

INTRODUCTION

- Liquid-based studies are frequently used in the diagnostic workup of lung cancer
- However, their interpretation can be challenging in atypical clinical contexts, where they may
 - a) Reveal occult malignancy
 - b) Generate misleading results
 - c) Remain nondiagnostic in the presence of competing inflammatory or infectious processes

OBJECTIVE

We present three cases illustrating distinct diagnostic pitfalls of liquid-based studies in lung cancer

METHODS

DESIGN:

- Retrospective single-center
- Tertiary care center
- Bogotá, Colombia
- Descriptive retrospective case series

CASE SELECTION:

- Patients with lung cancer in whom a liquid-based specimen (pericardial fluid, cerebrospinal fluid, or bronchoalveolar lavage) played a decisive, misleading, or nondiagnostic role during the diagnostic workup.

DATA REVIEWED:

- Clinical records
- Cytologic and biochemical fluid analyses
- Imaging
- Histopathology
- Molecular testing for each case

ANALYSIS:

Cases were synthesized qualitatively to identify recurrent diagnostic pitfalls of liquid-based studies; no statistical testing was performed

DISCUSSION AND CONCLUSION

FIRST CASE:

- Pericardial cytology provided the earliest decisive clue to an unsuspected thoracic malignancy

SECOND CASE:

- A persuasive but discordant cerebrospinal fluid result delayed recognition of disease progression, underscoring the need to interpret isolated laboratory findings within the broader clinico-radiologic context

THIRD CASE:

- Bronchoalveolar lavage helped exclude infectious differential diagnoses but failed to establish malignancy despite advanced disease

Across all three cases, competing contextual factors, including pregnancy, inflammation, endemic infections, young age, and unusual imaging patterns, amplified the risk of anchoring bias and shaped the diagnostic trajectory

Awareness of the diagnostic pitfalls of liquid-based studies may help clinicians avoid anchoring bias, maintain suspicion for lung cancer in atypical presentations, and expedite definitive tissue diagnosis

REFERENCES & ACKNOWLEDGEMENTS

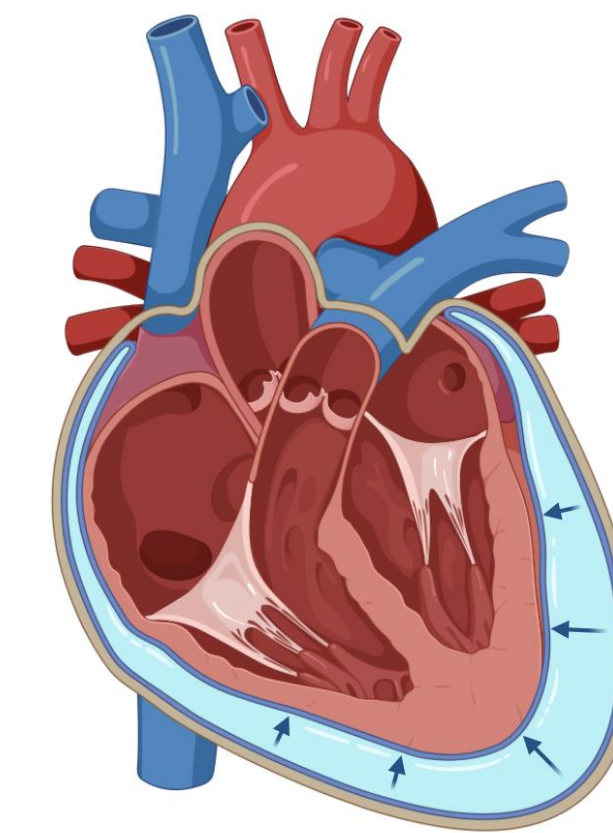
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No artificial intelligence tools were used in the development of the scientific content of this poster

RESULTS

REVEAL:

34-year-old pregnant at 28 weeks of gestation



PRESENTATION

Cardiac tamponade requiring emergent pericardiocentesis

LIQUID STUDY AND FINDING

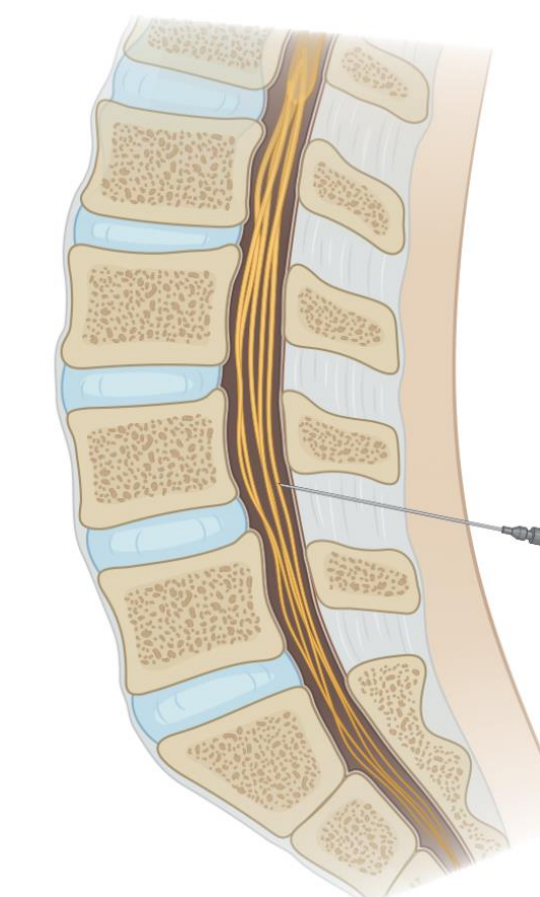
Pericardial fluid
Malignant epithelial cells, unexpectedly unveiling an aggressive, widely disseminated thoracic malignancy

FINAL DIAGNOSIS

Further evaluation confirmed EGFR exon 21-mutant pulmonary pleomorphic carcinoma with metastases to the central nervous system, bone, extrathoracic lymph nodes, and adrenal glands

MISLEAD:

81-year-old man with EGFR-mutant lung adenocarcinoma receiving osimertinib



PRESENTATION

Subacute onset of headache, asthenia, imbalance, and cranial neuropathic symptoms
Brain MRI with bilateral symmetric enhancement of the internal auditory canals and trigeminal nerves without diffuse leptomeningeal enhancement

LIQUID STUDY AND FINDING

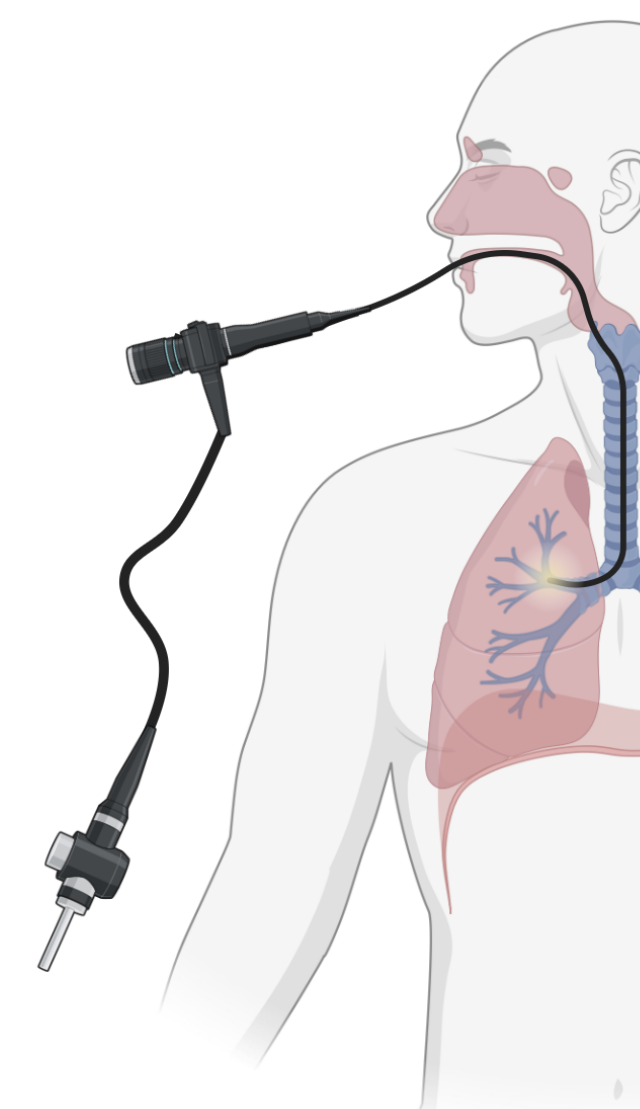
Cerebrospinal fluid
Lymphocytic pleocytosis, elevated protein, low glucose, and reactive VDRL (initial concern for neurosyphilis)

FINAL DIAGNOSIS

FTA-ABS testing was nonreactive, and multidisciplinary reassessment ultimately favored leptomeningeal disease progression

FAIL TO CLARIFY:

18-year-old never-smoker



PRESENTATION

Diffuse pulmonary micronodules and hilar adenopathy in a tuberculosis-endemic region

LIQUID STUDY AND FINDING

Bronchoalveolar lavage
Negative for infectious organisms, including mycobacterial studies. Rare atypical cells without definitive evidence of malignancy → Differential diagnosis broadened to sarcoidosis and lymphoma

FINAL DIAGNOSIS

Wedge resection established advanced non-mucinous lung adenocarcinoma with extensive lymphangitic spread and distant metastases.