

Unintentional dural puncture during attempted epidural anesthesia occurs with a reported incidence of 1-5% depending on operator experience.

Because of the large size of epidural needles, post dural puncture headache (PDPH) following dural puncture occurs in as many as 85% of patients.

Treatment for this headache is often a 'blood patch' where blood is taken from the patient's arm and injected into the epidural space to plug the hole in the dura.

Typically 15 to 20 ml of blood is injected into the epidural space at the level of the dural puncture.

As much volume as possible is injected until the patient begins to complain of back or leg discomfort.

Although immediate relief occurs in up to 90% of patients, headache returns in over half, so that a second injection or a continuous infusion may be necessary to produce sustained relief.

Unfortunately, this treatment is not without risk and can have unwanted effects. Use of prophylactic epidural blood patches is controversial.

Common side effects of epidural blood patch include pain at the site of injection and back and lower extremity discomfort. Less common complications include compression of nerve roots and radiculopathy with resultant lower extremity sensory disturbances and weakness.

Blood in the subarachnoid space is highly irritant and can cause arachnoiditis.

If performed within the first 24 hours, an EBP is ineffective in 70% of cases (4% in patients after 24 hours). ( [ii](#) )

Duffy and Crosby ( [iii](#) ) reviewed the technique of EBP and found that it fails to provide symptomatic relief in 25-30% of PDPH. Other possible treatments for post-dural puncture headache include caffeine and non-blood products such as saline instead of blood.

Whilst epidural crystalloid preparations appear less effective than blood, an isolated report suggested that Dextran 40 might be useful; the authors of the review, however, express concern as to safety considerations.

Although prophylactic measures are being investigated, EBP will no doubt continue to be used in patients who suffer inadvertent dural puncture in a variety of epidural procedures.

This of course, contributes further to the risk of arachnoiditis associated with perispinal injections.

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[\[i\]](#) Source: <http://depts.washington.edu/anesth/regional/diplopia.html#questions>

[\[ii\]](#) Duffy PJ Crosby ET *Canadian Journal of Anaesthesia* 1999; 46(9): 878-886 The epidural blood patch. Resolving the controversies.