



LECTURE

Stroke mimics and stroke chameleons

Carlos Andrade¹

Special Issue on Stroke. From the Porto University Center of Medicine Stroke Update Course, Porto, Portugal. 7–8 June 2016.

Abstract

Stroke is one of the major causes of death and morbidity worldwide and carries an important economic impact. The diagnosis is still a clinical one, supported by brain imaging. However, up to 30% of suspected stroke presentations, have a different diagnosis. In these cases, two scenarios must be considered: a false positive diagnosis, or “stroke mimic”, and a false negative or “stroke chameleon”.

Although a sudden onset of a neurological deficit usually represents a stroke, other conditions such as seizures (especially if Todd’s palsy is present), syncope, hypoglycaemia, migraine, brain tumours and functional disorders represent the bulk of the differential diagnosis. The accuracy of their recognition depends on context (primary care vs paramedics vs emergency department vs stroke specialist). Even the stroke specialists may have up to 15% of misdiagnoses. Brain imaging is a powerful helper. Non-contrast CT scanning has become the primary imaging modality in the initial assessment, mainly due to its wide availability, rapid execution and lack of major contraindications (such as pacemaker). It detects fairly easily an acute haemorrhagic stroke or a non-vascular structural cause of stroke mimic (such as a space-occupying lesion). However, the majority of strokes are ischaemic, and the initial CT-scan may be negative. Brain MRI, on the other hand, and in particular diffusion weighted imaging (DWI), have 88-100% sensitivity and 95-100% specificity for early ischaemia.

A variety of other neurological conditions may be DWI positive, and so, clinical context must be considered. DWI negatives are rare, mainly associated with small lesions in the brainstem, and, as described more recently, are overcome by associating perfusion-weighted imaging. Nevertheless, MRI is time consuming and may not be immediately available, and therefore most clinicians still administer thrombolytic therapy base on clinical evaluation and non-contrast CT-scan. Inadvertently but inevitably, stroke mimics also receive this treatment. Although inadequate, it is relatively safe, with a low likelihood of complications (<1%).

Stroke can have an unusual presentation and can often not be immediately recognized. Although rare, vertigo may be a manifestation of stroke. A thorough neurological examination, particularly focusing on the head impulse test, evaluation of nystagmus and skew deviation, can properly distinguish a peripheral lesion from a vertebrobasilar stroke. Other findings, such as monoplegia or delirium, may infrequently be the sole manifestation of stroke.

In conclusion, the identification of stroke can be difficult. The full workup (including MRI) of all patients that may have a stroke is probably not feasible, and an initial clinical evaluation is still an important screening tool. In the future, the development of blood biomarkers of cerebral ischaemia may further help the accurate detection of this common diagnosis.

¹Neurology Department, Centro Hospitalar do Porto, Portugal

Citation: Andrade, C Stroke mimics and stroke chameleons. International Journal of Clinical Neurosciences and Mental Health 2016; 3(Suppl. 2):L2

Published: 06 June 2016



Open Access Publication Available at <http://ijcnmh.arc-publishing.org>

© 2016 Andrade, C. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

