

PLEURAL EFFUSION

PATIENT PROFILE

- Name: Mr. K
- Age: 48 years
- Sex: Male
- Occupation: Farmer
- Religion: Hindu
- Address: _____ [VERIFY]
- Marital Status: Married
- Date of Admission: _____
- Date of Examination: _____
- Socioeconomic Status: Lower-middle class (occupation, education, housing, income)



CHIEF COMPLAINTS

- Progressive breathlessness ×2 months
- Dry cough with scanty expectoration ×1.5 months
- Right-sided pleuritic chest pain ×1 month
- Low-grade fever ×3 weeks



H.O.P.I.

- The patient was apparently well 2 months ago, when he developed progressive breathlessness. Initially present on moderate exertion (NYHA Grade II), it worsened over weeks to NYHA Grade III, and currently occurs even on mild exertion.
- After 15 days of breathlessness (1.5 months ago), he developed cough. It was initially dry, later associated with scanty mucoid sputum. No hemoptysis, no postural variation.
- About 1 month ago, he developed right-sided chest pain, acute in onset, sharp, pleuritic in nature (aggravated by deep inspiration and coughing, relieved by lying on the affected side).
- For the last 3 weeks, he has also had low-grade intermittent fever, without chills, rigors, or night sweats.
- There is no history of orthopnea, paroxysmal nocturnal dyspnea, or wheezing. No recent weight loss or anorexia. No history of chest trauma.
- Negative History (with reasoning)
- No hemoptysis → argues against TB/malignancy.
- No significant weight loss/anorexia → makes malignancy/TB less likely.
- No orthopnea/PND → against cardiac failure.
- No wheeze → rules out asthma.
- No trauma → rules out hemothorax.



PAST HISTORY

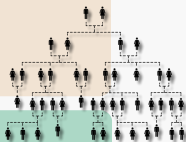
- No previous TB, asthma, COPD.
- No hypertension, diabetes, or IHD.
- No prior surgeries or hospital admissions.

PLEURAL EFFUSION



PERSONAL HISTORY

- Smoking: 20 pack-years (bidi), quit 5 years ago.
- Alcohol: Occasional.
- Diet: Mixed.
- Appetite: Decreased since illness.
- Sleep: Disturbed due to cough and dyspnea.
- Bowel & bladder: Normal.
- Occupation: Farmer; no industrial exposures.



FAMILY HISTORY

- No family history of TB, asthma, COPD, or malignancy.
- Non-contributory otherwise.

PROBABLE

PROBABLE DIAGNOSIS

Right-sided pleural effusion – most likely tubercular..



SUMMARY

A 48-year-old farmer, ex-smoker, presents with progressive dyspnea ×2 months, dry cough ×1.5 months, right-sided pleuritic chest pain ×1 month, and low-grade fever ×3 weeks. No hemoptysis, weight loss, or cardiac symptoms. Likely right-sided pleural effusion (probable tubercular etiology). Differentials include parapneumonic effusion, malignancy, and CHF-related transudate.



DIFFERENTIALS

- Tubercular pleural effusion – common in endemic areas, subacute course.
- Parapneumonic effusion – bacterial pneumonia-related.
- Malignant pleural effusion – recurrent, hemorrhagic.
- Empyema thoracis – pus in pleural cavity.
- Transudative effusion (CHF, nephrotic, cirrhosis) – systemic, usually bilateral.

GPE

- Patient examined with due consent.
- Conscious, cooperative, oriented.
- Build & nourishment: Moderate.
- Pallor: Absent.
- Cyanosis: Absent.
- Clubbing: Absent (unless malignant cause).
- Pedal edema: Absent.
- Lymph nodes: Not enlarged.
- Vitals:
- Pulse: 100/min, regular
- BP: 118/74 mmHg
- RR: 28/min (tachypneic)
- Temp: 100 °F (low grade)
- SpO₂: 91% on room air
-

SYSTEMIC EXAMINATION

1

INSPECTION

- Reduced chest movements on right.
- Intercostal fullness on right side.
- Trachea shifted left (large effusion).

2

PALPLATION

- Trachea shifted left.
- Expansion ↓ on right.
- Tactile vocal fremitus ↓/absent.

3

PERCUSSION

- Stony dull note over right lower zones.
- Upper border curved upwards (meniscus sign).

4

AUSCULTATION

- Breath sounds ↓/absent over effusion.
- Above fluid → bronchial breathing.
- Vocal resonance ↓/absent.
- Pleural rub may be heard early.

5

OTHER SYSTEMS

- Cardiovascular System
- Apex beat shifted left (large effusion).
- S1, S2 normal; tachycardia.
- CNS
- No focal deficits. Hypoxemia may cause irritability/confusion.
- Abdomen
- Soft, non-tender.
- Liver may be pushed down by right effusion.

VIVA QUESTIONS AND ANSWERS

Q1. Define pleural effusion.

Ans: Abnormal accumulation of pleural fluid (>15–20 ml).

Q2. Causes of pleural effusion?

Ans:

- Transudates: CHF, cirrhosis, nephrotic syndrome.
- Exudates: TB, pneumonia, malignancy, pancreatitis, RA.

Q3. How do you differentiate transudate vs exudate?

Ans: By Light's criteria:

- Pleural fluid protein/serum protein >0.5
- Pleural fluid LDH/serum LDH >0.6
- Pleural fluid LDH >2/3 upper limit of serum LDH.

Q4. What is the most common cause of unilateral effusion in India?

Ans: Tuberculosis.

Q5. What are the classical physical signs of pleural effusion?

Ans: Stony dull percussion note, ↓ /absent breath sounds, ↓ tactile vocal fremitus, tracheal shift to opposite side (if large).

Q6. What are the radiological signs of pleural effusion?

Ans: Homogenous opacity with meniscus sign, blunting of costophrenic angle, mediastinal shift away (large effusion).

Q7. What is empyema thoracis?

Ans: Presence of pus in the pleural cavity, usually complicating pneumonia or TB.

Q8. What is chylothorax?

Ans: Milky pleural effusion due to thoracic duct rupture/obstruction, rich in triglycerides.

Q9. What is pseudochyloous effusion?

Ans: Long-standing effusion with cholesterol crystals, seen in TB or RA.

Q10. What investigations confirm pleural effusion?

Ans: CXR, USG chest, diagnostic thoracentesis with pleural fluid analysis (protein, LDH, ADA, cytology, culture, AFB).

Q11. What is the significance of ADA in pleural fluid?

Ans: ADA >40 U/L strongly suggests tubercular effusion.

Q12. What is the role of pleural fluid cytology?

Ans: Detects malignant cells in suspected cancer-related effusion.

Q13. What are the causes of hemorrhagic pleural effusion?

Ans: Malignancy, trauma, TB, pulmonary embolism/infarction.

Q14. When is intercostal tube drainage indicated?

Ans: Empyema, frank pus, massive hemothorax, or large loculated effusions.

Q15. What is trapped lung?

Ans: Lung fails to re-expand after aspiration due to pleural fibrosis/adhesions.

Q16. What is pleurodesis and when is it done?

Ans: Obliteration of pleural space using sclerosing agents (talc, doxycycline); done in recurrent malignant effusions.

Q17. How do you differentiate pleural effusion from lung consolidation clinically?

Ans:

- Effusion → stony dullness, ↓ breath sounds, ↓ vocal resonance.
- Consolidation → dull percussion, bronchial breathing, ↑ vocal resonance.

Q18. What are the complications of pleural effusion?

Ans: Empyema, fibrothorax, bronchopleural fistula, respiratory failure.

Q19. What is the role of thoracoscopy?

Ans: Diagnostic + therapeutic; allows pleural biopsy and drainage in undiagnosed/recurrent effusions.

Q20. How do tubercular and malignant effusions differ clinically?

Ans: TB effusion → younger age, febrile, resolves with ATT.

Malignant effusion → older age, recurrent, hemorrhagic, poor prognosis.

Q21. What is hydropneumothorax?

Ans: Presence of both air and fluid in pleural cavity (air-fluid level on CXR).

Q22. How much fluid can be safely aspirated in one sitting?

Ans: Maximum 1–1.5 liters, to prevent re-expansion pulmonary edema.



This pdf is not intended to replace any standard textbook so always go through textbooks first!

The sole purpose of this pdf is to make sure you can revise cases in a structured manner in 10-15 minutes!

Happy reading!

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