Information for patients

Spinal Cord Monitoring
during surgery

Department of Neurophysiology
Spinal Cord Monitoring during surgery

This leaflet is designed to give you some information about the spinal cord monitoring your surgeon has asked us to perform during your spinal surgery.

During your operation we send tiny signals up and down the spinal cord. This monitoring helps reduce the risks of spinal cord damage during the surgery but cannot eliminate these risks entirely.

Before the surgery

We normally perform a pre-operative sensory evoked potential (SEP) before your operation. This will have usually been performed prior to your admission for surgery or will be performed in theatre once you are asleep. The test records the signals to help us study how well the nerves in your arms and legs are working. It allows us to see what your SEPs are like and establish whether your spinal problems have affected these nerves. During your surgery we can use these studies as our reference.

The day of your operation

You will be taken to theatre and into the anaesthetic room. After you have gone to sleep we will position the small needle electrodes in your arms, legs and head. We need to use a special type of glue to ensure the electrodes stay on your body throughout the operation. These needles are for single use and are disposed of after each patient.
**During the surgery**

We will perform the monitoring during your surgery. There are 2 types of tests that we may carry out.

Sensory Evoked Potentials (SEP) test the nerve pathways from the arms and legs through the spinal cord to the brain. The nerves in the arms and feet are stimulated and recordings are made at the knee, shoulder and head using small needle electrodes. We may also be able to record the response directly from the spinal cord with a spinal electrode which is inserted by the surgeon into the space next to the spinal cord. The SEP tests are performed at short intervals throughout the surgery. If there are any significant changes we inform the surgeon.

Motor Evoked Potentials (MEP) test the pathways from the brain to selected muscles in your arms, legs or feet. We do this by stimulating part of the brain with electrical pulses through small needles placed just under your skin on the head and recording from needles placed in certain muscles in your arms, legs or feet. This test is performed at short intervals throughout the surgery. If there are any significant changes we inform the surgeon.

**After the operation**

All the electrodes will be removed before you wake up.

**Are there any additional risks by having monitoring during my surgery?**

Some minor bruising may occur at the sites of where the needle electrodes have been inserted.

Please inform the anaesthetist or surgeon if you have epilepsy or have had epileptic seizures in the past.
We must obtain your consent for any procedure beforehand. Your surgeon will explain all the risks, benefits and alternatives of the surgery before they ask for your consent. If you are unsure about any aspect of this procedure, please do not hesitate to ask for more information.

What if I want any further information?

If after reading this leaflet you are unsure about anything please ring the Department of Neurophysiology, Royal Hallamshire Hospital on: Tel 0114 271 3237. Mon-Fri 08:30-16:30

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