Clinical Diagnostic Reasoning

TO THE EDITOR: Bowen’s review of educational strategies that can be used to promote clinical diagnostic reasoning (Nov. 23 issue)1 does not sufficiently emphasize the concept of premature closure. Acceptance of a diagnosis before sufficient verification has occurred and failure to consider plausible alternatives once a diagnosis has been reached2,3 are common causes of diagnostic error and can occur at any level of training.4,4 One possible effect of anchoring — the inability to assimilate subsequent or evolving data — is a particularly important contributing factor in premature closure and may lead to faulty synthesis of information.5 The risk of premature closure may be greatest when learners are pressed for time or expected to have a level of expertise they have not yet attained. Premature closure may be just as likely to result from an “unlucky” adherence to an illness script as from gaps in knowledge. Clinical educators should encourage learners to continuously integrate new information into the decision-making process.

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TO THE EDITOR: We agree with Bowen that clinical educators need to understand and analyze the varied diagnostic reasoning strategies applied by novices such as medical students to help them improve their performance. However, the diagnostic reasoning schema in Figure 1 of the article appears to oversimplify this process. Because of minimal clinical experience, the novice generally has poorly formed illness scripts and will often generate hypotheses using a pathophysiological, probabilistic, or rule-based representation of the problem (skills acquired during problem-based learning).1,2 Such hypotheses are often more numerous, broader, and less accurate than those of experts and must be refined by the novice during the interview with the patient and during the physical examination, while the novice looks for the specific symptoms, risk factors, and signs that allow for iterative reweighting of the clinical diagnostic possibilities. We believe that acknowledgment of alternative bases for hypothesis generation and of the iterative nature of hypothesis refinement will further assist educators in improving students’ diagnostic reasoning strategies.

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TO THE EDITOR: We use the technique outlined by Bowen in our own teaching. However, Bowen does not address the possibility of an incorrect diagnosis obtained through valid diagnostic reasoning. The clinical teacher should allow for this possibility as part of the case presentation. Correcting an incorrect diagnosis is a critical skill that requires the identification of alternative steps in the development of a representation of the problem and reevaluation of the differential diagnosis to include other conditions that may have features similar to those of the case under consideration. Thus, Figure 1 of the article should have included a final step in which diagnostic reasoning leads to either a correct or an incorrect diagnosis. When a diagnosis is incorrect, the reasoning process expands to include the pertinent data for the missed diagnosis, leading the learner to improve the problem representation or illness script.

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