

Haemorrhagic stroke

Characteristics

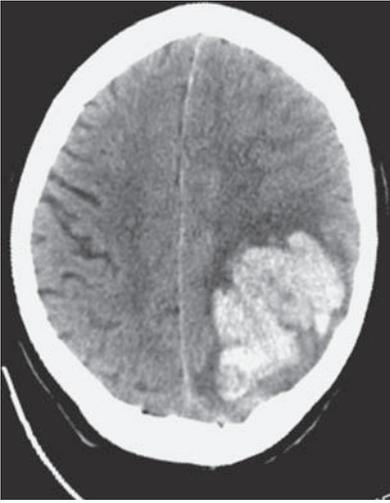
- Haemorrhagic strokes account for only 10–15% of CVAs.
- Haemorrhagic stroke is associated with a high mortality rate, with only about 40% of patients surviving the first year.
- Small intracerebral arteries, often damaged by chronic hypertension, rupture and blood leaks directly into the parenchyma.
- Haematoma, with resulting oedema, leads to mass effect and further compromise to blood supply.
- In patients who present early, about a third will have haematoma expansion over the first few hours.
- Risk factors:
 - Hypertension, underlying brain pathology, bleeding diatheses, anti-coagulation treatment, thrombolysis therapy and cocaine abuse.

Clinical features

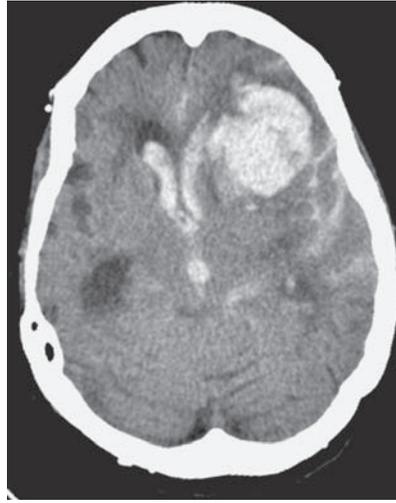
- Haemorrhagic and ischaemic strokes are difficult to distinguish clinically.
- Patients with haemorrhagic strokes are generally sicker, with abrupt onset and rapid deterioration.
- Common symptoms are headache, decreased conscious level, seizures, nausea and vomiting. Hypertension is characteristic.
- ECG changes may include myocardial ischaemia or dysrhythmias.

Radiological features

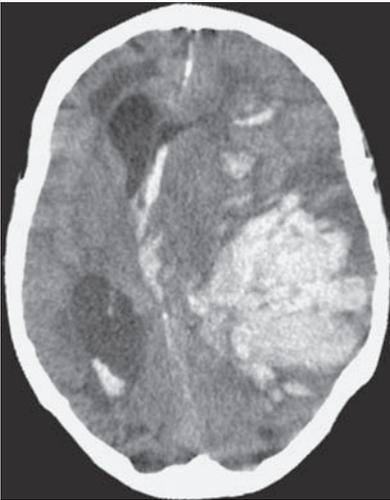
- Non-contrast head CT is the investigation of choice.
 - Acute haemorrhage is hyperdense.
 - Surrounding oedema will result in loss of the grey/white matter differentiation.
 - Mass effect will result in compression of overlying sulci, ventricular compression, midline shift and reduction in the size of the basal cisterns.
 - Site and size of the haemorrhage are important, and will influence future treatment options.



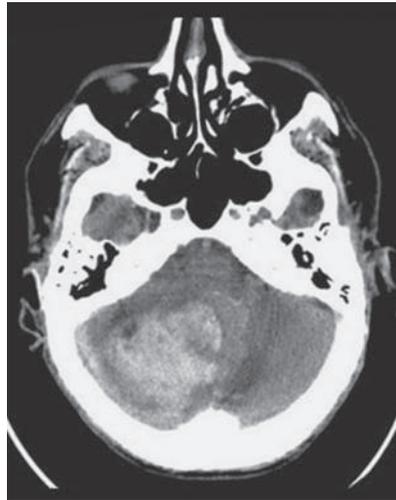
Large acute left parieto-occipital parenchymal haemorrhage.



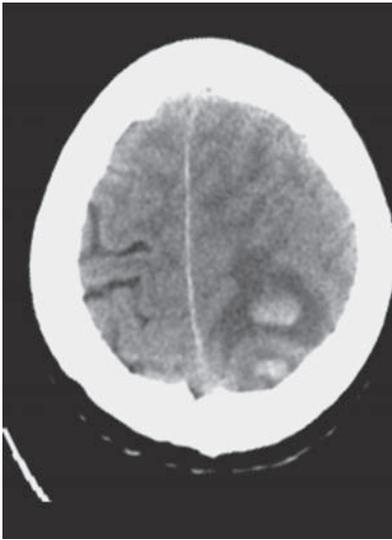
Right frontal haemorrhage with rupture in to the adjacent ventricles and further subarachnoid haemorrhage.



Large acute haemorrhage within the left middle cerebral artery territory, with rupture in to the ventricular system and mass effect.



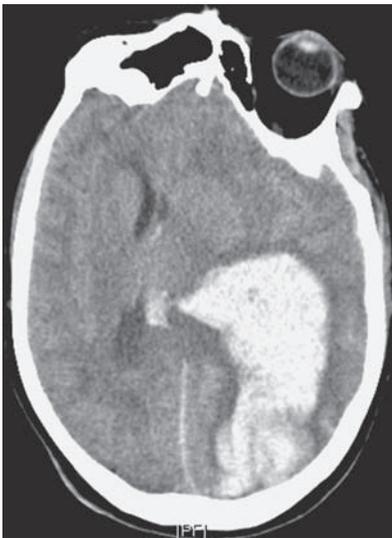
Acute parenchymal haemorrhage within the right cerebellar hemisphere.



Acute left superior parietal haemorrhage.



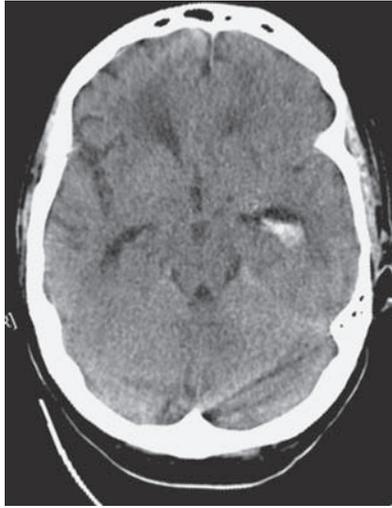
Large acute left parieto-occipital haemorrhage with rupture into the ventricular system.



Large acute left occipital haemorrhage with significant associated mass effect.



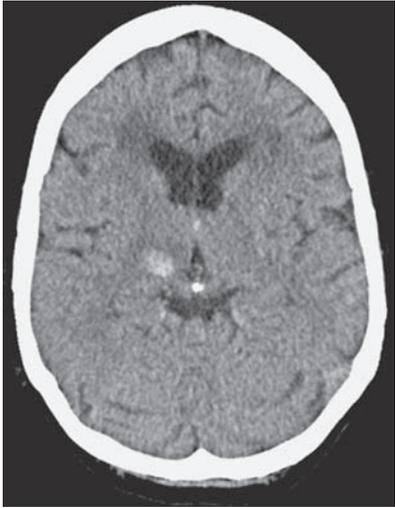
Acute haemorrhage centred on the left thalamus and lentiform nucleus with intraventricular rupture.



Acute haemorrhage layering in the left temporal horn.



Acute haemorrhage centred on the right thalamus and lentiform nucleus with intraventricular rupture.



Small acute right thalamic haemorrhage.



Acute intraventricular haemorrhage. Additional acute focal haemorrhage within the central pons.