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B04 Imaging-Assisted Wide Local Excision

Expires end of November 2023

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What is breast cancer?

Breast cancer is a malignant growth that starts in the glandular tissue of your breast.

It is not known why most breast cancers develop. Only 1 in 20 breast cancers happen because it runs in the family. Early treatment improves the chance of you being free of early breast cancer.

What is an imaging-assisted wide local excision?

An imaging-assisted wide local excision (lumpectomy) involves removing the cancer with a rim of breast tissue around the cancer.

Before the operation, if your surgeon cannot feel the cancer, they will plan for a breast radiologist (doctor who specialises in breast x-rays and scans) to carry out a marking procedure using a mammogram machine or ultrasound scanner. This procedure will guide your surgeon to find out where the cancer is and help them to decide where to make the cut.

Your surgeon will tell you if your nipple needs to be removed. As well as removing your breast tissue, your surgeon may remove lymph nodes (glands) in your armpit (axilla) to find out if there are any cancer cells in them. Removing some or all of your lymph nodes will help to plan any further treatment you need.

You may also have radiotherapy to reduce the risk of the cancer coming back to that breast. This may be during the operation or several weeks later. Your breast cancer team will discuss this with you.

Your surgeon may have suggested an imaging-assisted wide local excision or you may have chosen to have an imaging-assisted wide local excision. It is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you to make an informed decision.

If you have any questions that this document does not answer, it is important that you ask your surgeon or the breast cancer team. Once all your questions have been answered and you feel ready to go ahead with the procedure, you will be asked to sign the informed consent form. This is the final step in the decision-making process.

However, you can still change your mind at any point.

What are the benefits of surgery?

Removing the cancer by surgery gives you the best chance of being free of early breast cancer. The breast tissue and lymph nodes that your surgeon removes will be examined under a microscope to help decide on any further treatment.

Are there any alternatives to an imaging-assisted wide local excision?

You may want to consider a mastectomy (removing all your breast). However, an imaging-assisted wide local excision, combined with radiotherapy to your breast, is as effective as a mastectomy in treating early breast cancer. Even if you decide to have a mastectomy you may still need radiotherapy (recommended for about 1 in 5 women). Although a mastectomy involves removing all your breast, it may be possible to have breast reconstruction to recreate a breast shape.

If you have invasive breast cancer, where the cancer has grown through the ducts to the surrounding breast tissue, there are other treatments available such as hormone therapy, chemotherapy, radiotherapy and biological therapy (treatment with Herceptin). These treatments on their own are unlikely to lead to you being cured and they also have side effects and complications. However, they may shrink the cancer or control the cancer for a few years.

Removing the cancer by surgery gives you the best chance of being free of early breast cancer.

For most women, combining surgery with one or more of the other treatments will further improve the chance of being free of early breast cancer.

You should discuss the options carefully with the healthcare team.

What will happen if I decide not to have the operation?

If appropriate, your surgeon will discuss non-surgical treatments with you.

The cancer may not be controlled by other treatments, or the cancer may be controlled at first and then spread in a few months or years.

Not removing the cancer by surgery will reduce the chance of you being cured.

What does the operation involve?

The breast cancer team may ask you to have a pregnancy test because x-rays can be harmful to unborn babies. Sometimes the test does not show an early-stage pregnancy so let the breast cancer team know if you could be pregnant.

Marking

A breast radiologist will mark your breast before the operation. The marking can be performed in different ways.

- Pen marking – This procedure is suitable if the cancer is close to your skin. The radiologist will look at your breast using a mammogram machine or ultrasound scanner. They will use a pen to mark on your skin where the cancer is.
- Wire marking – This involves inserting a guidewire (thin flexible wire) through a needle to mark where the cancer is. It usually takes less than 30 minutes to perform. The radiology team will inject local anaesthetic into the skin of your breast as needed. This stings for a moment but will make the area numb, allowing the radiologist to insert the needle into your breast without causing too much discomfort. At the same time, the radiologist will look at your breast using a mammogram machine or ultrasound scanner. This will allow the radiologist to position the guidewire so that it marks where the cancer is. When the guidewire is in the right position, they will remove the needle. This procedure can sometimes be uncomfortable.
- Magnetic or radioactive seeds, or carbon nanoparticles – Your doctor will use a needle and mammogram machine or ultrasound scanner to place metal or carbon particles near the cancer.

The markers or seeds are removed along with the cancer.

The operation

The breast cancer team will carry out a number of checks to make sure you have the operation you came in for and on the correct side. You can help by confirming to your surgeon and the breast cancer team your name and the operation you are having.

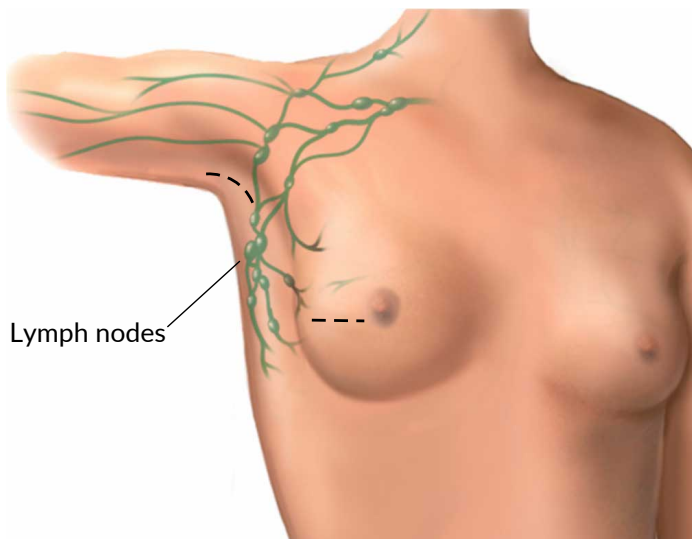
The operation is usually performed under a general anaesthetic but various anaesthetic techniques are possible. Your anaesthetist will discuss the options with you. You may also have injections of local anaesthetic to help with the pain after the operation. You may be given antibiotics during the operation to reduce the risk of infection. The operation usually takes about an hour.

Your surgeon will make a cut on your breast. The position of the cut depends on where the cancer is. They will remove the cancer with a rim of breast tissue around the cancer.

During the operation your surgeon may take an x-ray of your breast tissue that has been removed. This will help your surgeon to make sure that they remove enough breast tissue around the cancer. Your surgeon will be sure that they have removed enough tissue only when it has been examined under a microscope.

Your surgeon will usually remove any lymph nodes from your armpit through the same cut or through another cut closer to your armpit. They will go through the fatty tissue of your armpit to remove them.

Your surgeon will tell you before the operation if they need to remove any of your lymph nodes. They may need to remove 1 or 2 targeted lymph nodes (sentinel node biopsy), about 4 or 5 random lymph nodes (axillary sampling) or most of your lymph nodes (axillary node clearance).



Cuts for a wide local excision and axillary surgery

Your surgeon may insert drains (tubes) in the cut to help your wound to heal. They will close the cut with stitches, clips or glue. Your surgeon may place dissolvable stitches under your skin so you cannot see them.

Will I need more treatment?

All your breast tissue and lymph nodes removed will be examined under a microscope. Your surgeon will know the results 1 to 2 weeks later. If there are cancer cells near the edge of the tissue that was removed, your surgeon may recommend another excision or a mastectomy. If you only had a sentinel node biopsy and the lymph nodes contain cancer cells, you may need to have an axillary clearance.

For about 9 in 10 women, other treatment given after surgery will be of benefit. Your surgeon, oncologist (doctor who specialises in treating cancer with medication and radiotherapy) or breast cancer team may recommend that you have radiotherapy, chemotherapy, hormone therapy or biological therapy.

Your surgeon and oncologist will discuss the options with you and recommend the best treatment for you. You will be informed about these treatment options to make sure you get the best treatment to meet your needs.

What should I do about my medication?

Make sure your breast cancer team knows about all the medication you take and follow their advice. This includes all blood-thinning medication as well as herbal and complementary remedies, dietary supplements, and medication you can buy over the counter.

If you take hormone replacement therapy (HRT), your surgeon may recommend that you stop taking it as it may increase the risk of the cancer coming back.

What can I do to help make the operation a success?

If you smoke, stopping smoking now may reduce your risk of developing complications and will improve your long-term health.

Regular exercise should help to prepare you for the operation, help you to recover and improve your long-term health. Before you start exercising, ask the breast cancer team or your GP for advice.

You can reduce your risk of infection in a surgical wound.

- In the week before the operation, do not shave or wax the area where a cut is likely to be made.
- Try to have a bath or shower either the day before or on the day of the operation.
- Keep warm around the time of the operation. Let the breast cancer team know if you feel cold.
- If you are diabetic, keep your blood sugar levels under control around the time of your procedure.

Speak to the healthcare team about any vaccinations you might need to reduce your risk of serious illness while you recover. When you come into hospital, practise social distancing and hand washing and wear a face covering when asked.

What complications can happen?

The breast cancer team will try to reduce the risk of complications.

Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you. Some risks are higher if you are older, obese, you are a smoker or have other health problems. These health problems include diabetes, heart disease or lung disease.

Some complications can be serious and can even cause death.

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

General complications of any operation

- Bleeding during or after the operation (risk: 2 to 3 in 100). You may need a blood transfusion or another operation and it is common for your chest or armpit to be bruised.
- Infection of the surgical site (wound). It is usually safe to shower after 2 days but you should check with the breast cancer team. Let the breast cancer team know if you get a high temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics and any pus may need to be removed. You may need special dressings and your wound may take some time to heal. In some cases another operation might be needed. Do not take antibiotics unless you are told you need them.
- Allergic reaction to the equipment, materials or medication. The breast cancer team is trained to detect and treat any reactions that might happen. Let your doctor know if you have any allergies or if you have reacted to any medication or tests in the past.
- Venous thromboembolism (VTE). This is a blood clot in your leg (deep-vein thrombosis – DVT) or one that has moved to your lung (pulmonary embolus). DVT can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger

than normal. The healthcare team will assess your risk for DVT and encourage you to get out of bed soon after the operation. They may give you injections, medication, or special stockings to wear. A pulmonary embolus is when the blood clot moves through your bloodstream to your lungs. Let the healthcare team know straight away if you become short of breath, feel pain in your chest or upper back, or if you cough up blood. If you are at home, call an ambulance or go immediately to your nearest emergency department.

- Chest infection. Your risk will be lower if you have stopped smoking and you are free of Covid-19 (coronavirus) symptoms for at least 7 weeks before the operation.

Specific complications of this operation

- Developing a lump under your wound caused by fluid collecting (seroma). This is normal and usually settles with time. Sometimes the fluid needs to be removed using a needle.
- Developing a lump under your wound caused by blood collecting (haematoma). You may need another operation to remove the blood.
- Numbness or continued pain around your armpit or the inner part of your arm caused by injury to the small nerves that supply your skin. Any pain usually gets better within a few weeks. Numbness can last for up to 6 months and can sometimes be permanent.
- Stiff shoulder. The breast cancer team will give you exercises and it is important that you do them to keep your shoulder moving. Take painkillers as you are told if you need to relieve the pain. If you also have radiotherapy to your armpit (as well as to your breast) or if most of your lymph nodes are removed, there is a higher risk your shoulder movement will be restricted (frozen shoulder). Treatment for a frozen shoulder may involve physiotherapy, medication and injections.
- Arm weakness or swelling of your arm and hand (lymphoedema), as a result of axillary surgery. The risk is higher if you also have radiotherapy to your armpit or if most of your lymph nodes are removed. You can get lymphoedema months or even years later. It

will make your arm prone to infection. Your breast-care nurse will give you advice on how to care for your arm to reduce the risk of swelling.

- Failure to remove the cancer, if the cancer is small or the radiologist found it difficult to mark the cancer (risk: less than 1 in 25). Your surgeon will discuss the treatment options with you.
- Dissatisfaction with breast appearance over time. This will depend on how much tissue your surgeon needs to remove and the size of your breast. Infection and bleeding can also affect the appearance of your breast. Sometimes your breast can swell, particularly if your lymph nodes have been removed or after radiotherapy. You may be able to have another operation to reshape your breast or replace some of your breast tissue. You should discuss this with your surgeon.

Consequences of this procedure

- Pain. The breast cancer team will give you medication to control the pain and it is important that you take it as you are told so you can move your arm freely to prevent your shoulder from getting stiff.
- Unsightly scarring of your skin.

How soon will I recover?

In hospital

After the operation you will be transferred to the recovery area and then to the ward.

The breast cancer team will recommend exercises to help you to move and strengthen your arm. It is important that you do these exercises regularly after you go home.

You are expected to go home the same day.

If drains have been used, you should be able to go home with them in place. Your healthcare team will tell you when you will need to come back to have them removed.

If you are worried about anything, in hospital or at home, contact the breast cancer team. They should be able to reassure you or identify and treat any complications.

Returning to normal activities

If you had sedation or a general anaesthetic:

- a responsible adult should take you home in a car or taxi and stay with you for at least 24 hours;
- you should be near a telephone in case of an emergency;
- do not drive, operate machinery or do any potentially dangerous activities (this includes cooking) for at least 24 hours and not until you have fully recovered feeling, movement and co-ordination; and
- do not sign legal documents or drink alcohol for at least 24 hours.

To reduce the risk of a blood clot, make sure you carefully follow the instructions of the breast cancer team if you have been given medication or need to wear special stockings.

You should be able to return to normal activities after 2 to 3 weeks. Wearing a soft bra that fits comfortably will help to relieve any discomfort.

Do not lift anything heavy or do strenuous exercise, such as vacuuming or ironing, for 3 weeks. You should be able to do a limited amount of activity, such as lifting young children, after about 2 weeks

Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, ask the breast cancer team or your GP for advice.

Do not drive until you can control your vehicle, including in an emergency, and you are comfortable wearing a seat belt. Always check your insurance policy and with the healthcare team.

The future

The breast cancer team will arrange for you to come back to the clinic within 3 weeks. The breast tissue and lymph nodes that your surgeon removed will have been examined under a microscope. Your surgeon will tell you the results and discuss with you any treatment or follow-up you need. They will also check your wound and be able to tell you when you can return to work.

Your breasts might look uneven after the procedure and this may settle over time. If you are concerned, you may be able to have further surgery to one or both breasts to improve this. In some cases, this can be done at the same time as the wide local excision. However, it might be better to do it at a later date. Your surgical team will discuss this with you.

How much will the operation cost?

Your doctor will give you information to make sure you understand the expected costs to you of having this procedure, as well as your choices for having it done through the public hospital system or at a later time.

Summary

Surgery gives the best chance of you being free of early breast cancer. If your surgeon cannot feel the cancer, they can use radiology procedures to help find out where the cancer is. A wide local excision involves removing the cancer with a rim of breast tissue around the cancer. It usually involves removing some of the lymph nodes in your armpit, which helps your surgeon to decide on any further treatment.

Surgery is usually safe and effective but complications can happen. You need to know about them to help you to make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

Sometimes there are research trials that you could choose to take part in. Your healthcare team will let you know if there is something you are suitable for and give you written information.

Keep this information document. Use it to help you if you need to talk to the healthcare team.

Some information, such as risk and complication statistics, is taken from global studies and/or databases. Please ask your surgeon or doctor for more information about the risks that are specific to you, and they may be able to tell you about any other suitable treatments options.

This document is intended for information purposes only and should not replace advice that your relevant healthcare team would give you.

Acknowledgements

Reviewer

Peter Gregory (MS, FRACS)

Illustrator

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