



Xanthochromia

Subarachnoid haemorrhage (SAH) is a spontaneous bleed into the subarachnoid space, usually from a ruptured aneurism. The outcome is poor for patients where the SAH is missed.

CT scanning has a high sensitivity (98%) for detecting subarachnoid haemorrhage if performed within 12 hours of a bleed but sensitivity falls to about 50% after 1 week.

Haem in the CSF is converted to bilirubin over time. **Xanthochromia** = **bilirubin** in CSF.

Testing CSF for **Xanthochromia** is performed in the 2% of patients where the history is suspicious of SAH but CT is negative. Testing CSF for xanthochromia should be performed at least 12 hours after the time of possible haemorrhage.

Other causes of xanthochromia include cerebral bleed, head injury or traumatic tap.

Spectrophotometry will be performed here on site on all CSF samples when "xanthochromia" is specifically requested or when "? subarachnoid haemorrhage" is stated as clinical information on the request form.

A **false negative** result is possible if CSF is collected < 12 hours after suspected bleed.

A **false positive** result is possible if serum bilirubin is > 20 umol/L.

Oxyhaemoglobin and bilirubin is present in most patients with SAH.

Oxyhaemoglobin is found in BOTH subarachnoid haemorrhage and bloody taps.

It may also occur when there is a high CSF protein concentration or when the CSF is heavily contaminated with plasma as in a significantly bloody tap.

If the serum bilirubin and total protein levels are known, a calculation will be done to determine whether the observed level of CSF bilirubin is accounted for by elevated serum bilirubin. For this reason a serum sample from the patient (ideally taken on the same day if possible) is required.

Specimen Requirements:

CSF from Lumbar puncture: for routine microbiology and bilirubin detection; the sample should be a minimum of 1 mL and light-protected.

Sample must be **protected from light** - wrap sample in tin foil and reach the laboratory as soon as possible.

1 X Gold top SST tube for Serum Bilirubin and Total protein levels.

Turnaround Time: Within 3 hours

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CLINICAL UPDATE