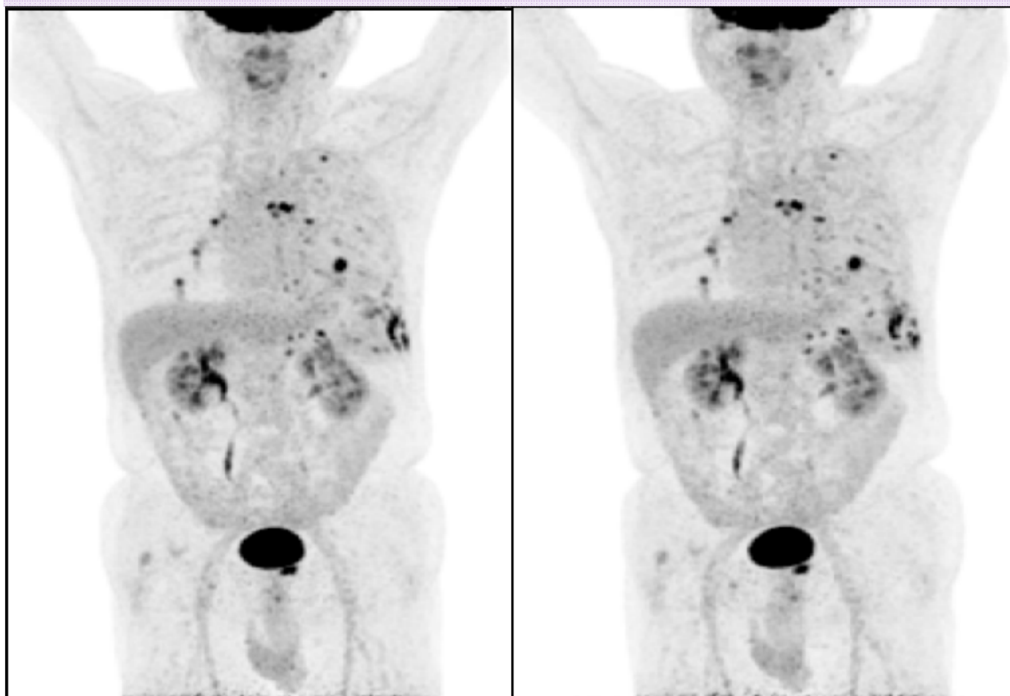
Parapneumonic effusion, less likely

P> BFS, EBUS

Pleural fluid cytology with cell block

Staging work up: Brain MR, bone scan, fusion whole body PET

PET CT



Progress

O> PET : Hypermetabolic nodule in collapsed lung LLL

Focal hypermetabolic lesion in prostate gland (SUV 9.4)

→ r/o Prostate cancer

PSA : 3.3 ng/mL

A> Lung cancer with multiple lung to lung, LN metastases, and pleural seeding

Tuberculous pleurisy

Prostate cancer, double primary

Prostatitis

P> Tissue confirm: EUS-guided or EUBS-guided LNs biopsy

Ultrasound guided prostate biopsy

Progress

O>BFS : No endobronchial lesion

EBUS – TBNA :

LN #4L : Negative for malignancy, **chronic granulomatous inflammation**

Pleural fluid adenosine deaminase : **70.3 U/L**

Pleural fluid Lymphocyte/Neutrophil ratio : **1.61**

Pleural fluid Mesothelial cell : **10 %**

Pleural fluid M.Tb PCR + Hybridization : **Negative**

A> Tuberculous pleurisy > Malignant pleural effusion

Prostate cancer

P> Anti-TB medication (HREZ) 시작

Prostate Bx. 결과 확인

Progress

O> Prostate biopsy

Lt apex : **Granulomatous prostatitis** with

1) chronic active inflammation

2) fungal yeasts : morphologically **cryptococcal species**

3) no necrosis

P> EUBS biopsy review for ruling out cryptococcal infection

CSF exam for ruling out cryptococcal meningitis

serum cryptococcal Ag.

Progress

O> Prostate Bx. : **Granulomatous prostatitis with cryptococcus**

EBUS-TBNA : **A few yeast-form fungi**

Serum, Cryptococcal Ag : Positive, titer 1:4

CSF tapping : Negative

HIV Ag & Ab : Negative

Syphilis reagin test - high quality : Nonreactive

A> Disseminated cryptococcosis, involving lung and prostate

P> PO fluconazole 400mg QD, at least for 6 months

Prostate Bx. :
cryptococcosis

Thoracentesis :
Exudate, ADA 70.3

Serum Cryptococcal Ag +

EBUS Bx. :
Chronic
granulomatous
inflammation

PET :
Hot uptake in
prostate

Chest CT :
r/o lung cancer

EBUS-TBNA review :
cryptococcosis

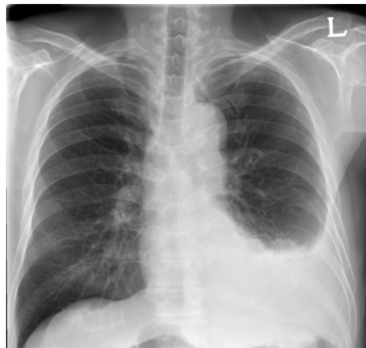
Dyspnea with
Pleural effusion

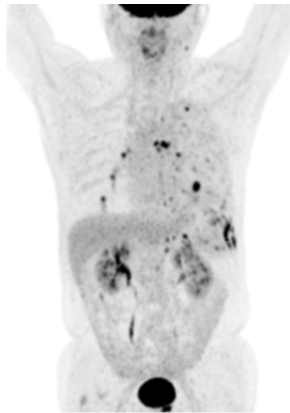
Prostate Bx.

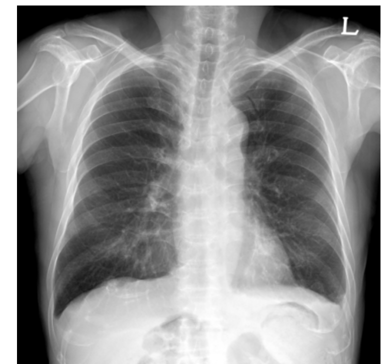
Tb medication
start

Fluconazole start

Decreased
pleural effusion







REVIEW

- Cryptococcosis
  - Mild focal pulmonary infection ~ life-threatening disseminated infection or meningitis
- Immunocompromised patient
  - HIV

    Cryptococcal Pleuritis Containing a High Level of Adenosine Deaminase in a Patient with AIDS: A Case Report

    Respiration 2010;79:153-156.
  - Transplant, Malignancy, Cirrhosis, CKD
- Immunocompetent host

Clinical Practice Guidelines for the Management of Cryptococcal Disease: 2010 Update by the Infectious Diseases Society of America

Table 4. Antifungal Treatment Recommendations for Cryptococcal Meningoencephalitis in Non–Human Immunodeficiency Virus–Infected and Nontransplant Patients

Regimen	Duration	Evidence
Induction therapy		
AmBd (0.7–1.0 mg/kg per day) plus flucytosine (100 mg/kg per day)	≥4 weeks[a,b]	B-II
AmBd (0.7–1.0 mg/kg per day)[c]	≥6 weeks[a,b]	B-II
Liposomal AmB (3–4 mg/kg per day) or ABLC (5 mg/kg per day) combined with flucytosine, if possible[d]	≥4 weeks[a,b]	B-III
AmBd (0.7 mg/kg per day) plus flucytosine (100 mg/kg per day)[e]	2 weeks	B-II
Consolidation therapy: fluconazole (400–800 mg per day)[f]	8 weeks	B-III
Maintenance therapy: fluconazole (200 mg per day)[b]	6–12 months	B-III

NOTE. ABLC, amphotericin B lipid complex; AmB, amphotericin B; AmBd, amphotericin B deoxycholate.

[a] Four weeks are reserv
nosuppression, and for wh
2 weeks, lipid formulations
[b] Fluconazole is given at
[c] For flucytosine-intolera
[d] For AmBd-intolerant pa
[e] For patients who have
severe immunocompromis
[f] A higher dosage of fluc

Table 5. Antifungal Treatment Recommendations for Nonmeningeal Cryptococcosis

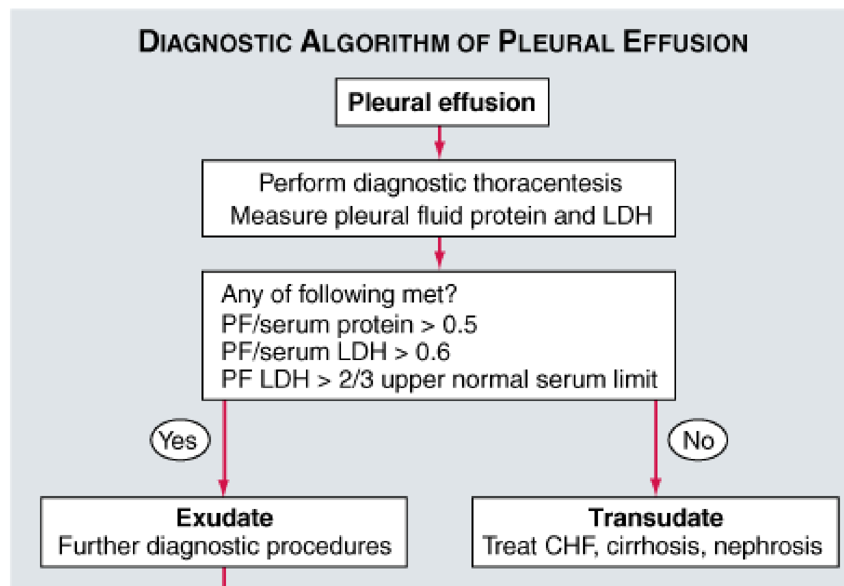
Patient group	Initial antifungal regimen	Duration	Evidence
Immunosuppressed patients and immunocompetent patients with mild-to-moderate pulmonary cryptococcosis	Fluconazole (400 mg per day)	6–12 months	B-III
Immunosuppressed patients[a] and immunocompetent patients with severe pulmonary cryptococcosis	Same as CNS disease	12 months	B-III
Patients with nonmeningeal, nonpulmonary cryptococcosis			
Patients with cryptococcemia	Same as CNS disease	12 months	B-III
Patients for whom CNS disease has been ruled out with no fungemia, with a single site of infection, and with no immunosuppressive risk factors	Fluconazole 400 mg per day	6–12 months	B-III

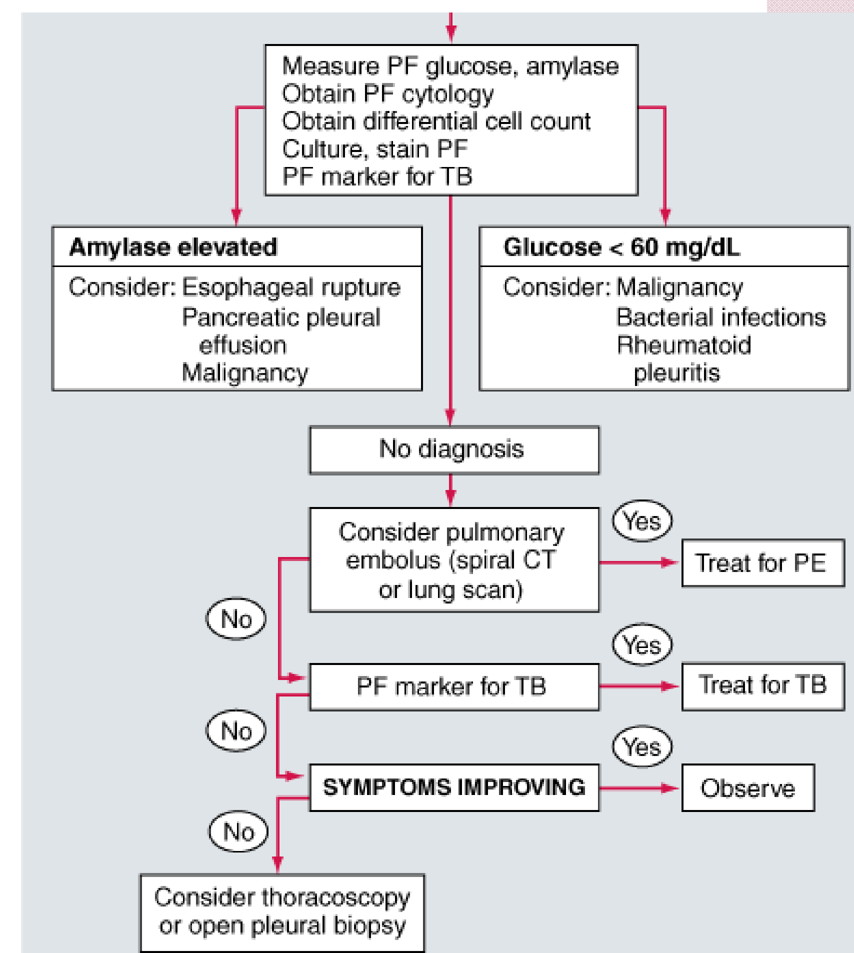
NOTE. CNS, central nervous system.

[a] Should directly rule out CNS disease with lumbar puncture.

감사합니다.

Diagnosis of Pleural Effusion





Diagnosis of Pleural Effusion

Cell count and differential

- **Neutrophile** predominance : indicates an acute inflammatory process

  Parapneumonic effusion

  Pulmonary embolism

  Secondary effusion d/t panctreatitis

- Mononuclear cell predominance : indicate a chronic process

  Lymphocyte predominance

  Tuberculous pleuritis

  Malignant effusion

  Rheumatoid pleurisy

- **Eosinophila** (> 10%) : Blood or air in the pleural space

- **Mesothelial cells** (> 5%) : Excludes tuberculous pleurisy