

CONCEPT OF BIOPSY FOR UNDERGRADUATES

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Types of Investigation

- ✓ Hematological
- ✓ Urine
- ✓ Radiological
- ✓ Imaging
- ✓ Endoscopic
- ✓ Exploratory procedures
- ✓ Miscellaneous-

• Definition

Bios—Life

Opsis—Appearance

‘Microscopic or macroscopic examination of surgically removed tissue is termed as biopsy’.

It has to be adequate and representative of the lesion.

Most use full in

Diagnostic

Therapeutic

Prognostic

Uses

- 1) Diagnosis of pathological lesion
- 2) For grading tumors –To choose treatment
- 3) To assess the state of tissue function & linked hormones.

Ex-Testicular biopsy-Spermatogenesis

Clinical data to be sent-

- Full clinical & gross pathological features and probable diagnosis.
- Name in full, Age, Sex, Hospital record No, Site and duration of lesion, Treatment given previously
- If female - Menstrual history.

Fixatives for biopsy specimen –Need and Examples

- Penetration-into deeper
- Fixation-tissues
- Hardness-Prevents structural alterations

Ex-1) 10% Formalin-Preserves Fat, Myelin, Nerve fibers & Various organisms.

2) Zenker's fluid-Most effective & reliable. Preserves nuclear structure, Bacteria, fibers of all kind.

COMPOSITION

- i. Mercuric chloride—5 gm
- ii. Potassium bichromate—2.5 gm
- iii. Sodium sulphate—1 gm
- iv. Distilled water— 100 cc
- v. Glacial acetic acid— 5 cc

Common errors

- In adequate tissue specimen
- Lost specimen
- Failure in fixity
- Miss labeling the specimen
- Failure to obtain normal adjacent tissue.

COMPLICATIONS

Earlier

- Haemorrhage
- Infection
- Poor wound healing
- Spread of tumor
- Injury to adjacent organs
- Hyper sensitivity to local anesthesia

Late

- Hypertrophic scar, keloid formation

TYPES OF BIOPSY

Excision

Incision

Aspiration

- Punch B-Any skin lesion
- Shave B-BCC
- Surgical excision or incision B
- Curettage- Warts,Keratosis,BCC,SCC
- Electro surgery-Warts,Skin tags
- Cryo surgery-
- Bite B—Cervix,Bronchus,Rectum
- Scrape B
- Needle B

Skin



- F.N.A.C-For tumors
- Aspiration cytology
- Sponge B—Malignant cells
- Biopsy with irrigation
- Direct examination of materials like sputum
- Exfoliative cytology- Pap's smear test
- High frequency drills

General procedure – Punch biopsy

Instruments required-

- 1) Disposable syringes
- 2) No 24 or 26 G Needle
- 3) Injections to subside the pain
- 4) Biopsy punches– 8mm to 2mm.

Procedure-

Lignocain 1-2 % with 1:200000 Adrenaline.

Dose-0.2-0.5 ml in a ring fashion-Punched,directly bellow the lesion

Kept in sterile bulb.

1} BONE MARROW ASPIRATION

Diagnosis

- megaloblastic anemia
- Myelosclerosis
- Agranulocytoma
- Secondary carcinoma

Prognosis

- Agranulocytoma
- Leukemia
- Anemia

Therapeutic

Bone marrow transplantation

Pre requisites

BT,CT,PT with platelet count.

Sites

- ❖ Mid manubrium sterny
- ❖ Anterior iliac crest
- ❖ Spinous process of lumbar vertebrae
- ❖ In children—Upper end of Tibia

Complications

- ❖ Bleeding from puncture site
- ❖ Perforation of Aorta
- ❖ Infection

Post care

Advise rest for 1 hr

Watch for bleeding

Analgesics

Antibiotics

2} F.N.A.C /F.N.A.B.

Most important in surgical practice.

Indications

1)Breast

- Ca-Breast-Diagnosis
- Treatment of breast cyst
- Inflammatory lesions
- Impalpable abnormalities

2)Lymphadenopathy

3)Salivary swellings

4)Thyroid swellings

5)Liver pathology

6) Pancreas-

7) Soft tissue lesions

8) Prostatic lesions

9) Testicular lesion

10) Cervical and all types of cysts.

Procedure

Required instruments

20 ml syringe

Long needle 23-26 G

Steps

- ◆ Explain the procedure
- ◆ Clean the skin
- ◆ Insert needle directly into lesion ,keep it steady
- ◆ Suction is applied,Withdraw the needle
- ◆ Pressure is application over the site.
- ◆ Contents are pored in sterile bulb.
- ◆ Staining,Drying
- ◆ Observe under microscope-100 X

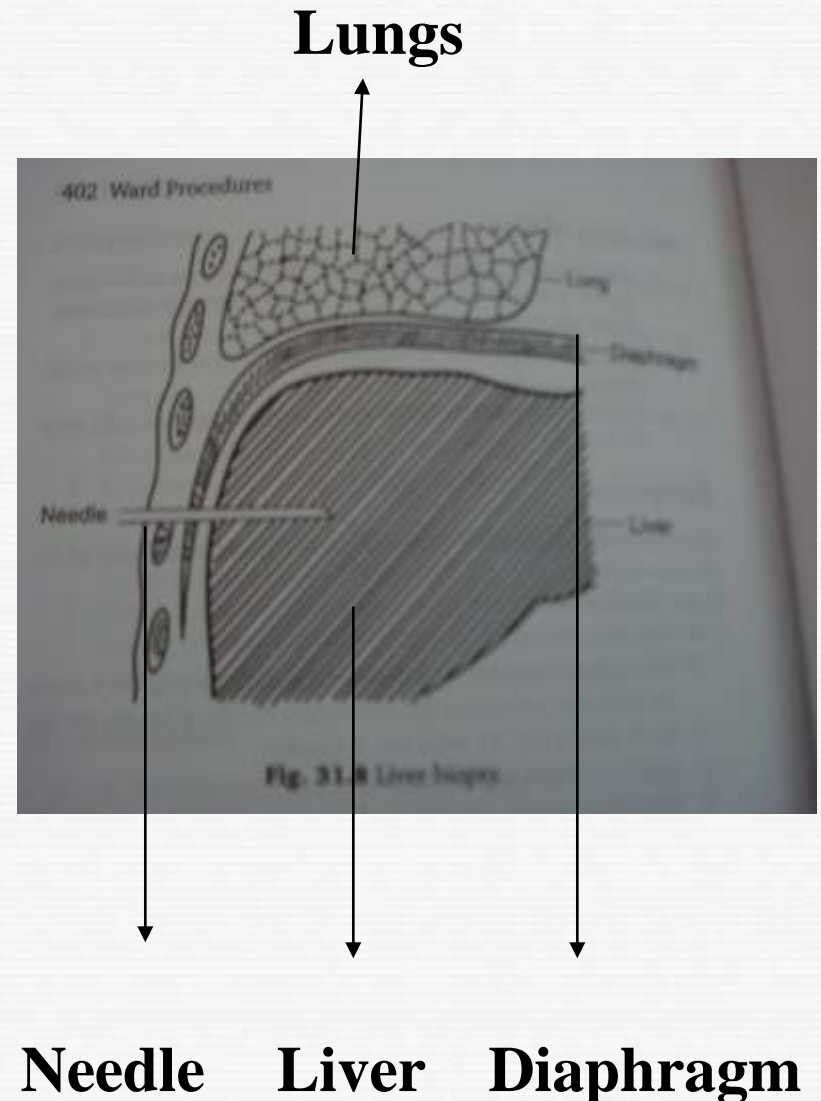
3} LIVER BIOPSY-Under ultra sound guide,Laparascopy,At Laparatomy

Diagnostic-

- ✓ Hepatomegaly of unknown origin
- ✓ Cirrhosis
- ✓ Metastatic tumors of the liver
- ✓ Hodkins lymphoma-Grading
- ✓ Pyrexia of unknown origin
- ✓ Tuberculosis of liver.

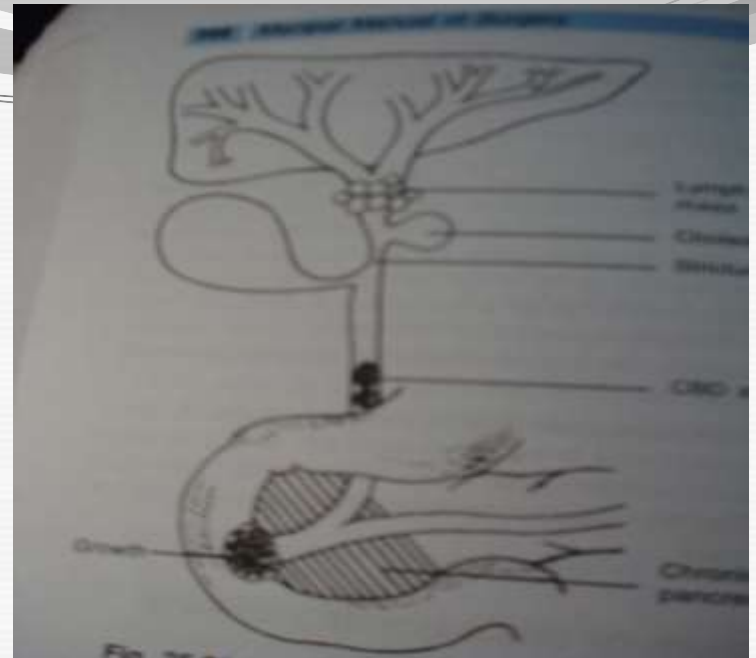
Prognostic-

- ✓ Prolonged jaundice
- ✓ Liver therapy evaluation
- ✓ Progress in liver diseases



Contraindications

- ✗ Un cooperative patients
- ✗ Obstructive jaundice →
- ✗ Bleeding disorders
- ✗ Infection in overlying skin
- ✗ Suspected haemangioma
- ✗ Suspected Hydatid cyst →
- ✗ Suspected liver abscess
- ✗ Prolonged PT
- ✗ With Ascites.



Pre medications

- o Inj-Atropine sulphate-1ml IM before the procedure
- o Inj-Diazepam 10 mg IM 30 mins before

Equipments

- 20 Ml syringe
- Menghini's needle 1.2mm
- Blade no 11 with 3 no handle.
- Normal saline 30 ml
- Specimen bottle containing 10% Formalin.

Post care

- ✿ Pt should lie on right side for 2 hrs and remain in bed for 8 hrs
- ✿ NBM 10 hrs
- ✿ Temperature ,Pulse,RR,BP, -for every 30 mins up to 4 hrs
- ✿ Analgesics-If pain.

Complications

- ✿ Hepatic coma
- ✿ Infection
- ✿ Injury to other viscera
- ✿ Pneumothorax- If lungs punctured
- ✿ Haemothorax- Lung laceration
- ✿ Bile peritonitis



Thank you