

Computed tomography of the head

To the Editor: While I agree with Dr. Muth and colleagues¹ that computed tomography (CT) of the head is overused, the claim that it only rarely reveals a contributing process in patients with delirium is at odds with the available evidence. A recent systematic review and meta-analysis including 21,500 patients in 46 studies² reported a diagnostic yield of 13% for head CT in hospitalized patients with delirium, suggesting that this test can provide valuable information in selected patients.

In addition to the authors' framework, 2 additional steps should guide the use of head CT: first, individualizing the differential diagnosis, and second, risk-stratification using pretest probability. Applying these steps to the case in their article, consideration of cerebrovascular accident in the differential diagnosis is warranted given the patient's advanced age and the fact that delirium occurs in approximately 25% of patients with acute stroke.³ However, other features allow us to predict that head CT will have low diagnostic yield. First, the case does not mention focal neurologic deficits, which if present would increase the pretest probability of cerebrovascular accident when using tools like the National Institutes of Health stroke scale as the authors suggest. Second, the occurrence of delirium on hospital day 4 suggests exposure to other causes of delirium more common than acute stroke.⁴

The presence of focal neurologic deficits in patients with delirium increases the diagnostic yield of head CT from 13% to 19% in medical inpatients.² If physical examination in this case was without evidence of focal neurologic deficits, then the pretest probability of cerebrovascular accident is low, and neuroimaging may not be necessary. However, in the presence of these deficits, head CT would be justified. In sum, we shouldn't throw the baby out with the bathwater: the diagnostic yield of even an overused test can be maximized with tailored, probabilistic reasoning.

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