



Breast Hookwire Localisation

Consumer Information

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What is a breast hookwire localisation?

Mammography, ultrasound and magnetic resonance imaging (MRI) scan images or pictures sometimes show abnormalities in the breast that cannot be felt by a doctor. If the abnormality is to be surgically removed, it is necessary to place a fine wire, called a hookwire, in the breast with its tip at the site of the abnormality. This acts as a marker during surgery and enables the surgeon to remove the correct area of breast tissue.

The hookwire is inserted to guide the removal of both benign (non-cancerous) and malignant (cancerous) abnormalities. Mammography, ultrasound or MRI scans are used by a *radiologist* (specialist doctor) to place the hookwire into the correct position. The wire is called a hookwire because there is a tiny hook at the end, which keeps it in position.

Breast hookwire localisation is done using local anaesthetic to numb the breast in the area where the hookwire is to be inserted.

How do I prepare for a breast hookwire localisation?

Usually, this procedure will be performed a few hours (or less) before you have surgery to remove the abnormality. There is no preparation required for the hookwire localisation, but there will be preparation for the surgery done after the hookwire localisation. Preparation instructions/information for the surgery will be given to you by the hospital where you are having the surgery done.

You should bring with you to the hookwire localisation any recent mammograms, ultrasounds or MRI scans and the reports for the radiologist performing the procedure to review before you have the hookwire localisation. Your surgeon will organise how this should be arranged (whether you bring them on the day or whether they are forwarded to the radiologist in advance).

What happens during a breast hookwire localisation?

The radiologist will choose the method of imaging guidance for the localisation (i.e. mammography, ultrasound, or MRI), usually depending on which type of imaging found the abnormality, which type of

imaging shows the area best, and what the surgeon prefers, after discussion with you.

Mammographic imaging guidance

You will be positioned comfortably in a chair at the mammography machine. A mammogram will be performed with the breast placed between two plates and compressed in order to find the abnormality. The breast remains compressed for the duration of the procedure. The breast is washed with antiseptic and the radiologist will place a very fine needle into the breast with local anaesthetic to numb the area where the hookwire is to be inserted.

The radiologist will then insert a fine needle into the breast tissue to be removed. Mammographic pictures are taken to check the needle position and it is adjusted as required. Once the needle is in the correct position, a fine wire is passed down the centre of the needle and the needle is removed leaving the wire in place. A final mammogram is performed to show the surgeon where the tip of the wire lies in relation to the abnormality that is to be removed.

Ultrasound imaging guidance

You will lie comfortably on an examination couch and the radiologist will find the abnormality with the ultrasound probe (a small smooth hand held device that is moved backwards and forwards across the skin of the breast). The breast is washed with antiseptic and the radiologist will place a very fine needle into the breast with local anaesthetic to numb the area where the hookwire is to be inserted.

The radiologist will then insert a fine needle into the tissue to be removed. The position of the needle is checked with the ultrasound probe. Once the needle is in the correct position, a fine wire is passed down the centre of the needle and the needle is removed, leaving the wire in place. A final mammogram is performed to show the surgeon where the tip of the wire lies in relation to the abnormality that is to be removed (a mammogram provides a better visual image for the surgeon of where the tip of the wire lies than ultrasound).

MRI scan guidance

An intravenous line (a thin plastic tube) will be inserted, usually into a vein in the arm or back of the hand or wrist. You will then be positioned on a bed that moves in and out of the MRI scanner. The breast will be lightly compressed from the side by a small plastic plate (this is less than the compression for a mammogram). An injection of dye or contrast medium will usually be given into the intravenous line to highlight and provide a clearer picture of the breast area on the MRI images. A set of MRI scans will be performed.

The breast is washed with antiseptic and the radiologist will place a very fine needle into the breast with local anaesthetic to numb the area where the hookwire is to be inserted. The radiologist will then

insert a plastic needle (so that it is compatible with the strong magnetic field used in MRI) into the abnormal tissue. Once the needle is in the correct position, a fine wire is passed down the centre of the needle and the needle is removed leaving the wire in place. The MRI scanner produces pictures to show the surgeon where the tip of the wire lies in relation to the abnormality that is to be removed.

After the procedure

Whichever method is used for guidance of the hookwire placement, a piece of the fine wire is left sticking out from the breast. After the procedure, this piece of wire is taped down to the skin and the hookwire remains in the abnormality in the breast. The surgeon will remove the wire together with the abnormality at the time of the operation. Your previous imaging and the images from the Breast Hookwire Localisation will be sent with you to the operating theatre so that the surgeon may refer to them.

Are there any after effects of a breast hookwire localisation?

As the hookwire will be removed at the time of the operation there are no after effects of the procedure itself.

The most common problem encountered is that some women may faint or feel light headed during the procedure, which may be related to stress.

You can talk to your doctor or the hospital or radiology practice about how you can help to reduce your stress levels prior to having the procedure. If you feel unwell (in other words like you might faint) during or after the procedure tell the radiologist or staff where you are having the procedure done. Measures can be taken (like elevating your legs or even giving you a small injection of atropine medication) that will greatly decrease the chance of fainting.

How long does a breast hookwire localisation take?

Mammographic and ultrasound guided hookwire localisation take approximately 30 minutes. An MRI guided procedure requires approximately 45 minutes.

What are the risks of a breast hookwire localisation?

Hookwire localisation is a simple procedure to perform and most women have no problems. Some problems that can occur are:

- Some women may be allergic to local anaesthetic, although this is rare.
- There are some general risks with having MRI that you need to be aware of, including having metal or devices in or on your body that may not function properly in the strong magnetic field (e.g. a pacemaker).
- There can be adverse reactions to the gadolinium injection that you will need prior to the localisation (see [MRI](#) and [Gadolinium Contrast Medium](#)).

- The hookwire can move after placement and before having the surgery, which reduces the accuracy of the surgery.
- Fragments of wire are occasionally left in the breast after surgery (as the result of accidental clipping or fragmentation of the wire). These rarely cause harm as they are made from the same material as surgical clips used routinely in many operations and seldom require removal.
- Wire dislodgement. This occurs usually because the breast is composed of fatty tissue which provides a poor grip for the hookwire. While the most usual cause of dislodgement is the nature of the breast tissue, if you are travelling to another facility for your surgery with a hookwire in position you need to take care, i.e. do not carry luggage or take public transport. Dislodgement may occasionally occur with very little movement. If dislodgement occurs, you may need to have the procedure performed again because the tip of the wire will no longer be situated in the lesion that needs to be removed.

What are the benefits of a breast hookwire localisation?

Hookwire localisation assists a surgeon in the removal of breast abnormalities that cannot be felt. It marks where the abnormal tissue is located and enables the surgeon to remove the smallest amount of abnormal tissue identified on mammograms, ultrasound or MRI scans. As only the abnormal tissue is removed (with a margin of clear tissue around it), scarring can be minimised and the shape of the breast can be preserved as far as possible.

Who does the breast hookwire localisation?

The team performing the hookwire localisation procedure will usually be a nurse, a [radiographer](#) (the technologist who takes the mammograms, ultrasound or MRI pictures) and a [radiologist](#) (the specialist doctor who reads the images, performs the hookwire localisation and writes a report about the procedure).

Where is a breast hookwire localisation done?

Ideally, the procedure is performed in the radiology department of the hospital where the surgery is being performed. Occasionally, when the surgical centre does not have the necessary radiology facilities, the procedure is performed at a radiology centre in a hospital or private radiology practice where the facilities are available. This is more common for MRI guided procedures.

If your localisation is not performed at the surgical centre, you will need to organise transport from the radiology practice to the surgical centre. It is usually best to arrange the shortest, most direct route, and transport by car is preferable. Too much movement may lead to dislodgement of the wire, as described in the question above on risks.

When can I expect the results of my breast hookwire localisation?

The hookwire procedure is a guide for the surgeon. As it is not an investigation, there are usually no results for the hookwire procedure itself other than a written description of what was done and the guidance images. The surgeon will give you the pathology results (where the abnormal tissue is examined for any disease) for the tissue removed, when you have your appointment with the surgeon after the operation.

Useful websites about breast hookwire localisation:

Medscape eMedicine

emedicine.medscape.com/article/347407-overview

Please note:

This information is of a general nature only and is not intended as a substitute for medical advice. It is designed to support, not replace, the relationship that exists between a patient and his/her doctor. It is recommended that any specific questions regarding your procedure be discussed with your family doctor or medical specialist

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