



**Congenital
Heart Disease
Network**



The Newcastle upon Tyne Hospitals
NHS Foundation Trust

Cardiothoracic Information for parents or carers Electrophysiology study

Introduction

This information leaflet has been produced to provide your child with information about what to expect when your child is admitted to Ward 23 for an electrophysiology (EP) study and ablation.

Electrophysiology study

An EP study is used to look at the electrical signals making your heart pump blood around the body. The heart muscle sends out an electrical signal every time your heart beats. Usually you won't feel it, but if you have an abnormal heartbeat (arrhythmia), you might sometimes feel your heart fluttering or pounding. An EP study enables doctors to look at the electrical signals your heart muscle is making so that they can work out how to control your abnormal heartbeat using a method called ablation.

An EP study is a keyhole procedure where the doctor puts a catheter (thin, soft, plastic tube) into a vein at the top of your leg and threads it through to your heart. Using this technique, the doctor can measure the electrical signals to see if there are any abnormal ones causing your arrhythmia or racing heartbeat and if needed, treat the problem during the same procedure.

Stopping medication before the procedure

To help ensure the EP study provides the most accurate results, some heart rhythm medications may need to be stopped 5 days before the procedure. These medications can affect the heart's electrical activity and make it more difficult to identify or treat abnormal rhythms. Your Cardiac Nurse Specialist will confirm with you what medication needs to be stopped.

If your child becomes unwell or experiences worsening symptoms after stopping their medication, please seek medical advice immediately and inform the cardiology team.

Getting ready

You will have seen a doctor and the cardiac rhythm nurse specialist in the clinic before your procedure. They will have explained the EP study and/or ablation in detail and answered any questions you or your parents might have had. If you have any more questions, please do not hesitate to get in touch. Contact details at the end of this leaflet.

Most EP studies are done when you are under a general anaesthetic. This is where you are given medicine to make sure you are fully asleep and makes it much more comfortable and easier for you to lie still while the study is happening.

You will need to stop eating and drinking for a few hours before the study is due to start so the anaesthetic is as safe as possible. We ask you not to eat from midnight the night before and drink only still water until admission, unless you are told otherwise.

The day of the EP Study and/or ablation

We try to do most EP studies as a day case. This means that you come into hospital in the morning and can usually go home that evening, without having to stay in hospital overnight. If you have an EP study late afternoon, then you might need to stay overnight and will go home early the following morning. This depends on how quickly you recover from the anaesthetic medicine.

Your admission letter will tell you what time to come to Ward 23 at the Freeman Hospital. If you haven't signed it already, your doctor will explain the procedure again and ask you and your parents for permission to carry out the procedure – this is called consent. An anaesthetist (specialist airway doctor) will also visit you to explain about what is involved with the anaesthetic.

Your nurse will check that you are ready for the EP study and/or ablation by checking your general observations such as height, weight, temperature etc and help you into a hospital gown before accompanying you to the anaesthetic room (Your parents can also go with you). The anaesthetist will give you medicine with either a mask or a small needle in the back of your hand so you can't feel anything or know what is happening during the procedure.

EP study

Once you are asleep and under anaesthetic, the doctor will stimulate your heart and measure the electrical signals from various areas of your heart. These signals will identify the problem with your heart rhythm.

Ablation

Catheter ablation is a treatment that aims to control or correct certain types of abnormal heart rhythms. It uses either heat (radiofrequency ablation) or freezing (cryoablation) on an area of the heart that is causing the abnormal heart rhythm. This treatment creates scar tissue which breaks abnormal circuits in the heart or disrupts areas of the heart muscle which are triggering arrhythmias.

After the EP study or ablation has finished, the doctor will remove the catheter through the veins the same way it was inserted. Pressure will be applied on the area where the catheter was inserted to help it to heal, these sites usually only take a week to recover.

Occasionally, the doctors are unable to find any abnormal rhythms and the test, or another study may need to be repeated at a later date.

Are there any risks?

As with all procedures, there are risks and complications which are rare, and your doctor will explain these to you at the time of admission.

Healthy children cope well with anaesthesia, but the risk increases if you have other health conditions. The risk is still very small.

The risk of infection is also very small, as there is only a small mark where the needle is inserted at the top of your leg. There is a risk of bleeding from the catheter site afterwards, but applying pressure reduces this greatly, although you may have a bruise there for a few days. Once back on the ward you will be encouraged to lie as flat as possible for four hours to help prevent this. The

groin area might also feel a bit sore and stiff for a few days afterwards, but usually paracetamol is enough to deal with any pain.

There is a small chance that a clot could form in the vein and might need treatment, but this is rare.

The ablation part of the procedure also carries some small risks: around 1 in every 100 procedures for radiofrequency ablation and 1 in every 1000 for cryoablation. There is a chance that a clot could form in the heart but, like clots in the vein, these can be broken down with treatment.

Following your ablation you will be started on an anticoagulant (a blood thinning medication) for three months, this is to help prevent a blood clot forming.

Depending on the area of the heart needing ablation, very rarely, a pacemaker needs to be inserted afterwards, particularly in certain areas of the heart.

The procedure may also cause bleeding around the heart (pericardial effusion), but this can be identified quickly using the x-rays and stopped, sometimes however it may need to involve a surgical procedure to drain the fluid that has accumulated around the heart.

As x-rays are involved in EP studies and ablations, we will ask all girls aged 12 years or older about their periods and ask for a urine (wee) sample for pregnancy testing.

All these risks will be discussed during the consent process.

What happens afterwards

- When you are awake from the anaesthetic, you will return to the ward.
- The nurses will be checking how well you are recovering by measuring your heart rate, blood pressure and respiratory rate.
- There will be a dressing over the catheter site (either on one side or both), and you will need to lie flat on your back for at least four hours afterwards to let the catheter site heal.
- You might feel a bit sick after the anaesthetic, the nurses on the ward can give you medication to help with this.
- Once you feel awake and better, you can have a drink and something to eat.
- When the nurses are happy that you have recovered well, you will be able to go home.
- On discharge you will be given an information leaflet on what to expect following discharge, this will be discussed with you by the children's cardiac rhythm specialist nurse or your ward nurse.

For further information

Contact details

Ward 23 0191 2137023 (24 hours)

Paediatric Rhythm and ICC Nurse Specialist: 0191 213 9633

Children's Cardiac Nurse Specialist's: 0191 213 7344 Email address: nuth.ccns@nhs.net

The Cardiac Nurse Specialists are available 09.00am to 5.00pm Monday to Friday. If there is no answer please leave a voicemail, and they will endeavour to return your call within 24 hours. If urgent, please contact ward 23 for advice.

PALS (Patient Advice and Liaison Service) for help, advice and information about NHS services. You can contact them on freephone 0800 032 02 02, email pals@nhct.nhs.uk.

<https://www.northumbria.nhs.uk/patients-and-visitors/share-your-feedback/patient-and-advice-liaison-service-pals#9882d87e>

Useful websites

If you would like further information about health conditions and treatment options, you may wish to have a look at the NHS website at www.nhs.uk

If you would like to find accessibility information for our hospitals, please visit www.accessable.co.uk

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