

MINOR SURGERY OF THE BREAST

Breast-related complaints are common in women presenting to medical practitioners.

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A history and clinical examination in conjunction with radiology will resolve many breast problems. Some patients require a further procedure to evaluate their problem. Many such procedures can be performed in the consulting room under local anaesthesia, but some may require general anaesthesia in an operating theatre. Most of the procedures can be performed by non-specialist medical practitioners, with good results.

In this article I give a technical description of the following procedures: fine-needle aspiration biopsy (FNAB), cyst aspiration, core biopsy, punch biopsy, incision and drainage of lactational abscesses, excision biopsy of a breast lump and microdocheotomy.

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Fine-needle aspiration biopsy

FNAB is a readily available and useful tool to obtain a cytological diagnosis of a breast lump. In conjunction with breast imaging (mammography and ultrasonography) and clinical examination it resolves most diagnostic problems in breast disease. Good technique is essential in obtaining a representative sample.

A 20ml syringe and 22-gauge needle should be used. Clean, labelled slides and a cytological fixative must be available. A local anaesthetic may be used to infiltrate the skin overlying the lump, which should be stabilised with the non-dominant hand. The needle is inserted into the lump and negative pressure should be applied while making multiple passes through the lump in different directions. The suction should be released, and the needle removed from the breast and disconnected from the syringe. Air must now be sucked into the syringe, the needle reattached and the contents of the syringe and needle forcefully expelled onto two clean glass slides. The expelled tissue should be spread across the slides and the fixative rapidly sprayed onto the slides in a single pass.

The slides can then be submitted for cytological evaluation. Cytology is accurate if the lump has been well sampled, but false negatives do occur, usually as a result of an inaccurate biopsy. If the cytological report is not in keeping with the clinical and/or radiological findings, caution must be exercised. In this scenario it would be prudent to proceed to a core biopsy or even an excision of the suspicious area.

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Cyst aspiration

Breast cysts commonly occur in young women and usually present as a breast lump that may be painful. Clinically they are well circumscribed and they may be bilateral or multifocal. Breast cysts are readily diagnosed on ultrasound. If they are large, atypical or symptomatic they should be aspirated.

The aspiration technique is similar to that of FNAB. The skin overlying the lump may be infiltrated with a local anaesthetic. The needle is

then inserted into the cyst, which is aspirated. In simple cysts the fluid may be clear, but it is often green/brown. The cyst should be aspirated to dryness. If the fluid is not bloodstained it need not be sent for cytology and may be discarded. However, the patient must be clinically examined 1 - 2 months later. Recurrent cysts can safely be re-aspirated.

One should be aware of complex cysts which may represent a breast malignancy, typically a papillary cystic carcinoma. The key differentiating features are heavily blood-stained fluid, a residual mass after aspiration, rapid reaccumulation after aspiration, and evidence of both solid and cystic components on ultrasound. These complex cysts must not be ignored but should be investigated by cytology and core biopsy.

Core biopsy

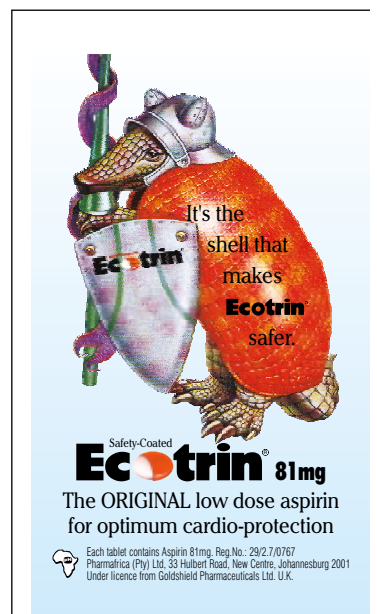
Most breast cancer units rely on core biopsy for definitive pre-therapy diagnosis of breast carcinoma. A core biopsy may be used to obtain a histological diagnosis and provides useful information that may influence surgical decision making. In breast carcinoma the histological subtype, tumour grade, hormone-receptor status and HER2 neu status offer useful information and guide decision making.

The skin overlying the lump should be cleaned and infiltrated with a local anaesthetic. The skin is then incised to allow access to the core biopsy needle. The lump is stabilised with the non-dominant hand and the needle tip inserted into the lump. The stylus is advanced and stabilised. The cutting edge can now be advanced, the entire needle withdrawn and the biopsy sample placed in formalin. This process should be repeated until 3 - 4 suitable samples of core tissue have been obtained. A good indication of the adequacy of biopsies is their behaviour in formalin. Fatty biopsies float, but those containing usable tissue usually sink.

Caution should be exercised with lesions positioned close to the chest wall and a tangential approach adopted to avoid a possible pneumothorax. Bleeding and bruising often occur after a core biopsy and patients should be warned of this in advance. Post-biopsy bleeding is readily controlled with pressure.

Punch biopsy

In certain circumstances a punch biopsy may be preferable to a core biopsy. This technique is usually employed when a biopsy that includes the skin is indicated. It may be useful, e.g. in suspected Paget's disease of the nipple, local recurrence after mastectomy for breast cancer and inflammatory carcinoma of the breast where malignant cells may be seen in the dermal lymphatics.



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The area to be biopsied should be cleaned and infiltrated with a local anaesthetic. The punch is simply pushed through the skin and the core of tissue retrieved from the biopsy needle. This should be placed in formalin and sent for histological assessment.

Incision and drainage of lactational abscesses

Breast engorgement and stasis combined with minor trauma during breast feeding may result in a staphylococcal infection, causing mastitis. If left untreated it will often result in a lactational breast abscess. Patients with an abscess are usually not well and have a fever with obvious inflammation of the breast and associated pain. An area of fluctuation heralds the onset of a breast abscess, for which the recommended treatment is a formal incision and drainage under general anaesthesia.

The breast should be cleaned and draped. The incision should be sited over the area of maximum fluctuation, and for cosmetic reasons preferably on the edge of the areola. The abscess should be incised and drained, and the cavity digitally explored to break down any loculations, and well irrigated with saline. The incision should be left to heal by secondary intention. The pain related to the abscess should improve immediately and only simple analgesics are required during the early postoperative period.

The main differential diagnosis is an inflammatory carcinoma of the breast, which should not be misdiagnosed as mastitis or an abscess. The key features are usually a slightly older patient and the absence of lactation.

Excision biopsy of a breast lump

Breast lumps may be excised because of an uncertain diagnosis, patient preference or physician anxiety. Fibroadenomas are most commonly excised.

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Fibroadenomas present as mobile, usually small, breast lumps. In teenagers they are so typical that no further investigation or treatment is required. In older patients there is the concern of breast carcinoma; therefore these lumps should be imaged and biopsied. The main differential diagnosis in the case of a clinically and radiologically observed fibroadenoma would be a phyllode tumour that may not be accurately differentiated cytologically.

Most fibroadenomas may be excised under local anaesthesia. The breast is cleaned and draped and the area of incision infiltrated with a local anaesthetic. The site of incision should be selected carefully. For cosmetic reasons preferred sites would be on the edge of the areola, in the inframammary fold or in the axilla. The worst cosmetic outcome occurs with incisions in the upper medial quadrant of the breast – this area should be avoided if possible. After incising the skin the breast tissue should be dissected until the lump is visible. The lump is usually easy to shell out for histological assessment.

The breast is well vascularised and care should be taken to achieve haemostasis. Most wound complications arise from haematomas which may readily become infected. Subcutaneous closure with an undyed, absorbable suture material will usually give the best cosmetic outcome. A waterproof dressing will allow the patient to shower until the wound has healed. If there is concern about haemostasis a surgical drain may be left *in situ*.

Microdochectomy

A nipple discharge is another common complaint regarding the breast. Of concern is a single-duct, spontaneous, bloody or persistent discharge. Clinical examination and mammography are indicated and any associated mass should be biopsied. If it is difficult to diagnose, an excision of the duct should be considered to achieve a histological diagnosis.

A microdochectomy is usually performed under general anaesthesia. The breast is cleaned and draped. The discharging duct is then cannulated with a fine probe. A periareolar incision is made at the corresponding point and the probe and duct are dissected back onto the inferior side of the areola. The tissue is then excised for histological assessment. Haemostasis and closure may be achieved as before.

The most common diagnosis will be an intraductal papilloma, but a nipple discharge may well be the presenting feature of an invasive or *in situ* carcinoma.

IN A NUTSHELL

- In a proportion of patients presenting with a breast complaint a minor surgical procedure is indicated to obtain an accurate diagnosis or treat the condition.
- FNAB is easy to perform and in conjunction with radiology will give a reliable diagnosis, but false negatives may occur.
- Simple cysts may be aspirated. If the mass disappears and is not bloodstained, the patient may be followed up clinically.
- Core biopsies give valuable information regarding the histological sub-type, grade, hormone-receptor status and HER2 neu status of the breast and affect surgical decision making. They should be used liberally in suspected breast carcinoma.
- Punch biopsies are used to diagnose conditions involving the overlying skin.
- Lactational breast abscesses should be adequately drained under general anaesthesia. Care should be taken with choosing the incision site.
- Ideally, breast incisions should be on the edge of the areola, in the inframammary fold or in the axilla. Incisions in the upper medial quadrant should be avoided.
- Most wound complications after minor breast surgery result from inadequate haemostasis with resultant secondary infection.
- A nipple discharge is a well recognised, if infrequent, presentation of an *in situ* or invasive carcinoma and warrants further investigation if persistent, bloodstained or from a single duct.