A further important point is that in patients with pre-existing spinal problems (including spina bifida occulta or arteriovenous malformation of which they may be unaware), the risk of problems may be higher.

McGrady and Davis([i]) raised this point in their 1988 paper, stating a 5-10% incidence of spina bifida occulta(SBO) in the general population and they contended that "Attempted epidural puncture at the level of the lesion will almost certainly result in a dural tap."

They describe a case of complications due to epidural anaesthesia in SBO and also raised the issue that cases like this had not been previously published, "although it is unlikely to be an isolated case."

If the epidural space is already compromised by disc herniation, stenosis or epidural fibrosis, the risk is greater. Yuen et al ([ii]) state that neurological complications " may be more severe in the presence of spinal stenosis".

Butler and Fuller in their 1998 study([iii]) concluded that "A previous history of back pain increases the likelihood of post-partum back pain following epidural anaesthesia".

Rocco et al ([iv]) in a study of pressure gradients in the epidural space, concluded that as resistance to inflow of fluid was significantly higher in the diseased epidural space, "spread of anesthetics might be difficult to predict".

[i] McGrady EM, Davis AG *Anaesthesia* 1988 Oct;43(10):867-9 Spina bifida occulta and epidural anaesthesia.

[ii] Yuen EC, Layzer RB, Weitz SR, Olney RK *Neurology* 1995 Oct; 45(10): 1795-801 Neurological complications of lumbar epidural anesthesia and analgesia.

[iii] Butler R, Fuller J *Can J Anaesth* 1998 Aug;45(8):724-8 Back pain following epidural anaesthesia in labour.

[iv] Rocco AG, Philip JH, Boas RA, Scott D *Reg Anesth* 1997 Mar-Apr; 22(2):167-77 Epidural space as a Starling resistor and elevation of inflow resistance in a diseased epidural space.