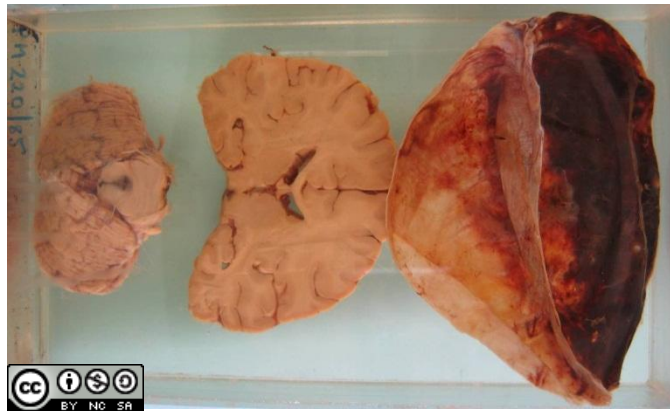


Subdural haemorrhage



Digital Pathology Collection

Case 11 2009

Ref. PM220/85



Clinical data

- The patient was a 60 year old man from the central Karoo. He had apparently been unwell for two weeks. A history of trauma to the head was not obtained.
- On arrival at Groote Schuur Hospital he was comatose with fixed pupils, the right slightly larger than the left.
- A CT scan of the head showed a 20mm low density right-sided subdural collection, with an 18mm shift to the left.
- A chronic right sided subdural haematoma was evacuated via a right frontal burr hole.
- His level of consciousness improved slightly but temporarily, and he died of an aspiration pneumonia.





Pathology



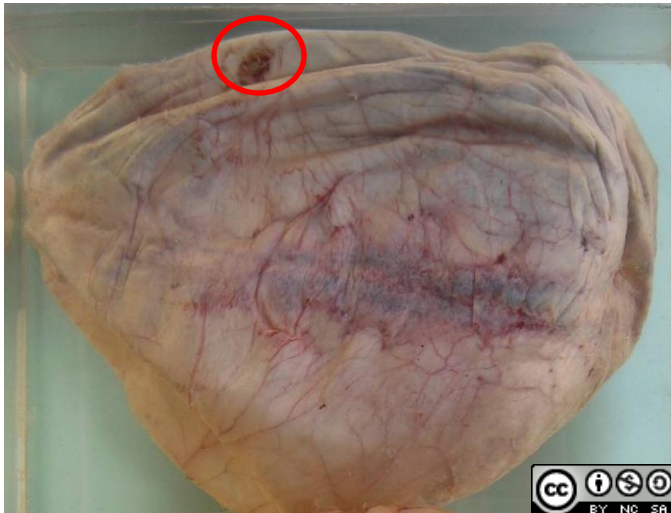
- This part of the specimen is the dura of the fronto-parietal region which has been stripped from the upper half of the skull.
- The inner surface shows residual **organising subdural haematoma**, extending over the whole surface of the right hemisphere.



Pathology



- A sealed burr hole opening can be seen on the right hand edge of the dura.



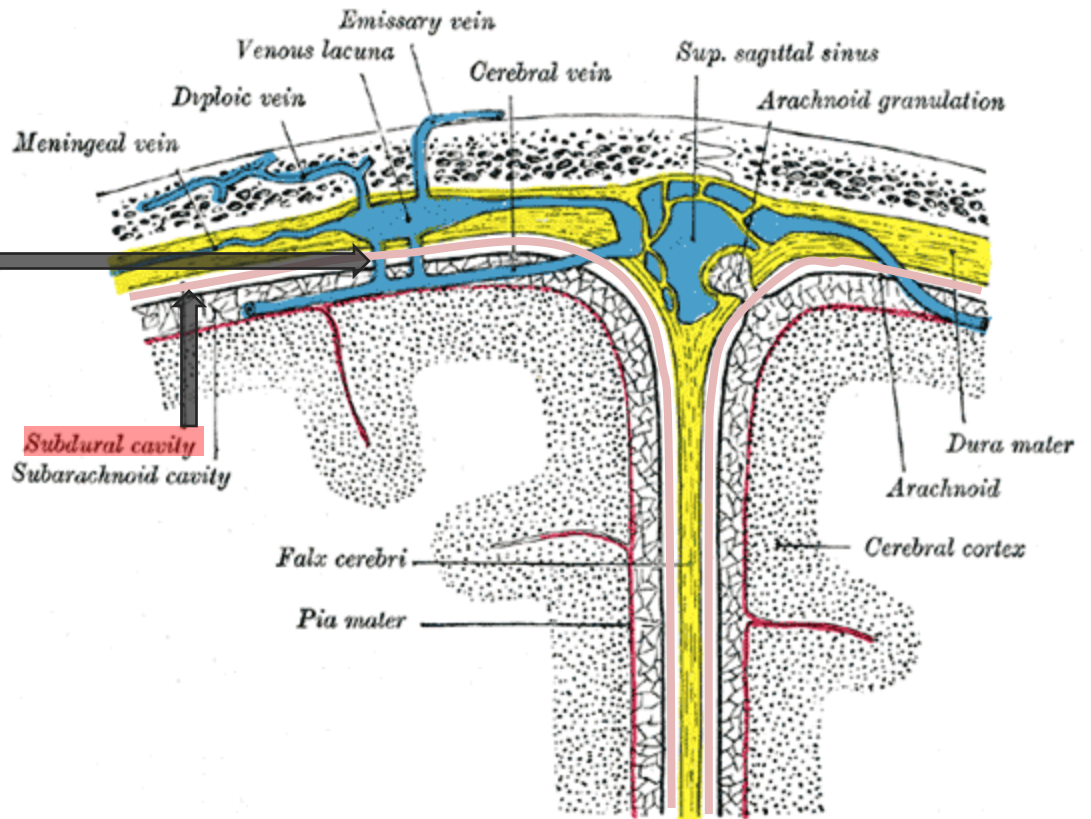
Histology

- Microscopy revealed attempted organisation of the haematoma with loose, fibrous, vascularised membrane enclosing two layers of haemorrhage, **suggesting that the haematoma increased in size over time due to repeated haemorrhage.**



Pathogenesis

- There is a potential space between the dura and arachnoid.
- **Bridging veins** cross from the surface of the cerebral convexities through the subdural space to empty into venous sinuses in the dura, and ultimately into the superior sagittal sinus.



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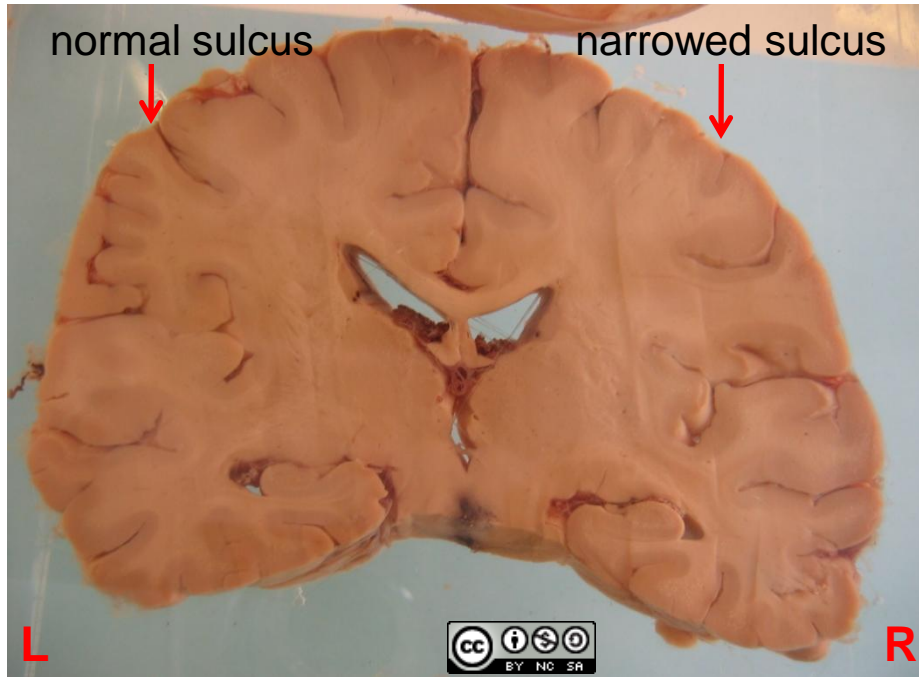


Pathogenesis

- These vessels are prone to tearing, especially in infants and in the elderly (in whom brain atrophy causes a widening of the subdural space so that bridging veins are stretched out).
- The resulting bleed spreads extensively over the brain contour because of the loose attachment of dura and subarachnoid membranes. (Compare extradural haemorrhage.)
- Subdural haematomas begin to organise within two weeks, but re-bleeding is common due to the fragility of vessels in the granulation tissue.

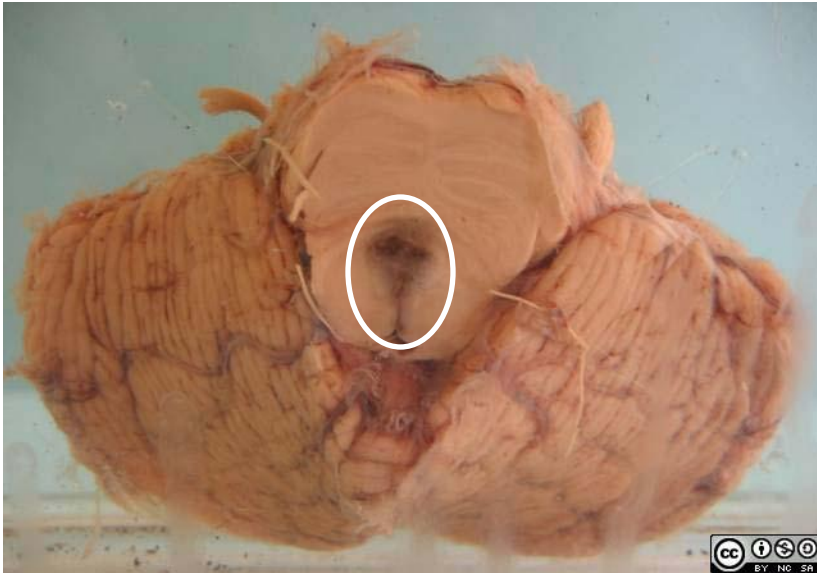


Pathology



- This coronal slice from the same patient shows swelling of the right hemisphere, with slight compression of the right lateral ventricle.

Pathology



- There is a midline midbrain haemorrhage, a consequence of raised intracranial pressure and caudal shift of the midbrain, with overstretching of the perforating branches of the basilar artery.
- The midbrain haemorrhage explains the limited improvement following drainage of the subdural haematoma in this patient.





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