

As regards spinal anaesthesia, there have been techniques utilised in the past which have now been discontinued due to both acute and delayed adverse effects, which were largely due to preservatives and additives such as dextrose, which had been used to increase baricity of the injectate, thereby leading to loculation and pooling in certain areas (commonly the lumbosacral region).

Aldrete states that continuous spinal anaesthesia (CSA) which initially used wide-bore needles (thus carrying a high risk of spinal fluid leak), caused "repeated cases of cauda equina(syndrome) and TRI (transient radicular irritation)" after use of tetracaine, bupivacaine and lidocaine. Repeated doses of these agents led to concentration in dependent sites, and the small volume, high concentration injectate subsequently loculated in the dural cuffs around the nerve roots exiting from the spinal cord. He also remarked that "Some of the damage may be due to the presence of the catheter." He went on to state: "Although a resurgence of the technique is in progress, the stigma of the prior morbidity has not allowed it to regain popularity." This implies that it is in use in certain centres, which is a source of considerable concern.

Although epidural anaesthesia is the commonest route of administration, the technique of combined spinal-epidural anaesthesia is also used, being preferred as a method which allows the patient (often obstetric) the freedom to move about.

This means that the anaesthetic agent is in direct contact with the subarachnoid space.

Furthermore, as Aldrete states pertaining to epidural anaesthesia: "even in the best hands, unintentional, unrecognized dural entries may occur; it has also been shown that most substances may enter the CSF (spinal fluid) across the dural wall through microtubules."

Neurotoxic effects of anaesthetic agents(LAs) may be due to preservatives, but also to the vasoconstrictive properties of the LAs themselves, which leads to ischaemic damage, thus enhancing the neurotoxic lesions due to the preservative. Thus, even use of preservative-free solutions is not without significant risk to neural tissue: due to the direct effects of the LA and due to risk of traumatic damage by the needle or catheter.

In 1994, Palot et al,(1) in France, reviewed complications of obstetric anaesthetic in almost 300,000 cases over 5 years.

Accidental dural puncture was reported as 1:156, massive subarachnoid injections, 1:8010, convulsions 1:9011. Overall neurological complications occurred at a rate of 1:4700. These figures must be viewed in the proper context of young mothers who may have their quality of life severely impaired. One must also bear in mind that the longer-term adverse effects(such as arachnoiditis) may not be recognised as related to the anaesthetic and thus fail to be registered as ADRs, which means that the true incidence of neurological damage remains unknown, and therefore neither the medical personnel performing the procedure nor the patient receiving it, are fully aware of the true benefit: risk ratio (can the patient then give truly informed consent?).

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1 Palot M, Visseaux H, Botmans C et al Cah Anesthesiol 1994;42:229-233 Epidemiology of complications of obstetrical analgesia