Torbay and South Devon
NHS Foundation Trust

PATIENT INFORMATION

Chest wall perforator flap reconstruction

LICAP, MICAP and AICAP

Local perforator flap reconstruction:

This type of operation is suitable for some patients who have a breast cancer which requires replacement of the removed tissue to restore breast shape. The procedure aims to replace the lost breast tissue (removed at the time of cancer surgery) with fat and occasionally skin, to maintain the breast shape. Therefore, it can be referred to as a partial breast reconstruction.

Most women have spare tissue under the breast, around the side of the chest wall, or on the back – this tissue can be used to reconstruct the space left in your breast after your tumour has been removed. The tissue is kept alive by one or more small blood vessels (arteries and veins) which remain intact when the fatty tissue is placed into the breast. There is no muscle removed in this operation, therefore there is no effect on your arm or chest wall function.

This surgery may be recommended to you as an alternative to a mastectomy. Other breast preserving techniques (operations to remove the breast lump) may result in changes to the size and shape of the breast. You may have quite a long scar on the side of your chest wall extending towards your back.

All surgery required to treat your breast cancer, including lymph node surgery (if required) will be performed at the same time and through the same scar if possible. If this is not feasible, this will typically be done through a separate incision along the lateral chest wall. Therefore, there should generally be no scar on the breast (except in some cases where it may be necessary to remove the skin on the breast if the underlying cancer is close to the skin

The aim of the flap is to replace the tissue lost from your breast due to the removal of your breast cancer and to restore its size and shape. However, if you have radiotherapy after this surgery, it may result in some overall shrinkage of the breast. This shrinkage may make your breasts appear different to one another. The reconstructed breast may initially appear larger due to swelling, but this should resolve in the months following surgery.

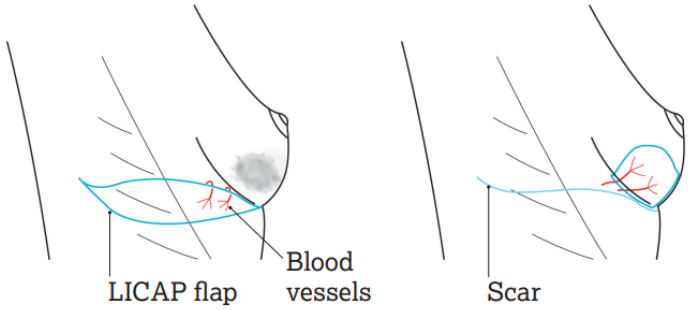
Most women are pleased with the results of their surgery. The shape of your breasts will change with time, particularly with changes in weight, ageing, and pregnancy. The results of this surgery will evolve as you get older, in the same way that natural breast shape changes as we age.

Types of local perforator flaps:

There are several different blood vessels that can supply the flaps and abbreviations based on which blood vessels are being used are what your procedure will be called. They also result in different scars.

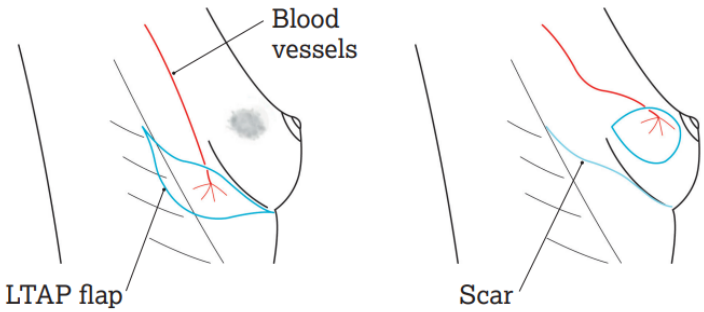
You will have the opportunity to view medical photographs to see what each flat type looks like in real life.

LICAP – Lateral intercostal artery perforator



In the first image (left), the blue lines demonstrate where the tissue is taken from for a LICAP flap design; the red lines show the blood vessels which nourish the tissue. The second image (right) shows the scar behind the breast (lighter blue) after the surgery and the LICAP tissue sitting within the breast where the tumour once was. The only scar visible will be the one on the chest wall.

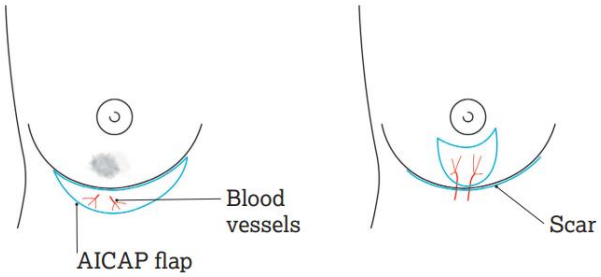
LTAP – Lateral thoracic artery perforator



In the first image (left), the blue lines demonstrate where the tissue is taken from for an LTAP flap design; the red lines show the blood vessel which nourishes the tissue.

The second image (right) shows the scar on the side of the breast (lighter blue) and the LTAP tissue sitting within the breast where the tumour once was. The red lines show the LTAP blood vessel nourishing the flap. The only scar visible will be the one on the chest wall just behind the breast.

AICAP – Anterior intercostal artery perforator



In the first image (left), the blue lines demonstrate where the AICAP tissue is taken from. The blood supply (shown in red lines) nourishes the tissue for an AICAP flap design. The second image shows the scar along the crease below the breast and the tissue sitting within the breast where the tumour once was. The only scar visible will be beneath the breast. You will also have a small incision in the armpit if you need to have surgery to the lymph nodes in the armpit.

MICAP – Medial intercostal artery perforator

This is a similar procedure to the AICAP flap in that the tissue is taken from underneath the breast and the scar will sit in the crease underneath the breast. The tissue is then placed more medially into the breast to provide volume replacement.

Which flap?

The specific type of flap can sometimes be selected based on the exact location of your cancer within the breast. In some cases, the type of flap used is determined only during your surgery. This is a technical decision made by your surgeon, based on what will work best in your particular case.

What are the benefits?

The main benefit is that the cancer is completely removed whilst maintaining a breast reconstructed with your own tissue. This procedure preserves your breast shape and volume, keeping it similar to how it was before surgery, hence you are less likely to need any symmetrising procedure on the other side. As it is your own tissue that is being used your breast will continue to change naturally particularly with changes in weight, ageing, and pregnancy. The results of this surgery will evolve as you get older, in the same way that natural breast shape changes as we age.

What are the risks?

All operations involve risks and benefits. You need to be aware of these so that you can make an informed choice about whether this surgery is right for you. Your surgeon will discuss with you in more detail if there are any individual risks specific to your case. If you are a smoker, it is advisable to stop smoking to reduce the risks of surgical complications.

Risks associated with a local perforator flap reconstruction:

• **Further surgery:** It is important that all of the cancer is removed. You may need further surgery (1 in 5 patients) if we find that this surgery has not removed all of the cancer. The risk of this is greater if you need to have a wire/seed inserted but is not in the correct place or moves. If further surgery is required, we will discuss this with you at your follow up appointment two weeks after the surgery. Occasionally this may lead to a mastectomy, where we might recommend that the whole breast is removed.

• **Pain:** Breast surgery is not usually associated with severe pain but you will need some pain relief after the operation. Pain relief may be given in the form of an injection of local anaesthetic and/or oral painkillers such as paracetamol and codeine; these are usually effective enough to take when you go home. As this operation involves moving the breast tissue around, the pain or discomfort you feel may not be directly under the scar. Up to 1 in 3 patients (33%) may experience some form of longterm pain or discomfort after this surgery.

• **Infection:** All surgery carries a risk of developing an infection. This is rare (5 in 100 patients) and can be treated with antibiotics and/or dressings. Very rarely an abscess can form, which is a collection of infection/ pus under the skin that requires drainage (1 in 100 patients). The risk of infection is higher in smokers, diabetics and obese patients. If you feel unwell with a temperature, vomiting or notice significant redness of the skin on or around your breasts, you should contact your Breast Care Nurse.

• **Bleeding/bruising:** You are likely to be bruised after the surgery, but this will settle and resolve on its own within a few weeks. Very rarely (2 in 100 patients), further surgery may be required if the bleeding persists or if there is a bigger collection of blood (haematoma).

• **Seroma:** After surgery, the wound continues to produce fluid under the scar and can cause swelling called seroma. This is quite common (around 30-50% of patients) following breast surgery and is not harmful. Seromas can take 6–8 weeks to resolve and only require drainage if they are causing discomfort.

• **Delayed wound healing:** Some patients may experience breakdown of the wound, causing the wound to open up. This leads to delay in wound healing, but it will heal with the use of dressings. This is more common in smokers and people with large breasts or those with thin skin.

• **Increased sensitivity:** Numbness of the skin surrounding the scar and area where the tissue has been repositioned (sometimes extending to the nipple) is common, although some sensation may return in many patients. Some patients may experience increased sensation which can last for two to three months.

• **Flap failure/loss:** There is a small risk (1 or 2 in 100 patients) of the flap not working. This is due to the blood vessels supplying the flap being very small and becoming kinked or blocked resulting in part or the entire flap 'dying off'.

• **Inability to proceed with the reconstruction:** During the operation, there is a possibility that your surgeon will be unable to proceed with the reconstruction (less than 1 in 100 patients). This would happen if, for example, no suitable blood vessel is identified during the operation. In this case, the removal of your cancer will still go ahead. You may be offered alternative forms of reconstruction later to improve the appearance of your breast.

• **Scarring:** Lateral chest wall perforator flaps will result in a relatively long scar on the side of the chest wall extending towards your back, most of which may be hidden by your bra. The AICAP and MICAP scars should sit in the crease underneath the breast. The scars will be most noticeable soon after the operation but should settle with time. This may take up to a year or longer depending on how well you usually heal. A thickened/more noticeable scar (hypertrophy or keloid scarring) can occur in up to 10% of patients, more commonly in certain skin types, particularly Afro-Caribbean. If previous scars at other body sites have been troublesome, you should discuss this with your surgeon before deciding on this surgery. Steps may be taken to reduce this problem if you make your surgeon aware of your concerns.

• **Shoulder stiffness:** You are likely to experience some tightness after the surgery due to scar tissue, which may temporarily affect your shoulder movements. This does not usually last longer than four weeks. You should perform regular exercises to ensure your shoulder movement returns quickly.

• **Fat necrosis:** These are firm lump(s) in your breast caused by a lack of blood supply to the tissue from the flap. They are not cancerous and can be assessed by mammogram and/or ultrasound but may need to be biopsied to make sure they are not of any concern. This occasionally may be corrected with further surgery. This occurs in less than 1 in 10 patients, but the risk might be increased in patients who smoke and it may occur after breast radiotherapy.

• **Deep vein thrombosis (DVT):** This is a blood clot that can form in a deep vein, usually within the leg. This can happen after any operation and general anaesthetic. The risk of getting a DVT is reduced by wearing special stockings and/ or having an anti-clotting injection which would be given to you. After the operation, we advise you to move around as soon as you are able to get out of bed, and to stay active once your return home.

• **Cosmetic outcome:** There will be a slight difference in the size and shape between the operated and non-operated breasts. During the operation, we do our best to get the shape and size of the reconstructed breast to be as similar as possible to the other breast.

• **Very rare risks:** Surgery and anaesthesia can result in life-threatening complications affecting breathing, the heart or other vital organs, including blood clots and strokes. Please ask your surgeon or pre-assessment clinic team if you have any specific questions about the risks of anaesthesia

What happens before and on the morning of your surgery?

Before surgery:

During your clinic appointment before surgery, you can discuss the procedure in detail with your surgeon including the possible complications. You will be asked to sign a consent form to indicate your agreement to proceed with the surgery. You can take a copy of the consent form home to look over if needed.

We will request to take photographs of you for our records and to compare with the result after surgery; this is optional. The Photos will not include your face and will be stored securely. You may need to have one or more magnetic seed(s) or wire(s) inserted into the breast to help the surgeon locate the area of cancer in the breast. This may be done before the day of surgery (seed) or on the morning of surgery (wire). These will be removed during the surgery.

If you are a smoker, it is recommended that you stop smoking (or vaping) completely 6 weeks before surgery to reduce the risks of surgical complications. If you continue to smoke or have been a heavy smoker this procedure will not be appropriate for you. You may be required to have a carbon monoxide test pre-operatively to reassure the surgeon that you are no longer smoking.

On the morning of surgery:

Your surgeon will draw on your breast to indicate where the incisions (cuts) will be made and explain where the scars will be after the operation. The surgeon will also use a piece of equipment called a hand-held Doppler to map out the underlying blood vessels which will supply blood to the flap/tissue being moved to fill the space in your breast.

What to expect after surgery

You will be kept warm immediately after surgery with a warming blanket which is necessary to keep both the skin and the flap in your breast warm to help the flap stay healthy.

The surgery is usually a day-case procedure with an estimated recovery period of 4-6 weeks. You may have a drain in place for a short time after surgery. In most cases, the drain will be removed after a few days. If you go home with a drain, a breast care nurse will teach you how to empty it daily and care for it. The removal of the drain will be carried out at the breast care unit.

The fear of experiencing pain after surgery is understandable. However, severe discomfort is uncommon. After the surgery, the ward nurse will ask you about your pain and provide pain relief to meet your needs. Once you are home it is advisable to have some paracetamol available should you need it. You will be given some pain relief medication and advice before you are discharged.

The wound is closed with dissolvable stitches under the skin therefore you will not need to have any stitches removed. There will be a dressing over the wound which is splashproof and should remain in place until your follow up appointment. You can shower when you get home but do not have a bath where the wound is submerged in water.

The day after your operation you should feel more independent. You will be given a booklet on gentle arm exercises to undertake after surgery to help maintain your shoulder mobility. The scar will feel tight initially, but it tends to relax fairly quickly over several weeks. We encourage you to do gentle exercises to ensure you regain complete range of shoulder movement.

We recommend you wear a post-surgery bra day and night for a minimum of 3 weeks. You will be given further bra advice by your surgeon at your outpatient review. Once the dressing is removed you should start to moisturise and massage the scar line and breast tissue to help with wound healing.

General advice

Driving is best avoided for the first 1–2 weeks. Normal strenuous activities such as jogging and sports can be resumed after 6 weeks to allow for wound healing. The swelling and bruising should subside in a few weeks but it can take 6 - 12 months for the scars and shape of the breasts to settle.

Employment

If you work, you will need to inform your employer how much time off you will need. It is generally advised that you take 3–4 weeks off work, which includes the week of your operation. If your job is particularly strenuous, you may need a longer period off work. Please discuss this with your Breast Care Nurse or surgeon. If you need a medical certificate for your employer we can provide you with one that covers the duration of your stay in hospital and the expected recovery time at home. If you need additional time off after this you may need to ask your GP.

Caring responsibilities

If you are responsible for the care of someone and are anxious about this, it can be helpful to talk to your GP or Breast Care Nurse. They may be able to offer suggestions for help both during and after your admission. Whilst you will be able to look after yourself upon discharge, you may need help initially if you care for someone else.

Living alone

If you live alone, you may be concerned about how you will cope after your surgery. Most people are able to manage at home and can wash, dress, cook and do light household tasks. However, it might be advisable to make some arrangements for help with shopping or heavier tasks (such as carrying wet laundry) for the first week or two. If you do not feel you will be able to manage at home when you are first discharged, please discuss this with your Breast Care Nurse who will be able to advise you.

Follow Up

Usually, your surgeon will see you in the outpatient clinic two weeks after surgery to discuss the results of your operation. The appointment date and time will either be given to you before you go home or posted to you. You will have follow-up telephone calls and face to face appointments with the breast care nurses to review your drain and wounds. If you have any concerns about your wound, then please contact the breast care nurses in the first instance.

We hope this leaflet has answered some of your questions. If you require any more advice either before or after your procedure, do not hesitate to contact any of the Breast Care Nurse Specialists.

General statements in this leaflet may not apply in every case, as each patient is an individual. Your doctor will advise you of any specific aftercare.

With thanks to Pankaj Roy, Oxford University Hospitals NHS Foundation for providing the original content of this booklet.

Useful Phone Numbers:

Breast Care Unit: 01803655662

Breast Care Nurses: 01803655727

For further assistance or to receive this information in a different format, please contact the department which created this leaflet.