Your Brachial Plexus Block

INFORMATION TO HELP PATIENTS PREPARE FOR A BRACHIAL PLEXUS BLOCK

Directorate of Anaesthesia

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Introduction

This leaflet describes what happens when you have a brachial plexus block, together with the side effects and complications that can occur. It aims to help you and your anaesthetist make a choice about the best anaesthetic technique for your operation.

What is a brachial plexus block?

The nerves that supply sensation and power to your arms and shoulder come from your neck. They pass behind your collar bone and through your armpit to reach your arm.

A brachial plexus block is an injection of local anaesthetic around these nerves. It can be done at any point along their course. The local anaesthetic is a drug that temporarily prevents nerves working. This makes your arm and /or shoulder go numb or you get ‘pins and needles’, a bit like having an injection at the dentist. Your arm also feels heavy and floppy, and warm.

What is the brachial plexus block for?

Injections of local anaesthetic provide good pain relief. The block can be used as the sole anaesthetic for operations on the shoulder, arm or hand. It can also be used with a general anaesthetic. In this case the block may be done either awake before the general anaesthetic or after you are asleep.

How is the injection done?

There are different sites that can be used to block the nerves. The site chosen will depend on the operation and your anaesthetist's preference. Common sites used are the side of the neck, the base of the neck, the front of the shoulder or the armpit.

After cleaning the skin, local anaesthetic is injected under it. This stings a little. The needle is then passed through this numb skin, so all you feel is some pushing. You may get an electric shock sensation going down your arm if the needle touches a nerve. This will not last long and is not serious.

When the local anaesthetic is injected it again stings, but not for long. At this stage it is usual to feel sensation in your arm or shoulder such as aching or tingling.
In order to identify and numb the nerves supplying the arm one or more of the following methods may be used:

- **Nerve Stimulation:** This means delivering a small electrical pulse through the needle-tip. This causes the muscles supplied by that nerve to twitch briefly and may be associated with a mild tingling sensation in that area. Once the needle-tip is judged to be close enough to the nerve and a very small current elicits a response, local anaesthetic drug is injected.

- **Ultrasound:** this device allows the doctor to see on a screen the nerves he wishes to anaesthetise. It uses high frequency sound-waves that are reflected back to a probe that rests on the overlying skin. These sound-waves cannot usually be detected by the human body.

- **Intravenous regional anaesthesia:** A tourniquet is placed on the upper arm and inflated to a pressure higher than your blood pressure. Local anaesthetic drug is then injected into a vein in the hand and spreads to numb the whole arm below the tourniquet.

**Will it hurt?**

Unfortunately, all types of anaesthesia require the use of a needle and syringe. This is often uncomfortable. However, the doctors performing the injections are very experienced and endeavour to minimise any discomfort.

If you are not having a general anaesthetic you may feel some `pins and needles`, touch or pressure during surgery but you should not feel any pain. In case you are particularly nervous or uncomfortable with any of the procedures, a cannula is inserted into a vein of the other arm and one or more drugs may also be used to ensure your comfort. These drugs are primarily used to provide light sedation or pain relief.

**Will it work?**

Every anaesthetic is examined to ensure its adequacy prior to entry into the operation room. In a small number of patients additional local anaesthetic needs to be administered to provide complete anaesthesia of the arm. Typically it takes 5 to 10 minutes to perform a regional anaesthetic technique. Once the drug is injected it then takes 15 to 40 minutes for it to take full effect. When complete you will be brought to the operating room, installed comfortably and a screen erected so that you are unable to see the operation.
When is local or regional anaesthesia unsuitable?

If you are one of the rare people allergic to a local anaesthesia drugs, these techniques may be unsuitable for you.

An infection at the injection site may be spread further by inserting a needle. If necessary, another injection site may be used but, in general, it is better to treat the infection first.

If you are on any 'blood-thinning' drugs it is important you inform your surgeon or anaesthetist at the earliest opportunity. In order to carry out these procedures safely, you may have to stop this medication or have an alternative prescribed.

Other rare conditions exist where regional anaesthesia is unsuitable. Your anaesthetist will enquire as to whether you have any of these. However, if you have any doubts please ask.

How long will the brachial plexus block last?

This depends on the technique used by your anaesthetist. It varies from a few hours to all day. Occasionally it may still be acting the next day. Sometimes a plastic tube, (or catheter) is left alongside the nerves so that the local anaesthetic can be given continuously for a few days after the operation to keep you comfortable.

What are the advantages?

Using local anaesthesia or regional anaesthesia alone means you can be awake while having your operation.

Better pain relief than other methods. This is especially true for operations on the shoulder, where the block helps you get moving again after your operation.

The complications of a general anaesthetic are reduced, e.g. nausea, vomiting, headache and drowsiness. If you have a general anaesthetic you will require less drug to keep you asleep so you will still feel better after the operation than if you had not had the block.

Surgery can be carried out as a day procedure. Patients having local or regional anaesthesia are typically fit for discharge sooner than patients receiving general anaesthesia.

If you have other medical problems this may be a safer technique for you.

As the local anaesthetic drugs last for a number of hours after surgery finishes you will remain pain free for this period. Simple pain relieving medicines such as paracetamol or ibuprofen are usually adequate to treat any pain you may then have.
Are there any side effects?

All the side effects and complications described can occur without a block. Side effects are common, are usually minor and are easy to treat. Serious complications are fortunately rare. The risks of complications should be balanced against the benefits and compared with alternative methods of pain relief. Your anaesthetist can help you do this.

People vary in how they interpret words and numbers

This scale is provided to help

<table>
<thead>
<tr>
<th>Very common</th>
<th>Common</th>
<th>Uncommon</th>
<th>Rare</th>
<th>Very rare</th>
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<tbody>
<tr>
<td>1 in 10</td>
<td>1 in 100</td>
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Common

Sometimes if the local anaesthetic is not injected close enough to the nerves, the block does not work or is patchy. If this happens you may be given another injection, the operation may go ahead under a general anaesthetic or, very occasionally, your operation may have to be postponed to another date. We will do all we can to avoid this. Sometimes the local anaesthetic can affect other nerves close to the nerves that supply your arm. If this happens you can get a droopy eyelid and red eye, a feeling of difficulty breathing, numbness at the side of the face/ear or a hoarse voice. These are not serious and settle as the block wears off.

Uncommon

Bleeding. If the needle damages a blood vessel you may get bruising under the skin. This is rarely serious.

Catheter infection. If a catheter is used to control your pain after the operation, it can become infected. If this happens it will be removed and you may be given antibiotics. It is very rare for the infection to spread further than the insertion site in the skin.

Rare/Very rare

Complications, such as temporary nerve damage and serious breathing difficulty are rare whilst permanent nerve damage, convulsions, cardiac arrest (stopping of the heart), very serious drug reactions and pneumothorax (collapse of the lung) are very rare indeed. All these serious but very rare complications can happen with general anaesthesia.

In comparison, you are more likely to die from an accident on the roads or in your own home this year than suffer permanent damage from a brachial plexus block. These risks can be discussed further with your anaesthetist. Other side effects and complications are possible depending on the exact site of injection.
On the day of surgery

Please bring all your regular medicines with you. Unless you receive instructions to the contrary, you should take your medicines as usual on the morning of surgery with a small amount of water if necessary. If you are diabetic or on ‘blood-thinning’ drugs, you will receive special instructions on fasting and what medicines to take. As a general rule, you may only drink water up to 2 hours before surgery, i.e. 06.30am if having surgery in the morning or 11.30am if having surgery in the afternoon. You may eat a light meal up to 12 midnight if having surgery in the morning or 06.30am if having surgery in the afternoon.

How do you look after your arm?

While your arm is numb and floppy you may not know where it is and there is a risk of it getting damaged. For protection you will be given a sling to keep your arm in until it has returned to normal. This will not prevent you doing your physiotherapy.

What do I take for pain relief when the local anaesthesia wears off?

It is very important to take pain relieving medication when you get home and BEFORE the block wears off.

General advice:

Take paracetamol 1g 4 – 6 hourly (do not exceed 4g in 24 hours)
You can also take ibuprofen 400mg 6 hourly
If necessary you can also take dihydrocodeine 30mg 4 hourly with the paracetamol and ibuprofen

You must discuss with the doctor/nurse what pain relieving medication to take if:

-you have any medical conditions (e.g. asthma, stomach ulcers or kidney problems)
-if you are allergic or sensitive to any of the above medication
-if you have any other concerns.

Questions

If you have any questions please do not hesitate to ask your anaesthetist or nurses on the ward.
Some useful telephone numbers are listed on the next page.
Sources of further information:

www.lancsteachinghospitals.nhs.uk
www.nhsdirect.nhs.uk
www.patient.co.uk
www.youranaesthetic.info
Royal College of Anaesthetists – www.rcoa.ac.uk
Dept. of Anaesthesia Royal Preston Hospital Tel:01772 522555
Dept. of Anaesthesia Chorley and South Ribble Hospital :01257 245771
Day Case Unit at Royal Preston Hospital:01772 523915
Leyland Day Case Unit at Chorley Hospital:01257 245748
Royal Preston Hospital switchboard 01772 716565
Chorley Hospital switchboard: 01257 261222

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