



Vacuum-Assisted Core Biopsy

Consumer Information

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What is a vacuum-assisted core biopsy?

Vacuum-assisted core biopsy is a safe and minimally invasive procedure in which a sample of breast tissue is removed for examination. When breast imaging shows up very small abnormalities too small to be felt (i.e. anything unusual in the structure of the breast), vacuum-assisted core biopsy is used to obtain samples of the breast tissue.

Through a small incision or cut in the skin, a special biopsy needle is inserted into the breast and, using a vacuum-powered instrument, several tissue samples are taken. The vacuum draws tissue into the centre of the needle and a rotating cutting device takes the samples. The samples are retrieved from the centre of the biopsy needle following the procedure and sent to a laboratory to be examined by a pathologist (a specialist doctor trained in diagnosing biopsies).

The biopsy procedure is performed under imaging guidance (*mammogram*, *magnetic resonance imaging* (MRI) or *ultrasound*). In other words, the pictures or images obtained from scans allow the radiologist performing the biopsy to make sure the needle is correctly positioned. A *radiologist* is a specialist doctor who is trained in performing and/or supervising medical imaging.

Vacuum-assisted core biopsy is an alternative to surgical biopsy. It allows the area of abnormality to be precisely located using imaging guidance so that only samples from the region of interest are removed.

It is performed as an outpatient procedure under local anaesthetic. The procedure causes only slight discomfort.

How do I prepare for a vacuum-assisted core biopsy?

Before the day of the procedure

- It is important to notify the department or radiology practice:
 - If you are taking any blood-thinning medication (e.g. Warfarin). The radiologist performing the procedure may need to liaise with your other doctors to determine if it is safe or necessary to temporarily discontinue your medication.

- If you are taking aspirin or clopidogrel (often sold as PLAVIX). Usually these drugs can be continued, however, the risk of bruising is moderately increased.
- If you are, or could be, pregnant. A small dose of radiation (X-ray) is used in the mammogram taking images for the biopsy. Whilst this is very unlikely to cause damage to a developing baby (or foetus), it is useful to discuss these low risks with your referring doctor and radiologist.

- It is important to take any previous breast imaging (e.g. mammogram, ultrasound, MRI) to the hospital department or radiology practice before the day of your procedure. This ensures the mammographer or technologist, who will take the images throughout the procedure, and the radiologist, have all the images they need to perform the vacuum-assisted core biopsy procedure.

On the day of the procedure

- Avoid deodorant. If the biopsy is to be performed under mammogram (X-ray) guidance, deodorant can mimic or imitate the calcium spots in the breast that are to be biopsied, which makes it harder for the radiologist to identify the abnormality that requires biopsy.
- Advise the radiologist performing the procedure if you have any drug allergies, especially to local anaesthetic and/or skin antiseptic.
- Wear a two piece, comfortable outfit as you will need to remove the clothing on your upper body. Usually, you will be given a gown to wear during the procedure.

What happens during a vacuum-assisted core biopsy?

The majority of breast abnormalities (small calcium spots or small masses) that will require a vacuum-assisted core biopsy, are only visible on a mammogram. To be able to perform the biopsy procedure, a special mammogram machine will be used to locate the area of abnormality within the breast.

In the procedure room you will usually be asked to lie on a biopsy table (or "prone table") on your stomach. The table has a hole through which the breast is placed. The table will be raised as underneath this table is a special mammogram machine and biopsy device. This allows the radiologist and mammographer to comfortably work below the table.



Image: biopsy table

Occasionally, this procedure may be performed using an "upright" mammogram unit. This requires you to sit in a chair.

Whether you are lying down or sitting, the breast will be placed between the two compression plates of the mammogram unit (just like a normal mammogram) and a series of X-rays will be taken to locate the area of abnormality.

Once you are positioned and the area of abnormality is located, you will be asked not to move, as even slight movement (e.g. turning your head) can move the area where the abnormality has been found out of the biopsy field or view.

After some initial images have been taken, the overlying skin will be cleansed with antiseptic. A local anaesthetic will be injected into the skin and breast tissue. This may cause a stinging sensation which can last for a few seconds. Following this, you may feel the radiologist touching the breast and a pushing sensation. This is normal and you should not feel significant pain.

Repeat pictures or images are taken at this stage (and at other stages) of the procedure to confirm the correct positioning of the biopsy site and needle.

A small (3-4 mm) incision is made in the anaesthetised skin and the needle inserted. When the needle takes the tissue samples it may make a "whirring" or "clicking" sound.

When the radiologist is satisfied that enough samples have been taken, a small titanium (strong, lightweight metal) marker clip (2 mm) may be inserted into the breast via the biopsy needle. This is done so that the area of abnormality can be located at a later date if surgery is required. If inserted, the clip is safe, cannot be felt, and does not need to be removed.

Once the needle is removed, a sterile dressing will be applied to the breast. Usually, no stitches are required. Instructions on when to remove the dressing will be given to you before you leave.

Vacuum-assisted core biopsies may be performed under ultrasound guidance, instead of a mammogram. This procedure is the same as described above, except that you will be required to lie on your back on an ultrasound bed. The breast will not be placed between mammogram compression plates.

Vacuum-assisted core biopsies can also be performed under MRI guidance. A needle will be placed into your arm and a liquid dye or contrast medium may be injected during the scan. You will be asked to lie on your stomach in the MRI scanner and your breast will be lightly compressed between two plates (similar to a mammogram). The remainder of the procedure will be similar to that described above.

Are there any after effects of a vacuum-assisted core biopsy?

The majority of women will experience breast bruising and tenderness in the few days following the procedure. Simple analgesics (i.e. paracetamol) may be required for pain relief.

As no stitch is normally placed in the skin incision or cut, it is usually recommended that strenuous activity be avoided for 24 hours following the procedure. This helps in healing the skin.

How long does a vacuum-assisted core biopsy take?

The appointment time for a vacuum-assisted core biopsy is approximately one hour. This can vary depending where the biopsy is performed, due to the particular appointment and work practices of the hospital or radiology practice where you are having the procedure done.

If a titanium marker clip is inserted at the time of biopsy, a regular mammogram is often performed before you leave the hospital or radiology practice. This allows the radiologist to double check that the clip is accurately placed at the biopsy site. This may add another 15-20 minutes to the total procedure time.

You will normally be required to remain at the hospital or radiology practice for a short time following completion of the procedure to ensure that the biopsy site is not bleeding.

What are the risks of a vacuum-assisted core biopsy?

Vacuum-assisted core biopsy is a very safe procedure. Complications are rare, but can occur.

At the time of the procedure, bleeding can occur from the incision in the breast. This is not serious and is usually easily controlled with local pressure.

Very rarely, a stitch may need to be inserted to stop the bleeding (this occurs in less than 1 in every 100 patients who have this procedure). The risk of bleeding is slightly higher if you are taking aspirin or other medication that can thin the blood.

As the procedure involves a skin incision and inserting a needle into the breast, there is a very small risk of infecting the breast with normal skin bacteria. If this occurs, the breast will become hot, red and painful in the few days following the procedure. If this occurs, you should contact the hospital or radiology practice that performed your procedure or your referring doctor. The risk of infection is less than 1 in 1000 biopsy procedures.

What are the benefits of a vacuum-assisted core biopsy?

Vacuum-assisted core biopsy is a minimally invasive procedure, that is, there is only a very small incision and only local anaesthetic is used. The procedure allows small breast abnormalities (often less than 5mm) to be sampled and examined by a pathologist. The alternative biopsy procedure is a surgical biopsy which is more invasive and requires a general anaesthetic.

Compared with surgical biopsy, vacuum-assisted biopsy:

- Causes little or no scarring on the skin / in the breast.
- Usually takes less than one hour.
- Accurately and safely places a biopsy needle at the site of an often small abnormality.
- May completely remove small abnormalities.
- Has a fast recovery time (return to normal activities in about 24 hours).
- Avoids unnecessary surgical biopsies of benign lesions (non-cancerous abnormalities).
- If an abnormality is suspected to be pre-cancerous or cancerous, preoperative biopsy helps provide you, your family and surgeon with more accurate information for surgical and treatment planning.

Who does the vacuum-assisted core biopsy?

If the procedure is performed under mammogram or MRI guidance, a specially trained *medical imaging technologist* (mammographer or MRI technologist) will get you into a comfortable position for the procedure, position your breast in the special mammogram unit or MRI scanner and take the images throughout the procedure.

A *radiologist* (specialist medical imaging doctor) will perform the biopsy procedure. The radiologist will also be responsible for providing a written report to your referring doctor about the procedure.

A *nurse* or other assistant may also be present to assist the radiologist. Usually, the nurse will apply a dressing to the biopsy site at the end of the procedure.

When can I expect the results of my vacuum-assisted core biopsy?

Vacuum-assisted core biopsies are usually performed in a radiology or dedicated breast imaging department of a hospital or at a private radiology practice.

Where is a vacuum-assisted core biopsy done?

The vacuum-assisted core biopsy samples will be sent to a pathology laboratory. Usually, analysis of the tissue samples will take from 48-72 hours.

Depending on the facility where you had the biopsy, the pathology results will be given to you by your GP, breast surgeon or radiologist. Ask the radiologist performing the biopsy who will give you the pathology results.

Useful links:

1. MedicineNet.com:
www.medicinenet.com
2. RadiologyInfo - American College of Radiology & the Radiological Society of North America
www.radiologyinfo.org

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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