

# ELEVATION OF d-DIMER WITHOUT EVIDENCE OF VENOUS THROMBOEMBOLISM

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## PURPOSE

We aimed to investigate the relationship between elevated d-dimer levels and the presence of evidence of VTE, such as DVT or PE.

## THE CASE

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

## LIST OF MEDICATIONS TAKEN:

- Aspirin 81 mg daily
- Calcium 600-D: 1, BID
- Carvedilol 12.5 mg per day
- CoQ-10 200 mg once daily
- Crestor 5 mg per day
- Fiasp
- Fiber capsules, 2, BID
- Fish oil capsule: 1 per day
- Flaxseed oil 1 capsule, QD
- Jardiance: 25 mg per day
- Magnesium 400 mg, QD
- Multivitamin: once a day
- Nexium 20 mg
- Novolog: 30 IU per day
- Plavix 75 mg per day
- Tresiba: 14 IU per day
- Vitamin C 100 mg
- Vitamin D 5000 IU
- Wixela (fluticasone 250/salmeterol 50): 1 spray twice a day
- Zetia: 10 mg per day
- Past history: Nothing significant

## DIAGNOSIS

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

## BACKGROUND

VTE is the leading cause of morbidity and mortality among hospitalized patients. Several factors influence the sensitivity and specificity of D-dimer testing, including the extent of thrombosis and fibrinolytic activity, duration of symptoms, anticoagulant therapy, comorbidities resulting from surgical or medical illnesses, inflammatory diseases, cancer, advanced age, pregnancy, the postpartum period, and a history of previous VTE. A typical D-dimer level is less than 0.50 mcg/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 warrant a more intensive diagnostic approach.

## CLINICAL FINDINGS

Upon examination, the following findings were found:  
 Temp 100 degrees Fy  
 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  
 Serum creatinine (1.28)  
 HS Troponin 77  
 BNP 165  
 Procalcitonin 0.35

The patient was discharged after a 36-hour hospitalization.



Figure 1: CT of the chest showing the main pulmonary artery at bifurcation filled with contrast..indicating a filling defect (no thrombosis).

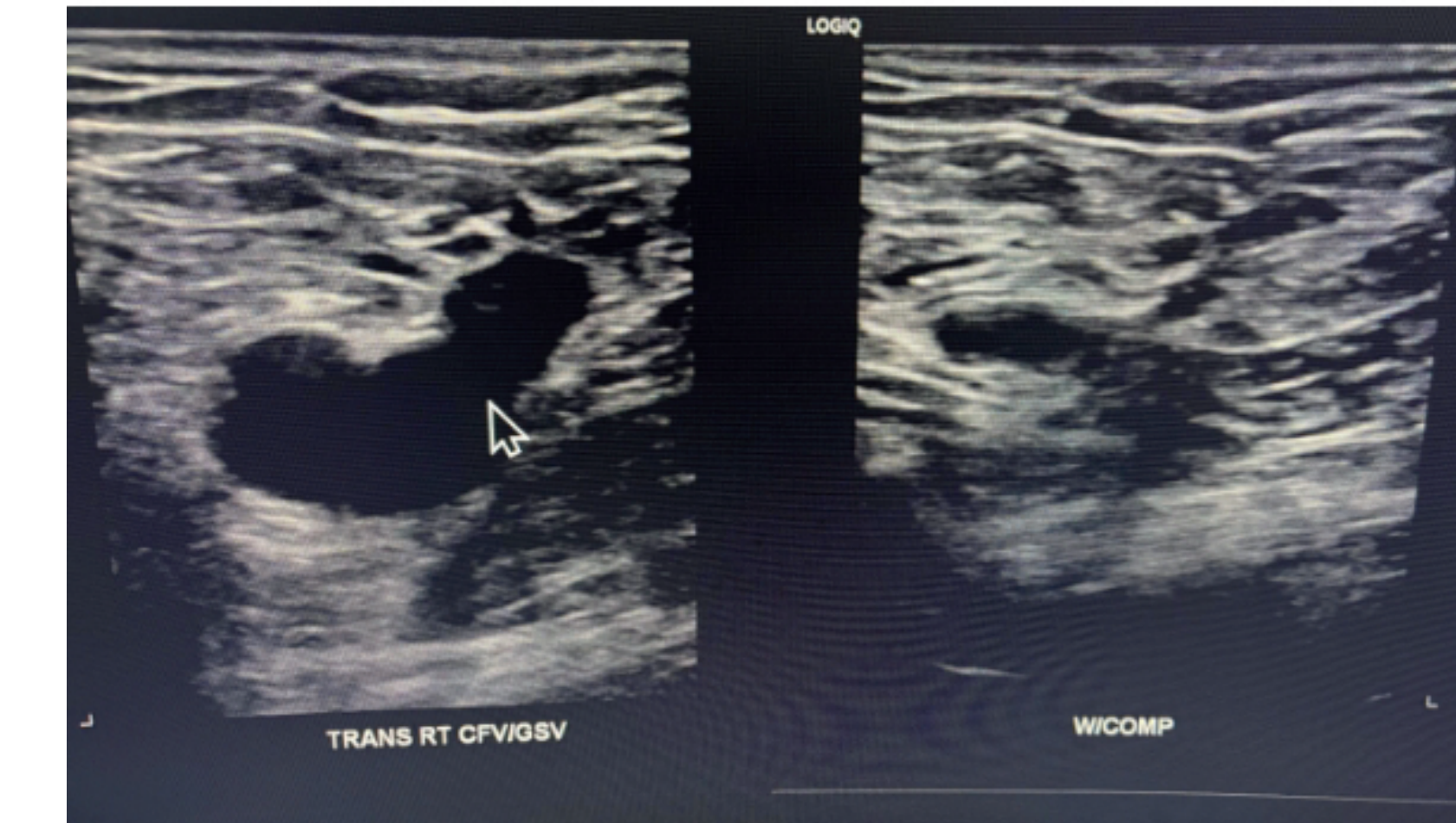


Figure 2: indicates the right common femoral vein as seen commonly on the left, and compressed vein on the right showing no evidence of thrombus.

## TREATMENT

Cefdinir 300 mg capsule  
 Azithromycin 500 mg tablet  
 Enoxaparin 40 mg  
 Tramadol 50 mg  
 Acetaminophen 325 mg  
 Ondansetron 4mg  
 CefTRIAXone 2 g in 20 ml NS  
 No DVT in right or left lower extremity  
 No PE

## DISCUSSION

In our case, an 84-year-old male presented with a mild rise in temperature, leukocytosis, and an 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 a high level of D-dimer indicates a suspected blood clot, necessitating further evaluation and investigation. In our case, despite the significant elevation of d-Dimer, presence of any blood clots was ruled out. This case highlights the importance of d-Dimer as a valuable diagnostic tool for VTE, and yet gives a caution that an elevation may yield negative findings. D-dimer, a soluble fibrin degradation product that originates from plasmin-induced degradation of cross-linked fibrin, is an important biomarker of coagulation activation and secondary fibrinolysis that is routinely used to rule out VTE, and to evaluate the risk of VTE recurrence, as well as the optimal duration of anticoagulant therapy. Besides VTE, D-dimer may be high due to physiologic conditions, including aging, pregnancy, and strenuous physical activity.