Audit of Reports of CT Brain scans for suspected dementia

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Background

Neuroimaging is integral to the diagnostic workup of dementia.

This is to exclude potentially treatable causes of cognitive impairment and improve the accuracy of diagnosis by identifying zonal changes and the extent of cerebrovascular disease.[1, 2]

CT scan with coronal reformats is probably the most cost effective first line option available, though MRI is more sensitive and is required where a rare condition is suspected.[3]

This audit aims to assess the performance of reporting on CT Brain scans in patients with suspected dementia, to determine whether all relevant information is included in the report. The hope is to maximise the diagnostic value of the report to the requesting clinician.

Standard

After discussion with local old age psychiatry and review of national guidelines it was decided that the following criteria should be mentioned in each report:

1. Extent of global atrophy.

2. Evidence of focal or zonal atrophy

3. Extent of chronic microvascular ischaemic change

4. Evidence of previous lacunar or arterial territory infarcts.

Indicator

Percentage of reports which mention all 4 criteria.

Target

The target is 100%.

Methodology

RIS was searched for outpatient CTs performed as part of the investigation of suspected dementia between 1 January 2015 and 30 June 2015.

62 scans were found and their reports scored against the selected criteria.

Results

Criteria	Documented in report	Not documented	Overall percentage
1. Extent of global atrophy for age	56	6	90.3%
2. Evidence (or lack of) of focal or zonal atrophy	17	45	27.4%
3. Extent of white matter change microvascular ischaemic change	41	21	66.1%
4. Evidence (or lack of) of previous or current lacunar or arterial territory infarcts	14	48	22.5%

Number criteria included in report	0	1	2	3	4
Total	5	11	27	13	6

Action Plan

Create a standard template with dictation short cut to improve report consistency.

Increase staff awareness by giving a short education session at the radiology audit meeting.

Re-audit the same period next year.

Education sheet for Reporting CT Brains for suspected Dementia

What does the referrer need to know?

• Extent of global atrophy

• Evidence of focal or zonal atrophy - especially medial temporal lobes

• Extent of white matter microvascular ischaemic change

• Evidence of previous lacunar or arterial territory infarcts.

Approach

1. Mention all factors, including relevant negatives.

2. Systematic approach.

3. Consider use of visual rating scales to improve sensitivity and internal consistency of descriptive reports.

Optimal plane for assessment of the medial temporal lobes

Coronally reformatted images reconstructed perpendicular to the long axis of the temporal lobe.
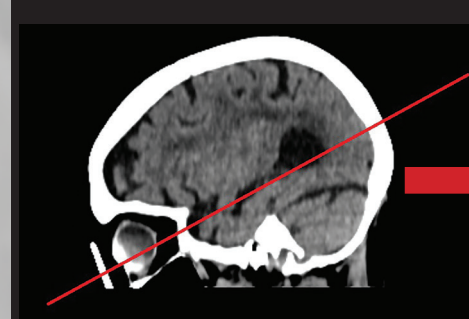
Negative scan angle
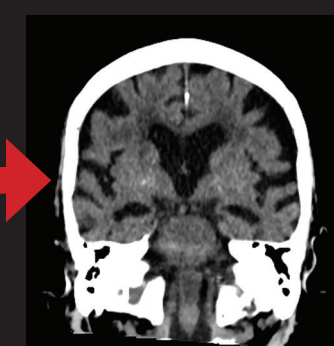
Consistent slice position through the corpus of the hippocampus, at the level of the anterior pons

References

1. National Institute for Health and Clinical Excellence. Dementia: Supporting people with dementia and their carers in health and social care. Clinical Guidance 42. NICE, 2006. http://www.nice.org.uk.

2. Recommendations for the diagnosis and management of Alzheimer's disease and other disorders associated with dementia: EFNS guideline. European Journal of Neurology 2007;14:e1-e26.

3. Guidance on the use of neuro-imaging in the assessment of dementia in Primary Care. NHS England Strategic Partnerships. 1st edition, September 2013