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Fine Needle Aspiration Cytology (FNAC) – A Diagnostic Technique

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Fine needle aspiration cytology (FNAC) is a diagnostic procedure where a needle is inserted into the body and a small amount of tissue is sucked out for examination under the microscope. FNACs are often performed when a suspicious lump is found, for example a breast lump or enlarged lymph node, or if an abnormality is detected on an imaging test such as x-ray, CT scan, ultrasonography or mammography. Fine needle aspiration is relatively less painful and more rapid when compared to other methods of tissue sampling such as surgical biopsy.

WHEN IS IT REQUIRED?

FNAC is ordered by a health care provider when a lump is discovered during examination and when it is felt that the nature of the lump needs to be ascertained. The most common possibilities of palpable and impalpable lumps are scars, cysts, infections, inflammation and tumours. Without a biopsy, it is difficult for a doctor to find out what these lumps contain and whether they are of any threat to the health of the individual. The most common reason to get a fine needle aspiration is to test for malignancy.

COMMON AREAS FOR ASPIRATION

Most fine needle aspirations are done on:

- ◆ breast
- ◆ thyroid gland
- ◆ lymph nodes in the neck
- ◆ soft tissue swellings
- ◆ any other lump accessible by a needle

HOW IS FNAC PERFORMED?

Before the start of the procedure, the doctor would ask one some questions about the lump, past medical history, etc. One is given the opportunity to ask any questions or express any concerns about the procedure. The actual procedure would begin only after all these questions and concerns have been addressed. Once the skin has been cleaned at the point of entry of the needle, the doctor will palpate the lump to position it for the needle. Sampling is usually done using only a thin, small needle which leave a mark no bigger than needle prick. It should not hurt more than an injection or a blood test. If the lump cannot be felt, imaging may be needed to guide the needle towards the exact location of the lump. This can be done using ultrasound or CT scan, where the pathologist will watch the needle on the monitor and guide it to the area, or with a stereotactic mammogram (for the breast) which uses two mammograms at different angles and a computer to create exact coordinates. The needle used for FNAC has a hollow interior and is much finer than a regular needle used to draw blood.

HOW LONG DOES THE PROCEDURE TAKE?

Each sample will only take about 10 seconds to obtain. The whole procedure from start to finish usually takes no more than 10 to 15 minutes.

PREPARATIONS FOR THE PROCEDURE

Usually, there are no special preparations or restrictions before the procedure. One may eat or drink as usual. However, it is necessary to inform the laboratory if one is taking blood thinners.

ARE THERE ANY RESTRICTIONS AFTER THE PROCEDURE?

There are no restrictions and one may resume normal activities after the procedure.

WHAT TO EXPECT AFTER THE PROCEDURE?

At the site where the skin had been punctured by the needle, one may have some:

- ◆ swelling
- ◆ soreness
- ◆ pain

COMPLICATIONS

Serious complications after fine needle aspirations are rare. Minor bleeding under the skin at the aspiration site can occur. This can result in tender, swollen area called a haematoma.

Infection at the aspiration site is rare since sterile equipment and techniques are used for all fine needle aspirations.

The risk of complications from fine needle aspirations during endoscopy is slightly higher.

ADVANTAGES OF FNAC

Advantages include:

- ◆ No requirement for anaesthesia.
- ◆ No hospitalisation is required.
- ◆ It is easy to perform and is least invasive.
- ◆ It is economical.
- ◆ It has better patient compliance.
- ◆ The results are extremely satisfactory in good hands.
- ◆ The exact cytological diagnosis is available before any definitive surgery is planned.

RELIABILITY OF FNAC

The results of FNAC are highly reliable but depend on a good sampling of the right part of the lump. While no medical procedure is 100% accurate, this simple test provides diagnostic information in most cases. Some lumps do not shed cells or the lump may be difficult to find and sample with a needle. If a satisfactory sample is not obtained, further investigations or repeat of the procedure may be needed.

WHEN WILL THE RESULT BE AVAILABLE?

Results are usually available within 24 to 48 hours after the procedure.

CONCLUSION

FNAC is an effective tool in evaluating and diagnosing suspect lumps or masses. Depending on the results, the doctor may be able to advise for further tests such as histopathological examination or to tell if treatment is needed.

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