ACCIDENTAL DURAL PUNCTURE

DEFINITION

Accidental dural puncture may occur during insertion of an epidural needle into the epidural space. This results in a cerebrospinal fluid (CSF) leak out of the intrathecal space and commonly results in a post-dural puncture headache (PDPH).

INCIDENCE

Epidural analgesia (including the combined spinal epidural technique) is a commonly used modality on the CWH delivery suite. Approximately 25% of women use this pain relief during labour, which means that over 1100 have an epidural per year. An 18g Tuohy epidural needle has a 0.5% risk of penetrating the dura during the siting of an epidural. Of these, 70% will then go on to get a PDPH. Note that a 26g spinal needle, used to deliberately penetrate the dura during spinal anaesthesia, results in a 0.2% incidence of PDPH.

HEADACHE ORIGIN

As the CSF is produced in, and surrounds and cushions, the brain within the cranium, it is theorized that CSF pressure and volume is reduced secondary to a leak in the lumbar dura. Painful intracranial vasodilation then occurs secondary to traction on meninges and blood vessels.

CLINICAL FEATURES

Most PDPHs begin within 3 days of the anaesthetic (though many 18g Tuohy needle punctures result in a headache within 24 hours). Untreated, they may last up to 6-8 weeks post-partum and may be severely debilitating. The diagnosis is made when the woman has a fronto-occipital headache which is postural in nature i.e. it is worse with sitting or standing. Occasionally the headache may manifest only as neck or shoulder stiffness, again improving on recumbancy. Associated symptoms include photophobia, unilateral deafness or diplopia.

DIFFERENTIAL DIAGNOSIS

Subdural haematoma, migraine, tension headache, paranasal sinusitis, cerebral vein thrombosis.

TREATMENT

Once the diagnosis has been confirmed by the anaesthetic team there are two treatment approaches. Initially (especially if it is less than 24 hours since the dural puncture) the treatment is aimed at symptomatic relief using simple analgesia (paracetamol, NSAIDs, codeine), hydration, and caffeine-

containing preparations (beverages, 'Nodoze', or caffeine 300mg tablets QID). The woman may mobilise as she desires and there is no need for bed rest specifically. Do not discharge without anaesthetic team review. The second approach involves the placement of autologous blood into the lumbar epidural space ("blood patch"). This is usually performed more than 24 hours after the onset of the PDPH. The woman returns to the care of the delivery suite anaesthetist for this procedure (70% initial success rate).