



BIOPSY

- Surgical procedure for getting tissue from living organism for its microscopical examination to give diagnosis

- Confirms diagnosis

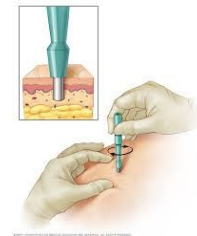
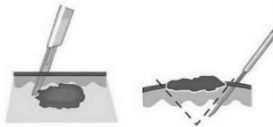
INDICATIONS

- Idiopathic lesion > 2weeks
- Inflammatory lesion that does not respond to topical treatment for 2weeks
- Persistent swelling, visible/palpable
- Beneath relatively normal tissue without any clear diagnosis.
- Lesions that is clinically suggestive of malignancy.
- Bone lesions cannot be diagnosed based on their radiographic appearance.

TYPES

Incision biopsy

- The aim to remove a portion of the lesional tissue along with a sample of normal adjacent tissue for comparison.
- It is for large, diffuse lesions > 2 cm in its maximum dimension.
- Suspected malignant potential.
- 2types WEDGE biopsy and PUNCH biopsy.



- A wedge biopsy - wedge shaped incision, begins 2–3 mm from the normal tissue and penetrates into the region surrounding the abnormal tissue. Indications: vesicular lesion, ulcerative lesion

- A punch biopsy - surgical punch of diameter (usually 4/8/10 mm in diameter). It is usually done in mass screening programmes from representative areas. Indications: BCC, Pemphigus vulgaris

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- Advantage-It is minimally invasive and generally very safe.
- Disadvantage: whole lesion cannot be examined in total.

Excision biopsy

- Small lesion <2mm which are benign.
- Entire lesion is removed for examination.
- It's diagnostic as well as curative.
- Dimension <2cm.
- Provides adequate sample for other studies eg: culture, histopathology, immunofluorescence, etc.

Frozen section:



- A frozen section is a pathological laboratory technique used for rapid microscopic analysis / diagnosis of a specimen / disease
- Usually used with oncologic surgery
- Rapid diagnosis can guide intra-operative patient management
- Use: 1) Provide rapid gross or microscopic diagnosis to identify an unknown pathologic process, identify extent of disease / evaluate margins, identify metastases or simply identify a tissue
2) Accurate diagnosis, prognosis and to adhere to research and special study protocols
3) Confirm that pathology in the given sample on permanent sections

Needle biopsy

Types:

- Core needle biopsy: involves the removal of a core of deep tissue usually using a Trucut needle.
- Types – 1) Image/CT guided biopsy
2) Vacuum assisted biopsy
3) Bone marrow biopsy
- Aspiration biopsy: refers to procedure of removing contents of a lesion, usually a swelling for the purpose of analysis or quick observation. 18-gauge needle and syringe is used. Eg: odontogenic cysts
- Fine needle aspiration cytology (FNAC): After inserting the needle into the swelling, clumps of cell aggregates are aspirated into the syringe. These are smeared on a slide, stained and visualised under a microscope.
- Indications for aspiration & FNAC are: all solid/swelling of head and neck region.
 - Initial diagnostic work-up of lymphadenopathy, metastatic lesion or lymphomas.
 - Distinguishing benign from malignant and cystic lesions from inflammatory lesions.
 - Evaluation of swelling of major salivary gland.
 - Distinguishing salivary gland neoplasm, soft tissue neoplasm.
 - Parotid lymph nodes, lymphoepithelial cells, sialadenitis with sensitivity and specificity.
 - Used for definitive diagnosis of odontogenic tumours like ameloblastoma, OKC, etc.

BIOPSY PROCEDURE

- Selection of the area of biopsy
 - Generally avoided in an infected site; however a biopsy is indicated to rule out infection.
 - Newest vesicle (within 48hrs of appearance) biopsies with adjacent normal appearing skin
 - Larger lesions, edge, the thickest portion or the area with abnormal colouration.
 - Bulla at their edges, keeping the blister roof attached.
 - Differential diagnosis is broad, biopsy from several sites can minimise sampling error.
 - Doubtful malignant character of lesion, the following aids can be used as an adjunct to select representative areas: Toluidine blue, VELscope, Vizilite plus, Microlux DL, Oral CDx.
- Preparation of the surgical field: with common skin antiseptics like povidine iodine.
- Local anaesthesia: local anaesthetic with vasoconstrictor should be given 1 cm from the area to be biopsied.
- The incision: defined, delicate incision is made to remove a portion of the tissue during an incisional biopsy. Soft tissue incisions are elliptical in shape, thus a V-wedged tissue comprising both the lesion and the healthy margins are obtained.
- Tissue handling :
 - Specimen should be handled with care to avoid crushing of tissue and is placed in fixative solution that is 10% formalin. Surplus amount of fixative should be used.
 - For immunofluorescence or immunostaining, the specimens should not be fixed and should be sent immediately to the laboratory for freezing or placed in Michel's solution.



- The specimen is sent to the pathologist, it should also carry a summary containing identification of the patient, clinical records, clinical signs, radiographic features, a provisional diagnosis and the orientation of the sample.
- Suturing of the resulting wound: Suture should achieve good haemostasis, facilitate healing and should be removed after 6–8 days. Contraindications are infected or poorly healing skin and susceptible cancerous lesion to avoid cell seeding in healthy tissue.