

## **DIFFERENTIAL DIAGNOSIS**

### **Understanding and Using an Article about Disease Probability for Differential Diagnosis**

#### **Objectives:**

After working through this package, you should be able to:

1. Ask an answerable foreground question about disease probability for differential diagnosis.
2. Appraise an article about disease probability for differential diagnosis for validity, importance, and applicability.
3. Apply the appraised evidence to a clinical decision.

#### **Assignment:**

1. Read the clinical scenario, and frame an answerable foreground question about disease probability for differential diagnosis as it applies to this clinical topic.
2. Read the enclosed article by Griesshammer *et al*.
3. Read Guyatt G, Drummond R. *User's Guides to the Medical Literature: A Manual for Evidence Based Clinical Practice*, 3<sup>rd</sup> Edition (JAMA). New York, NY: The McGraw-Hill Companies, Inc, 2015. 17. Differential Diagnosis
4. Complete your appraisal of the Griesshammer *et al* article using the structured worksheet provided.

#### **Clinical Scenario:**

At a recent quality improvement rounds, a discussion of a patient's received care has led to the formation of a quality improvement team. The patient was admitted to the Ambulatory Surgery Department for an elective surgical release of a Dupuytren's contracture. After the procedure, just before discharge, the patient was found to have swelling in the opposite arm above the peripheral catheter site and tests showed acute deep vein thrombosis in that upper arm. The patient was admitted to the hospital, treated with antithrombotic medications and recovered uneventfully. In retrospect, the preoperative platelet count was found to be 875,000/ $\mu$ L. Subsequent tests showed the patient had essential thrombocythemia, a clonal myeloproliferative disorder associated with increased risk of thrombotic complications and one of the causes of 'primary thrombocytosis' (rather than 'reactive' or 'secondary').

This case was presented and discussed at two sets of rounds. In a Department of Medicine Conference, the case was presented and the differential diagnosis of elevated platelet count was extensively discussed. During quality improvement rounds, the case was presented and discussed as providing several signals for quality improvement – a possibly preventable complication of surgery, a possibly avoidable inpatient admission, and a probably delayed diagnosis. For instance, the preoperative platelet count had been reviewed, yet the number was displayed in a small font that was (too easily) misread as being 375,000/ $\mu$ L. A larger improvement team was formed, that was then broken into different squads working on different aspects of this case. You have been asked to serve on the squad addressing when and in whom primary thrombocytosis

due to clonal bone marrow disorder should be considered in the differential diagnosis. The squad discusses this problem in detail, acknowledging several aspects:

- a. Most cases of thrombocytosis are likely to be 'reactive' or secondary, so primary disorders are not the most common cause, but may not be rare
- b. Patients with primary thrombocytosis may be previously asymptomatic, so relying only on the absence of this in the patient's history would allow these disorders to be missed.
- c. The tests for confirming or excluding a clonal bone marrow disease may be unavailable at different times during the day, and are also sufficiently invasive, painful, expensive, risky, time-consuming, or otherwise imperfect, so that a strategy of testing for primary thrombocytosis in everyone with high platelet counts does not appear prudent.

You ask the squad how frequent primary thrombocytosis really is among patients with high platelet counts. Smiling, the squad leader suggests you lead the squad in finding and appraising evidence that could answer this question. The squad's librarian asks you to frame the foreground question about disease probability for differential diagnosis:

Your question:

Armed with your question, you and the librarian find a citation that appears to address your question, so you retrieve that for your squad.

**Enclosed Materials:**

1. Griesshammer M, Bangerter M, Sauer T, Wennauer R, Bergmann L, Heimpel H. Aetiology and clinical significance of thrombocytosis: Analysis of 732 patients with an elevated platelet count. *J Intern Med* 1999; 245: 295 – 300. PMID 10205592
2. Worksheet for the evaluation of an article on disease probability for differential diagnosis.