

Elevation of d-Dimer without any evidence of VTE: What is Your Interpretation?

Om Joshi¹, Riddhi Surve¹, Deepa Nagarajan¹, Atul Laddu¹, Jawed Fareed²
1- Global Thrombosis Forum, Suwanee, GA and 2- Loyola University, Chicago, IL.

Background

VTE is the leading cause of morbidity and mortality among hospitalized patients. Many factors play a key role in changing the sensitivity and specificity of D-dimer testing, including the extent of thrombosis and fibrinolytic activity, duration of symptoms, anticoagulant therapy, comorbidity due to surgical or medical illnesses, inflammatory diseases, cancer, elderly age, pregnancy and the postpartum period, and previous VTE. A typical D-dimer level is less than 0.50 mg/L. The D-dimer test is highly sensitive (>95%) in acute deep venous thrombosis or pulmonary embolism, usually with a cut-off value of 500 µg FEU/L, which reasonably rules out acute VTE. Patients with high D-dimer levels upon presentation may prompt a more intense diagnostic approach, irrespective of pretest probability. We present here a case of an 84 year old male who suffered from pneumonia and significantly elevated d-Dimer levels, but with no evidence of DVT or PE.

Objectives

We wanted to find the relationship between the elevated d-Dimer levels and presence of evidence of VTE such as DVT, PE.

The Case

An 84 year old male, a non-smoker and with no alcohol consumption, with a history of asthma, diabetes, lipidemia, hypertension was admitted to the ER with coughing, nasal congestion, mild pain on the right lateral side of the chest, worsening on inspiration, difficulty of breathing, and low grade fever. No other symptoms. Other systems were normal.

Clinical Findings

- Temp 100 degrees F
- SpO2: 97
- COVID-19 and RSV: negative
- Leukocytosis: WBC Count: 9.5
- ECG: Normal, with NSR
- Elevated d-dimer 1395 ng/ml (threshold for age 80: 800 ng/ml)
- CT Angiography chest with IV contrast: No PE (Figure 1)
- TTE: No DVT (Figure 2)
- Temp 98.2, BP 154/65, pulse 75, Resp 20, SpO2 97, all other organs normal
- Elevated d-Dimer 1295
- HS Troponin 77
- BNP 165
- Procalcitonin 0.35

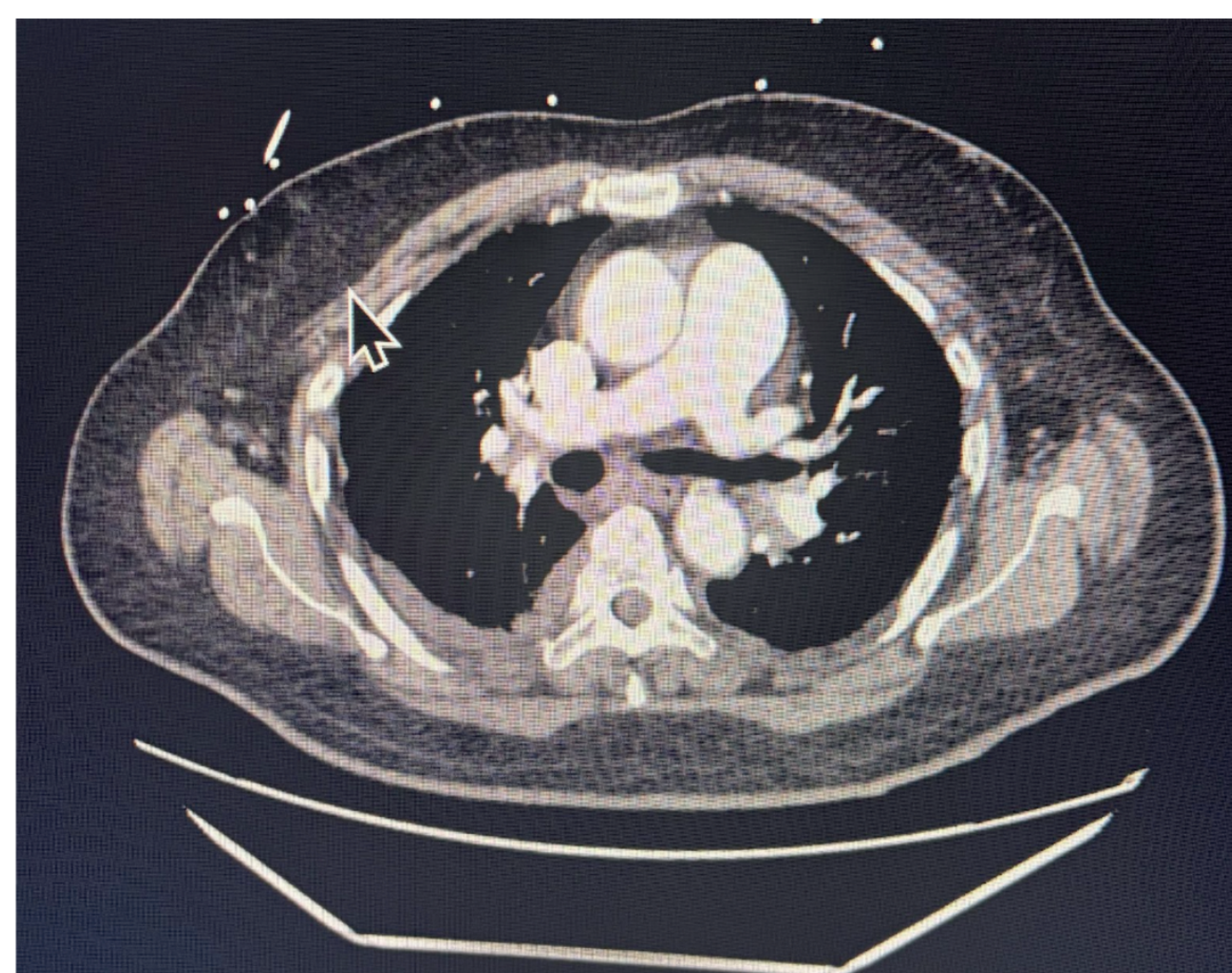


Figure 1: CT angiogram of the chest following the injection of IV contrast showing main pulmonary artery at bifurcation filled with contrast..indicating a filling defect (there was no evidence of thrombosis).

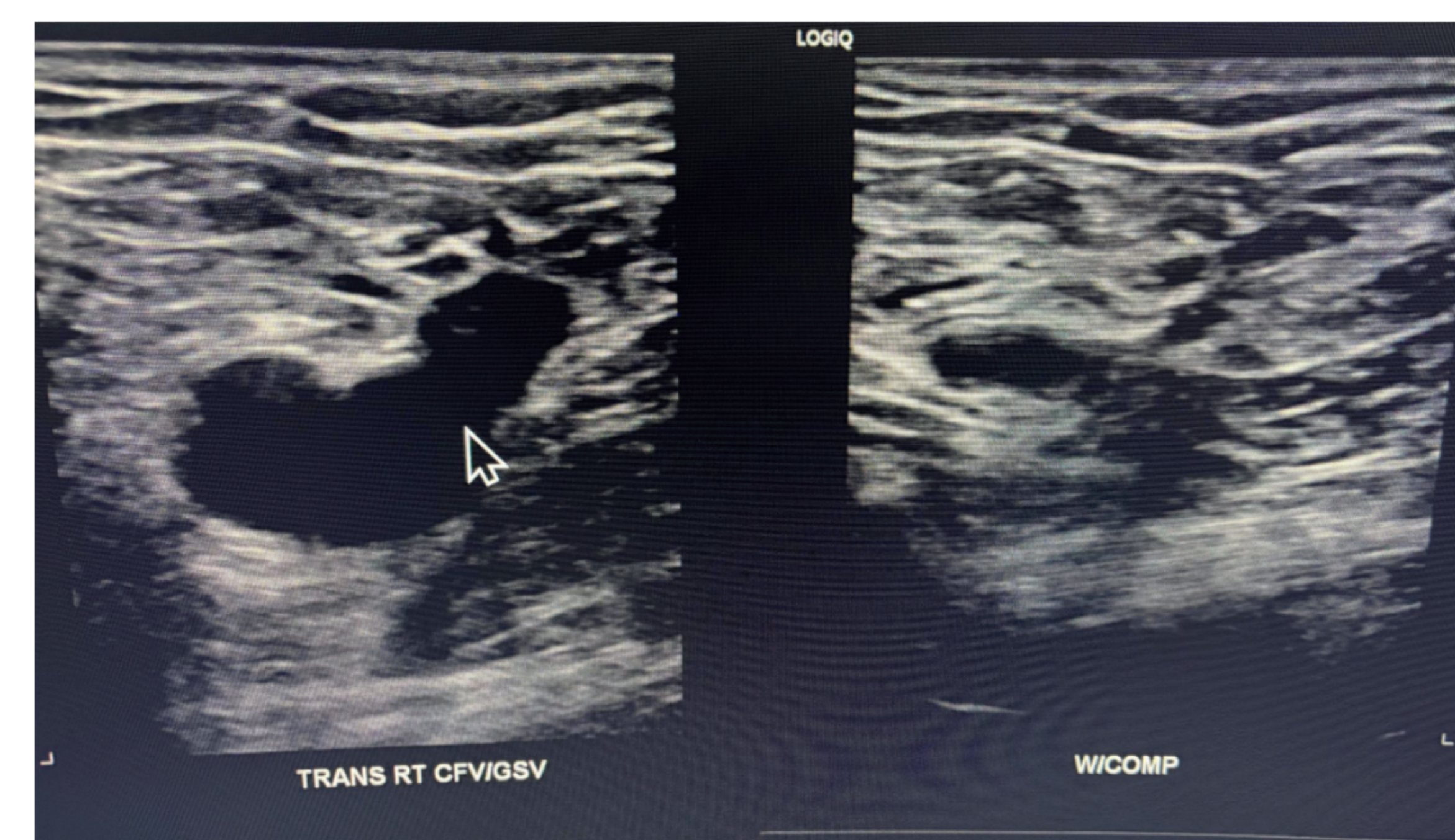


Figure 2: Right common femoral vein as seen normally on the left, and compressed vein on the right showing no evidence of thrombus.

Diagnosis

1. Community acquired pneumonia of right lower lobe
2. Acute pulmonary edema

Discussion

Our case, an 84 year old male, had a mild rise in temperature, leukocytosis, and elevated d-Dimer level, other systems were normal. Radiography showed no evidence of any VTE.

Conclusion

D-dimer is ordinarily undetectable or detectable at a very low level. It is well established that with a high level of D-dimer, a blood clot is suspected, necessitating further evaluation. In our case, despite the significant elevation of d-Dimer, any blood clots were ruled out. This case emphasizes the point that d-Dimer is a very valuable test for diagnosis of VTE, but may be associated with negative findings.