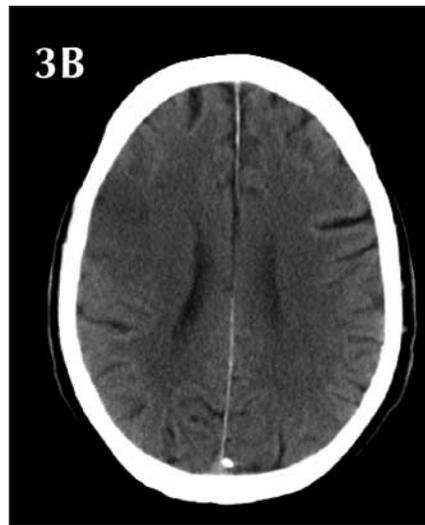
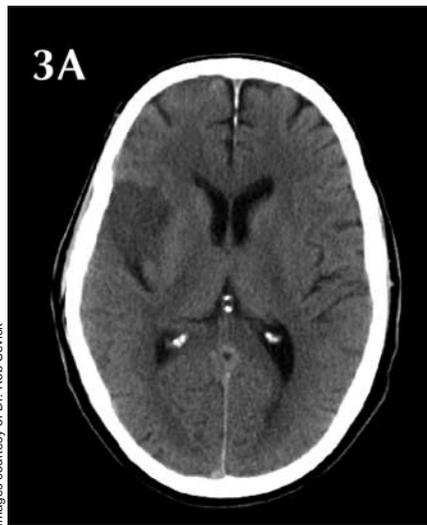
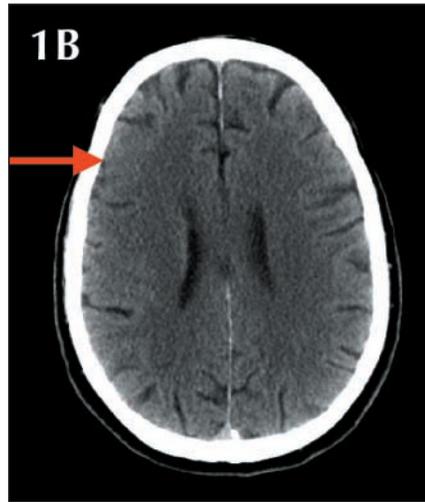


The eyes have it: conjugate eye deviation on CT scan aids in early detection of ischemic stroke



Images courtesy of Dr. Rob Seivick

A 65-year-old right-handed man, who had moved to Canada from Pakistan a year earlier, presented to the emergency department with a 75-minute history of “speech problems.” The exact nature of his presenting complaint was difficult to assess because of a language barrier and the absence of a fluent translator. The man had a history of hypertension treated with atenolol and amlodipine and was taking ASA for a previous transient ischemic attack that had caused left-sided numbness.

Clinically he was noted to have a

mild expressive dysphasia and slurred speech, which suggested a left cortical stroke. No conjugate eye deviation was observed. The remainder of his examination was unremarkable except for hypertension (191/85 mm Hg). The patient was rated as mildly affected on the National Institutes of Health Stroke Scale in the language category (NIHSS score of 1).¹ A non-contrast CT scan of his head performed 3 hours after symptom onset was described initially as showing no acute ischemic tissue (Figs. 1A and 1B; arrows demonstrate early ischemic changes that were appreciated

later: loss of differentiation between grey and white matter and mildly effaced sulci in the right cortex and hypodensity of the right insula). The blood work and electrocardiogram yielded unremarkable findings.

The patient was treated conservatively and admitted for further tests and observation. By the next morning he clearly had sensory and visual neglect for the left side of his body, a left facial droop and dysarthria (NIHSS score of 4). Again, no eye deviation was detected on clinical examination. On review of the initial CT scan, however, conjugate eye deviation to the right was noted, and the ischemic changes were then appreciated (Fig. 2). A CT scan performed 20 hours after symptom onset confirmed a right frontal infarct in the right middle cerebral artery territory (Figs. 3A and 3B). Subsequent CT angiography revealed complete occlusion of the right common carotid artery with reconstitution in the petrous segment of the right internal carotid artery. The patient responded to rehabilitation therapy and was discharged home with minimal deficits.

Conjugate eye deviation, a sustained shift in horizontal gaze toward the af-

affected hemisphere, is a well-recognized finding in acute stroke. Several supranuclear lesions, such as in the cortical frontal eye fields or in the brainstem paramedian pontine reticular formation, can cause conjugate eye deviation.²

On CT scans, conjugate eye deviation or a lone abducting eye has been shown to reliably point toward the affected hemisphere in acute ischemic stroke.³ Eye deviation observed on CT scans appears to be more common than is apparent on clinical examination. This is probably because most patients close their eyes during CT scanning, which removes fixation. Recognizing our patient's eye deviation might have allowed earlier recog-

nition of his subtle right hemispheric ischemic changes (Fig. 1B).

When eye deviation is observed that does not agree with clinical information, the patient and CT scan should be examined carefully. In some cases eye deviation may be away from the side of the brain lesion and toward the symptomatic body side, such as in thalamic infarction and non-stroke diagnoses (e.g., seizure).

Most stroke patients have readily identifiable and localized symptoms and clinical signs, but when there is limited history or findings on physical examination, as in our case, the detection of eye deviation on a CT scan can help to identify the affected hemisphere.

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HEALTH AND DRUG ALERTS

Concerns over lindane treatment for scabies and lice

Reason for posting: Scabies and lice infestations are common afflictions often remedied with topical therapies such as lindane,^{1,2} a drug prescribed more than a million times last year in the United States.³ However, lindane has several serious neurotoxic effects, ranging from dizziness, headaches and paresthesia, to seizures and even death.⁴ The US Food and Drug Administration recently advised that these effects are more common in young children, elderly people and people weighing less than 50 kg and has recommended that the drug be used only as a second-line agent.⁴

The conditions: Scabies is caused by the mite *Sarcoptes scabiei*. The mites die if away from a human host for more than 72 hours.⁵ Impregnated females (about 0.3 mm long) are transferred directly through close contact with people, bedding or clothing. They lay their eggs as they burrow under the skin, and after 3-4 days the larvae hatch and migrate to the skin surface, creating new burrows, where they mature into reproducing adults. Infestations often involve as few as 5-10 adult mites.⁵ Elderly and im-

munocompromised hosts are at risk for a severe "crusted" form of scabies.^{1,5} Initial infestations may be relatively asymptomatic for the first 4-6 weeks. In subsequent infestations, an intense, generalized, often nocturnal itch can develop within days. Pruritic lesions erupt along mite burrows in the finger webs, penis, breasts, and folds of the wrists, elbows and knees.^{1,5} Secondary bacterial infections can occur, as can a papular rash on the buttocks, scapula and abdomen. Scabies is diagnosed clinically, aided by skin

scrapings showing mites, ova or feces.⁵ Treatment of asymptomatic close contacts is advisable to avoid reinfection.

Head lice infestation (pediculosis capitis) is caused by *Pediculus humanus capitis*.^{2,6} These lice live close to the scalp for easy access to blood and warmth and will die without a human host within 1-2 days. Adult lice are transferred through close human contact or through contact with hats and other headgear, pillow cases and clothing. Daily, female lice lay up to 6 yellow-white, 1-mm long

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