BRIEF CASE

CASES FROM TULANE UNIVERSITY SCHOOL OF MEDICINE

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CASE 1: NORMAL D-DIMER LEVELS IN A PATIENT WITH MULTIPLE PULMONARY EMBOLI

By Devika Nair, MD

THE PATIENT

A 39-year-old man presented to the ED with a 1-day history of left lower quadrant abdominal pain consistent with previous episodes of diverticulitis. His only symptom was abdominal pain, and his physical exam was significant only for tenderness to deep palpation in the left lower quadrant. The patient’s vital signs were unremarkable, including an oxygen saturation of 100% on room air. Results of admission testing are shown in Table 1.

D-dimers in patients who are pregnant, elderly, or hospitalized. Large-scale trials evaluating false-negative D-dimers are lacking, but smaller studies have shown that D-dimer testing is less sensitive in patients who have recently experienced trauma or who have had symptoms for at least 2 weeks. Our case suggests that patients with chronic, asymptomatic pulmonary emboli may have falsely negative results on D-dimer tests.

More recently, D-dimers have been used to determine the risk for recurrent disease in patients who have already completed anticoagulation. One systematic review found that patients with normal D-dimers 1 month after anticoagulation had a 3.5% risk of recurrent thromboembolism, while patients with elevated values had a risk of 8.9%. Clinicians can use this information to assist in the risk-benefit analysis of ongoing anticoagulation in certain cases of venous thromboembolism.

Table 1. Test results at admission

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
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<tbody>
<tr>
<td>Abdominal CT with IV contrast</td>
<td>Sigmoid colon thickening consistent with diverticulitis; incidental right inferior branch segmental pulmonary embolus</td>
</tr>
<tr>
<td>Chest CT with IV contrast</td>
<td>Bilateral lower-lobe posterior segmental pulmonary embolus</td>
</tr>
<tr>
<td>D-dimer</td>
<td>0.2 µg/mL (abnormal value, &gt;0.5 µg/mL)</td>
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<tr>
<td>Modified Wells score</td>
<td>0 points</td>
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THE DIAGNOSIS

This patient was incidentally demonstrated to have asymptomatic and likely chronic bilateral pulmonary emboli. D-dimer testing was performed for strictly educational purposes and was done after the CT results were known. Contrary to expectation, the patient had a normal D-dimer level despite multiple confirmed pulmonary emboli.

D-dimer testing has been used to predict venous thromboembolic disease in low-risk patients. In hemodynamically stable patients with a low pretest probability, guidelines suggest that a normal D-dimer level effectively rules out pulmonary embolism due to the test’s strong negative predictive value.

However, the utility of the D-dimer may be limited in certain instances. Numerous trials have demonstrated falsely elevated D-dimers in patients who are pregnant, elderly, or hospitalized. Large-scale trials evaluating false-negative D-dimers are lacking, but smaller studies have shown that D-dimer testing is less sensitive in patients who have recently experienced trauma or who have had symptoms for at least 2 weeks. Our case suggests that patients with chronic, asymptomatic pulmonary emboli may have falsely negative results on D-dimer tests.

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PEARLS

- D-dimers may be falsely positive in certain patient groups (elderly, pregnant, or hospitalized patients) and falsely decreased in others (patients who have had recent trauma or longer symptom duration).
- D-dimers may be useful in measuring the chance of recurrent thromboembolism following anticoagulation and can thus be used to guide treatment decisions regarding the length of anticoagulant treatment.

CASE 2: VITAMIN B₁₂ DEFICIENCY PRESENTING WITH ALTERED MENTAL STATUS AND THROMBOCYTOPENIA

By Ashley Ellison, MD, ACP Resident/Fellow Member

THE PATIENT

An 80-year-old woman with unknown medical history was found wandering alone in a local pharmacy disoriented to person, place, and time. She was guarded and would not answer any questions regarding medical history, review of systems, substance use, or past medications. Given her inability to state her name, no collateral information could be gathered. Vital signs were normal. Aside from confusion, disorientation, and thin body habitus, there were no abnormalities on physical exam and neurological exam was normal. Results of admission testing are shown in Table 2.