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AVANCE nerve allograft: Information for patients

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Nerves are the electrical cables within our body controlling movement in our muscles and allowing us to feel touch, temperature and pain. If nerves are cut they have to be repaired to allow movement and feeling to return. If a section of a nerve has been lost or damaged this can be rebuilt. Sometimes nerves can be directly repaired by stitching the two ends together. However, when a section of nerve has been lost or significantly damaged, this is not possible. To replace the damaged segment your surgeon may suggest taking a section of nerve from elsewhere and 'grafting' it into the gap. This new piece of nerve may be from somewhere else in your body (autograft), or donated from another person (allograft). This leaflet is designed to explain nerve allograft.

What is nerve allograft?

Nerve allograft is a piece of nerve tissue donated by another human after their death. It is carefully screened to minimize the risk of transmission of common infections, and is then treated to remove human cells, leaving only the basic scaffolding of the nerve. It is then sterilised, making it safe for donation.

How is nerve allograft used?

Allograft is stored frozen and is thawed just before it is used. The allograft is used to provide a bridge across a gap in your nerve, allowing your own nerve cells to grow across the gap and restore movement or feeling. The allograft is usually stitched into place by your surgeon using a microscope.

What are the alternatives to using nerve allograft?

A damaged nerve can be left untreated. There are some areas of the body where sensation (being able to feel) is not important and leaving a nerve unrepaired will not affect you. You may choose not to undergo

surgery to repair your nerve.

Nerve autograft is when a section of a less important nerve from another part of your body is taken to replace the nerve that is lost. Until nerve allograft was developed this was the only method available and is still the recommended treatment in certain situations that your surgeon should discuss with you. The disadvantage of using your own nerve is that the site from where the nerve is removed will have reduced feeling and there will be a scar. There is a small chance that the cut end of the nerve, from this site, can form a painful lump known as a neuroma.

What will happen after the operation?

Your surgeon will explain how your nerve injury has been treated, the physiotherapy plan and the expected recovery for your nerve injury. Following repair your nerve will regrow from the original site of injury into the allograft across the gap. The nerve cells must grow all the way back to the muscles or skin and so recovery is usually over many months. The rate of nerve growth is usually about 1mm per day. However, people may recover at different rates, and there is always some uncertainty regarding the success of nerve regrowth. Your surgeon will monitor your recovery in the clinic. You can ask your surgeon for an estimate of how long it may take. When feeling first returns some patients describe a sensation of “sharp tingling” or “pins and needles” which slowly improves with special exercises advised by your therapist. Some patients notice that their sensation becomes worse before improving. When the nerve controls muscle movement, the first sign that the nerve has reached the muscle is tenderness on squeezing the muscle. This is followed a few weeks later by flickers of contraction in the muscle and finally after a few months, stronger contractions that allow movement.

Will I return to normal after my repair?

Feeling and movement are never normal after a nerve injury. There are many factors that influence the success of a nerve allograft procedure. The aim is to give you the best result possible.

What are the complications of nerve grafting?

The results and potential complications of nerve autograft and nerve allograft are similar. Nerve repair does not restore normal function. Most patients report sensitivity to hot or cold temperatures that can last for several years after a nerve injury. In a small number of patients, the nerve may fail to regrow and form a painful lump called a neuroma at the site of injury.

Finally, there are risks of complications from any surgery, including infection, pain, bleeding, sensitive scar formation and reactions to medications.

Are there any disadvantages of using nerve allograft?

Nerve allograft is approved for use in the UK. There has been lots of research to show that it is safe and to demonstrate how well it works for rebuilding nerves in the hand that are used for feeling. The amount of research for use in larger nerves that control both movement and feeling is currently more limited.

The National Institute for Health and Care Excellence (NICE) has examined all of the available research on the use of nerve allograft and recommended continued collection of data and measurement of outcomes across the UK. Your surgeon will discuss how this data is collected, stored and analysed.

What should I do if I need more information?

More information on nerve allograft is available on the NICE website: www.nice.org. This is a website built for healthcare professionals, not patients, and so can be difficult to navigate. Your surgeon will be able to go through anything you need more information on.



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