Letter by Yeo et al Regarding Article, “Time-Dependent Test Characteristics of Head CT in Patients Suspected of Nontraumatic Subarachnoid Hemorrhage”

To the Editor:

We read with interest the article on diagnosis of subarachnoid hemorrhage (SAH) by early CT scans that proposes to eliminate the need for cerebrospinal fluid absorption spectrophotometry analysis.1 Although we have an almost similar experience with early CT imaging with the modern multislice scanners, the numeric value of 100% for all the accuracy parameters needs to be interpreted carefully, especially in view of the relatively small cohort size of 137 patients.

The message that there is no added value of cerebrospinal fluid analysis if CT scan of the head, performed within 6 hours, is normal in patients with acute headache might be applicable only to the advanced tertiary care centers equipped with the best scanners and best interpreters. Considering that SAH largely involves relatively younger population, universal application of the conclusions by Backes et al across all hospitals, with highly variable quality of technology and medical personnel, could lead to “potentially preventable” grave consequences. Furthermore, the modern scanners may fail to detect SAH in an occasional patient with typical clinical presentation. We present a 50-year-old Chinese woman who presented to our tertiary center with severe frontal headache of sudden onset associated with nausea and vomiting. She denied any trauma. She was fully conscious, orientated, and had blood pressure of 134/75 mm Hg. Apart from photophobia and mild neck stiffness, the neurological examination was unremarkable and her headache was partially ameliorated with analgesics. A noncontrast CT brain performed at 2 hours after symptom onset was read as “unremarkable” by a senior neuroradiologist as well as a neurologist. Approximately 14 hours later, she developed a brief generalized tonic–clonic seizure followed by rapid deterioration in her level of consciousness, necessitating endotracheal intubation. A repeat CT brain revealed SAH extending to the ventricles. She did not show any improvement with extraventricular drainage and conservative management and died on Day 3.

Aneurysm rebleeding is maximal in the first 2 to 12 hours, occurs in 4% to 13.6% of patients, and is associated with very high mortality and poor prognosis for functional recovery in survivors.2–4 Therefore, all efforts should be made toward “not missing the diagnosis.” We agree with the authors about the low reliability of cerebrospinal fluid spectrophotometry in the diagnosis of SAH. A recent study showed that head CT and cerebrospinal fluid may be normal in approximately 1.4% of patients with SAH and the diagnosis required vascular imaging.5 We wish to reiterate that although the proportion of patients in whom the diagnosis may be missed by CT and cerebrospinal fluid analysis is small, they should be considered “precious” because most of the grave consequences are preventable.

In conclusion, we strongly recommend that the treating clinicians should have a high index of suspicion for SAH in patients presenting with acute severe headaches of new onset and continue to follow the traditional teaching of performing a lumbar puncture if the initial CT scan of the head yields negative results. Perhaps, a repeat head CT within 4 to 6 hours (with even a CT angiography) in selected cases might help in reducing mortality and long-term disability.

Disclosures

None.

Leonard L.L. Yeo, MRCP
Yee Cheun Chan, MRCP
Vijay K. Sharma, MRCP
Division of Neurology
National University Health System
Singapore

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Leonard L.L. Yeo, Yee Cheun Chan and Vijay K. Sharma

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