NEJM Journal Watch

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Guidance in Evaluation of Microscopic Hematuria

A new guideline recommends ultrasound instead of computed tomography for some patients with this finding.

How should we evaluate asymptomatic microscopic hematuria? A 2012 guideline from the American Urological Association (AUA) recommended that all patients older than 35 with microscopic hematuria — defined by the AUA as ≥3 red cells per high-power field — should undergo both computed tomography urography (CTU) and cystoscopy. But in 2020, an update of the guideline presents a more nuanced approach. It classifies patients into three categories of risk for genitourinary malignancy and recommends the following:

- Low-risk patients: either repeating urinalysis at 6 months or proceeding with renal ultrasound and cystoscopy are acceptable.
- Intermediate-risk patients: renal ultrasound and cystoscopy
- High-risk patients: CTU plus cystoscopy

The guideline also discusses approaches to patients whose initial anatomic evaluation is negative but who continue to have microscopic hematuria (*NEJM JW Gen Med* Aug 1 2020 and *J Urol* 2020; 204:778).

The move away from CTU for all patients is supported by two observational studies published during the past year. In one study, researchers presented data from an integrated medical system in which ultrasound was the initial upper-urinary-tract imaging procedure for 2100 adults who had asymptomatic microscopic hematuria and were followed for at least 3 years. Their findings suggested that no important upper-tract malignancies were missed by this approach (*NEJM JW Gen Med* Jan 15 2020 and *Urology* 2019 Nov; 133:34).

In the other study, researchers validated a previously published "hematuria risk index" (*Mayo Clin Proc* 2013; 88:129) in 1000 patients with asymptomatic microscopic hematuria. Among 600 patients classified as low-risk, half had CTU, and half had renal ultrasound; no upper-tract cancers were found by either imaging modality (*NEJM JW Gen Med* Aug 1 2020 and *Urology* 2020; 141:27).

Taken together, the new guideline and the above-noted studies indicate that renal ultrasound is an acceptable way to examine the kidneys in many patients with asymptomatic microscopic hematuria. This approach limits exposure to radiation and contrast and is less expensive than CTU. Two additional points — emphasized in the AUA guideline — are worth mentioning. First, dipstick positivity for blood does not constitute microscopic hematuria unless red cells are visualized on microscopic examination of the urine. And second, the recommendations for imaging and cystoscopy do not necessarily apply to patients with microscopic hematuria who have other urinary findings (e.g., proteinuria, pyuria) that suggest different diagnostic pathways. ***— Allan S. Brett, MD***

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