

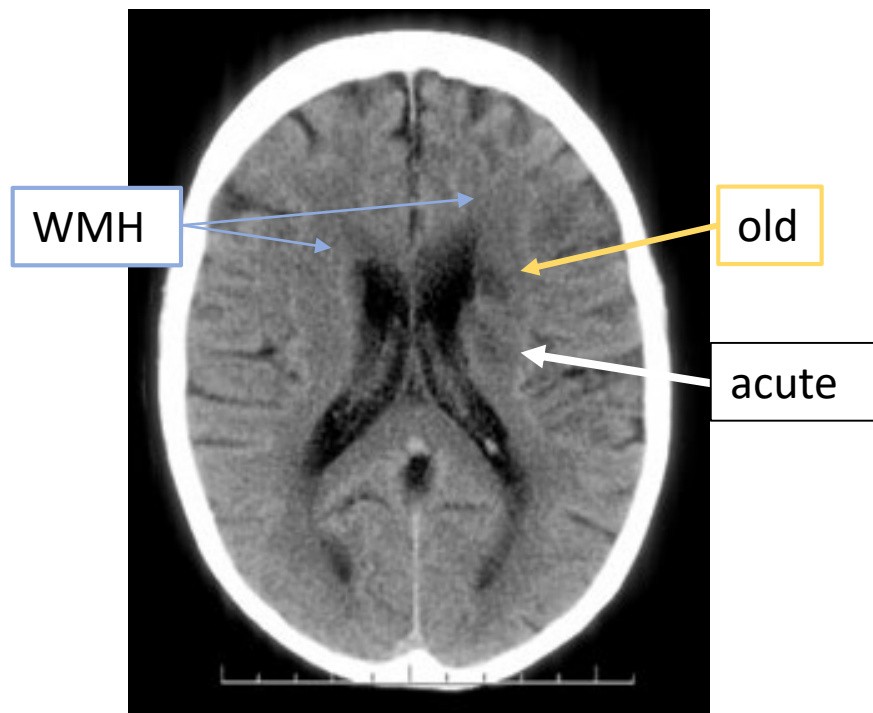


## Acute lacunar ischaemic stroke lesions on imaging

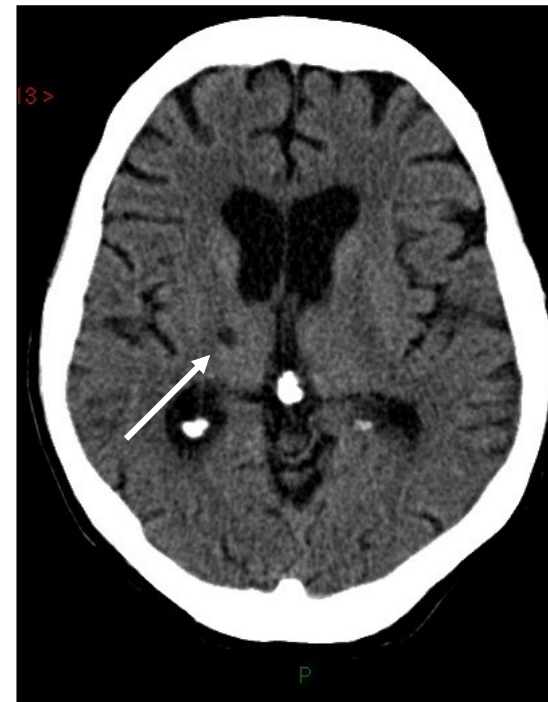
Part C - CT

# Acute lacunar infarcts on CT

A good quality plain CT brain scan, covering the whole brain, preferably a volume scan with isotropic voxels, plus a 3 or 5mm axial reconstruction, is all that is needed. Neither CT angiography nor perfusion imaging are necessary. Adjust the window level and width settings to give optimum grey and white matter distinction.



Acute lacunar infarct, is darker than normal grey or white matter but not as dark as CSF; an older lacune is just anterior. WMH are also visible.



Lacune. Dark, like CSF. This indicates a lacunar infarct that happened weeks to years ago. [Note that CT cannot tell the difference between old infarcts and old haemorrhages.]

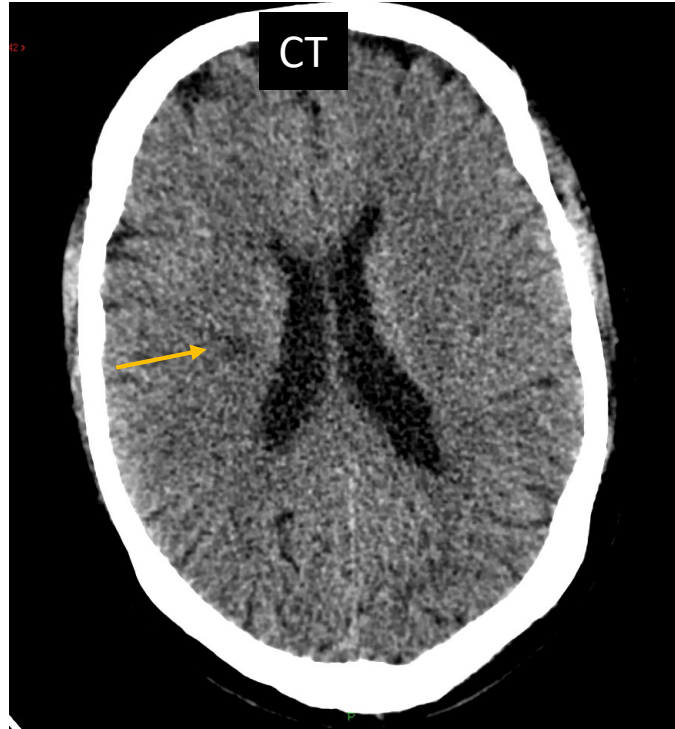
# Acute lacunar infarcts on CT

## Also exclude other causes of symptoms

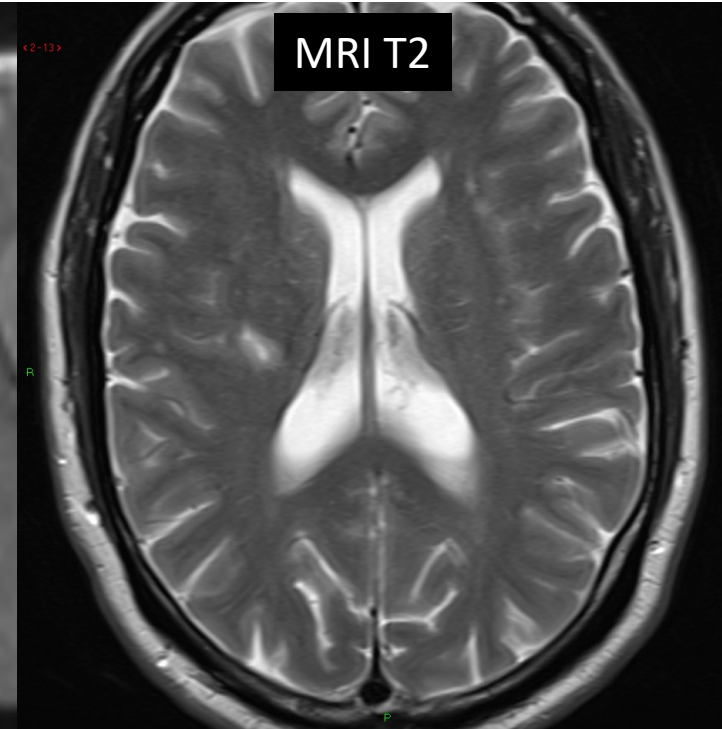
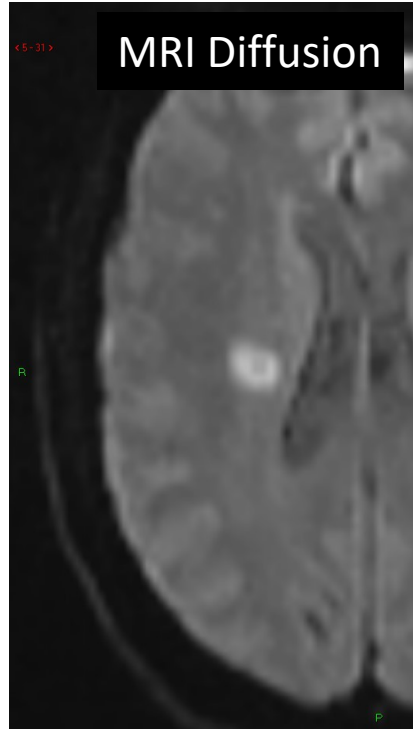
The main alternative causes of symptoms that should be excluded on CT are:

- Cortical infarct
- Tumour
- Haemorrhage

# Acute lacunar infarcts on CT



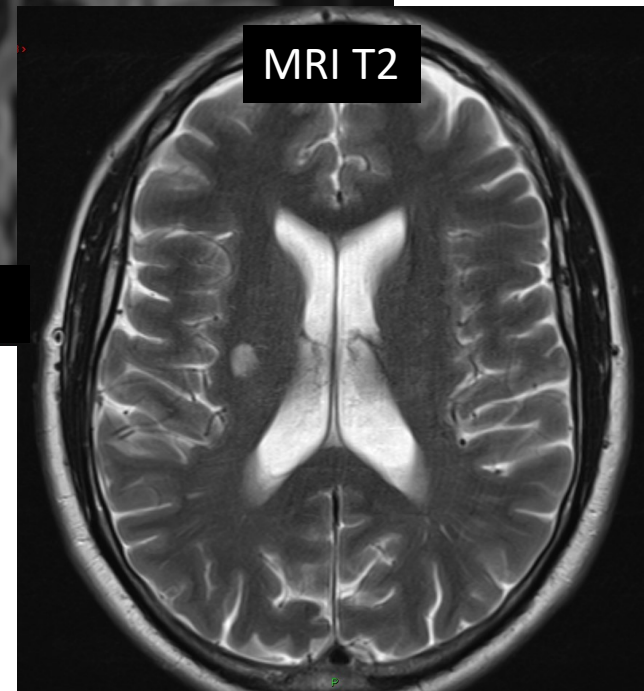
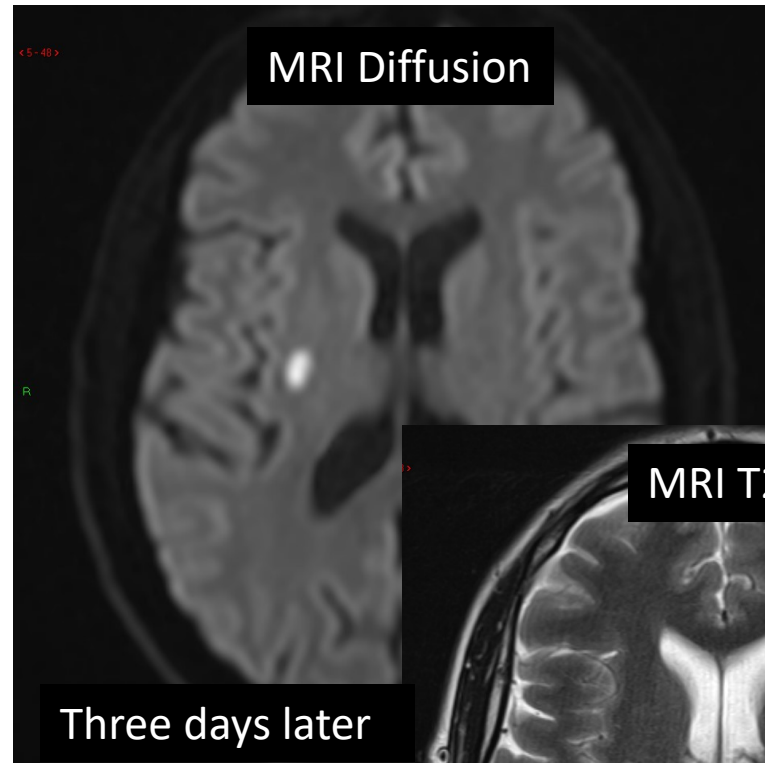
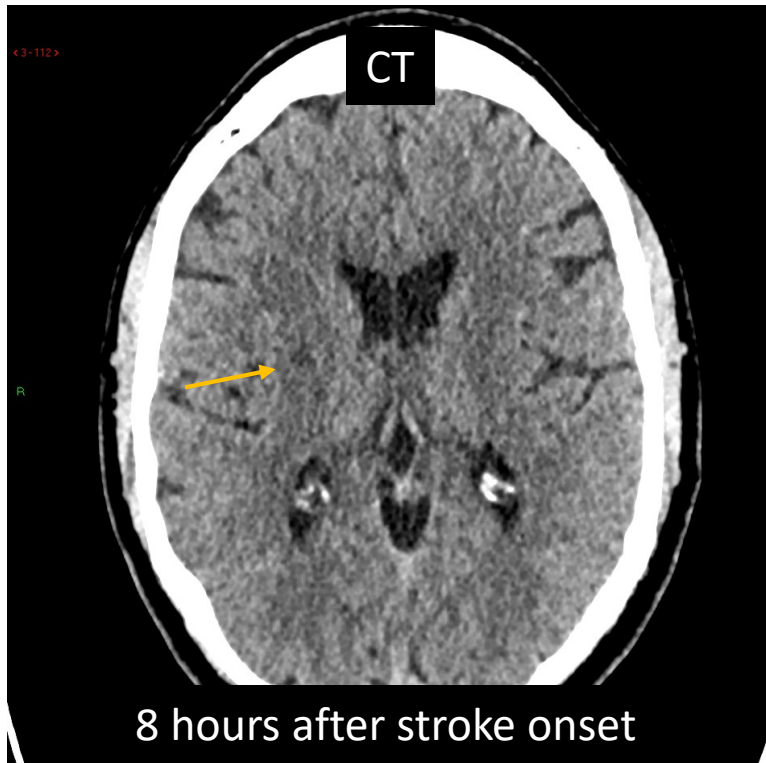
12 hours after stroke onset



One month later

CT scan shows a small (1cm diam) dark (low attenuation) infarct in the right cerebral white matter. MRI a month later shows the small infarct is starting to cavitate. But note that the MRI diffusion image can still be bright in lacunar infarcts for many weeks after stroke, like this one. Usually the diffusion image 'brightness' of the lesion will have gone by 2 months but most will still be visible on FLAIR, T2 etc.

# Acute lacunar infarcts on CT



CT scan shows a small (<1cm diam) infarct in the right deep grey matter. It is more difficult to see than the previous example, but it is still there.

MRI with diffusion and T2 imaging three days later clearly shows the small infarct.



# Acute and chronic lacunar infarct on CT



Six hours after stroke  
Lacunar stroke symptoms from the left cerebral hemisphere. A small lacunar infarct is visible in the white matter next to the lateral ventricle.



Three months later,  
there is an obvious 'lacune', or hole filled with CSF, indicating where the lacunar infarct is.

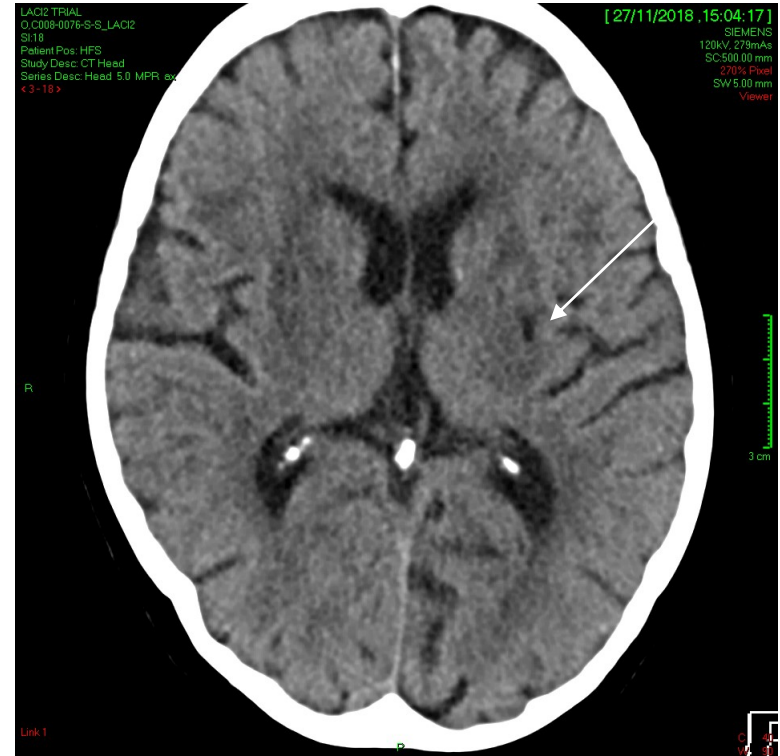
A follow-up CT scan can be a good way of identifying lacunar infarcts that are hard to see acutely.

# Acute and chronic lacunar infarct on CT

## Two different cases



6 hours after stroke  
Acute lacunar infarct in the posterior limb of the left internal capsule, which was consistent with the symptoms.



Lacunar infarct symptoms were many months before the scan. There is an old lacunar infarct (lacune) in the left deep grey matter consistent with the original symptoms. There is no cortical infarct.