How to remove epidural catheters

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Epidural analgesia is a highly effective mechanism for controlling acute pain following surgery or trauma to the chest, abdomen, pelvis or lower limbs (Royal College of Anaesthetists, 2004).

Because of this clinical effectiveness, delivery of analgesia via an epidural catheter is now common practice in acute care environments.

In many cases epidural analgesia is used to administer local anaesthetics and opiates, singularly or in combination and as one-off or top-up doses into the epidural space. Continuous, low-dose infusion is considered to be more effective and to have fewer unwanted opiate side-effects, so it is more common in clinical practice.

Patient-controlled epidural infusion usually allows a patient to administer small bolus doses of analgesia on top of a background continuous infusion. This technique empowers patients to take a more active role in managing their pain but may have some limitations.

**Removal**

In the acute setting epidural catheters should only be used for a limited duration because of the relatively high infection risk associated with their use. The incidence of epidural abscess formation may be as high as one in 2,000 patients. Although other factors come into play this risk is increased where catheters remain in situ for more than three days (Wang et al, 1999).

It should be reiterated that cessation of epidural analgesia should not mean the cessation of analgesia itself and alternative delivery systems, enteral or parenteral, should be established before the catheter is removed if they are required.

The removal of epidural catheters has become a required skill for nurses in many acute, obstetric and post-surgical care units. Protocols for removal of catheters should and do exist. Many trusts employ a dedicated acute pain team to offer advice and support in all areas of acute pain management.

**The risks**

Catheter removal in some patients may carry a high degree of risk, particularly in those who may have impaired clotting mechanisms. Expert advice from an anaesthetist or the acute pain team should be sought in these cases.

Administration of anticoagulant and/or antiplatelet therapy should be organised around planned catheter removal, minimising the risk of epidural haematoma formation. Guidelines differ depending on the type of anticoagulant therapy being used, and in each case the patient and their condition and conjunctive therapy must be considered.

Care must be taken to ensure anticoagulant therapy is not administered immediately after catheter removal. Expert advice should be sought on the timing of recommencement of therapy.

**Equipment required**

- Dressing pack/sterile gloves.
- Antibacterial skin cleansing solution.
- Occlusive dressing.

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**Fig 1. The lateral decubitus position**

**Fig 2. Wash hands, don clean apron**

**Fig 3. Remove the dressing**
Patient preparation
Informed consent must be obtained prior to undertaking any procedure on any patient. Attempts should also be made to allay any anxieties.

There appear to be no specific guidelines for the correct positioning of patients for removal of epidural catheters although a lateral decubitus (Fig 1) position appears to be generally accepted.

The procedure
- Wash hands and put on a protective apron (Fig 2).
- Open dressing pack.
- Remove dressing from patient, anchoring the epidural in order to ensure it is not removed inadvertently (Fig 3).
- Apply sterile gloves.
- Apply traction to catheter. If resistance is felt stop the procedure, ensure patient safety and seek assistance (Fig 4).
- Check the catheter tip to ensure integrity (Fig 5).
- Clean the skin with the antibacterial solution, allow to dry.
- Apply an occlusive dressing (Fig 6).
- Reposition patient to ensure they are comfortable.
- Dispose of waste, wash hands and document the procedure.
- Ensure the patient receives the correct observation and educate them to alert staff of any motor or sensory disturbances.

After removal
Following removal the catheter tip should be checked to ensure it is intact, this is indicated in most products by a complete blue tip (Fig 5). If fragmentation is suspected, seek expert advice. The access site should be checked frequently after catheter removal for redness, pain or swelling. This may be easier if a transparent occlusive dressing is applied.

After removal, sensory or motor disturbances must be observed for and reported immediately via the appropriate mechanisms.

REFERENCES


PROFESSIONAL RESPONSIBILITIES
All nurses who remove epidural catheters must have received approved training, undertaken supervised practice and demonstrated competence in the clinical area. The onus is on the individual to ensure knowledge and skills are maintained from both a theoretical and practical perspective. Nurses should also undertake this role in accordance with their organisation’s protocols, policies and guidelines.