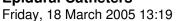


should be treated with epidural analgesia."

Meningitis:
1. Bacterial:
French authors Gorce et al. ([iv]) reviewed meningitis as a complication of spinal/epidural anaesthesia.
They noted that the sources of contamination are most often from the patient's skin flora or the anaesthetist's ear/nose/throat flora. They also mentioned aseptic meningitis arising from irritant substances in the subarachnoid space.
Bacteria in the blood (bacteraemia) or spreading local infection were another source.
The authors remarked that meningitis is
"a severe and uncommon complication of both spinal and epidural anaesthesia." Bouhemad et al., also in France, reported a case of Streptococcal meningitis following combined spinal- epidural anaesthesia for labour. ([v])
German authors Beland, Prien and Van Aken ([vi]) discussed administration of epidural anaesthesia in patients with systemic infections (bacteraemia or septicaemia).
They pointed out that usually this is regarded as an absolute contraindication for CNS block.
They suggested that infection might spread due to accidental vessel puncture, a change of pressure in the subarachnoid space, or the induction of a "locus minoris



resistentiae."

Whilst in animals meningitis can be induced by subarachnoid puncture during bacteraemia, there has not been an equivalent study that proves an increased risk for bacteraemia human patients.

The authors remark that transient bacteraemia is common, especially in urological and obstetrical-gynaecological procedures (which are often done using regional rather than general anaesthesia), but the incidence of infectious complications is actually quite low. Nevertheless, they advise:

" Antibiotic chemoprophylaxis should be given before the puncture and the patients must be closely followed after the anaesthesia, particularly for the development of spinal epidural abscess. Because of the possibly increased risk of infectious complications, informed consent should be obtained from the patient. "

Okano et al. ([vii]) reported a case of spinal epidural abscess associated with epidural catheterisation, and reviewed a further 29 similar cases in the medical literature.

11 of the 30 patients had some underlying disorders, including malignancy or herpes zoster, or were receiving steroids. 9 of the 10 patients with thoracic epidural abscess had persistent neurological deficits, whereas 12 of the 15 patients with lumbar recovered fully after treatment.

The authors noted that thoracic abscesses are associated with a poor prognosis.

Kranke et al. ([viii]) reported a case of lumbar epidural Staphylococcal abscess after a catheter epidural anaesthesia in a fit 34 year old woman, who underwent knee surgery. 7 days after operation, she experienced lumbar pain, headache and meninges.

MR revealed an epidural abscess at L3-4, which was drained surgically.

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- [iii] Smitt PS, Tsafka A, Teng-van de Zande F, van der Holt R, Elswijk-de Vries I, Elfrink E, van den Bent MJ, Vecht CJ. *Cancer* 1998 Nov 1;83(9):2015-22 Outcome and complications of epidural analgesia in patients with chronic cancer pain.
- [iv] Gorce P, Varlet C, Ouaknine B, Pourriat JL. *Ann Fr Anesth Reanim* 2000 May;19(5):375-81 [Meningitis after locoregional spinal anesthesia]
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- [vi] Beland B, Prien T, Van Aken H. *Anaesthesist* 1997 Jun;46(6):536-47 [Spinal and regional anesthesia in bacteremia]
- [viii] Okano K, Kondo H, Tsuchiya R, Naruke T, Sato M, Yokoyama R. *Jpn J Clin Oncol* 1999 Jan;29(1):49-52 Spinal epidural abscess associated with epidural catheterization: report of a case and a review of the literature.
- [viii] Kranke W, Angster R, Forst H. *Anaesthesist* 1999 Mar;48(3):169-72 [Epidural abscess following a lumbar epidural catheter for mobilization of the knee]