

Sarubbi and Vasquez ([\[i\]](#)) described spinal epidural abscess due to temporary epidural catheters.

They reported 2 cases and discussed a further 20 from medical literature.

On average the patients had the catheter indwelling for 3 days, and developed symptoms within 5 days. 63.6% had major neurological deficits, and 22.7% also had concomitant meningitis.

Staphylococcus aureus was the predominant pathogen. 38% of the patients had persistent neurological deficit.

Infections can also, of course, arise in permanent catheters.

Madaras-Kelly et al. ([\[iii\]](#)) described an unusual case of mycobacterium meningitis associated with a contaminated indwelling epidural catheter.

Smitt et al. in The Netherlands, ([\[iiii\]](#)) looked at the use of indwelling epidural catheters to treat cancer pain. They found that of 91 patients, technical complications and superficial infections occurred in as many as 43%, whilst deep infections occurred in 12 patients, 11 of whom had a spinal epidural abscess.

They concluded:

“Deep infection is a frequent complication of epidural analgesia and is associated with a high morbidity and mortality. Only cancer patients with a short life expectancy (< or =3 months) 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.

- [i] Sarubbi FA, Vasquez JE. *Clin Infect Dis* 1997 Nov;25(5):1155-8 Spinal epidural abscess associated with the use of temporary epidural catheters: report of two cases and review.
- [ii] Madaras-Kelly KJ, DeMasters TA, Stevens DL. *Pharmacotherapy* 1999 May;19(5):661-6 *Mycobacterium fortuitum* meningitis associated with an epidural catheter: case report and a review of the literature.
- [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]
- [v] Bouhemad B, Dounas M, Mercier FJ, Benhamou D. *Anaesthesia* 1998 Mar;53(3):292-5 Bacterial meningitis following combined spinal-epidural analgesia for labour.
- [vi] Beland B, Prien T, Van Aken H. *Anaesthesist* 1997 Jun;46(6):536-47 [Spinal and regional anesthesia in bacteremia]
- [vii] 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]