THE TAMIL NADU DR. M.G.R. UNIVERSITY

PATHOLOGY RECORD

NAME:_____

REG NO:_____

The Tamil Nadu Dr. M.G.R. Medical University, Chennai 600 032

PATHOLOGY

RECORD NOTE BOOK

"Complete reporting of pathological information is a shared responsibility of the Physician / Surgeon & Pathologist"

NAME: _____

REG NO:_____

CONTENTS

INTRODUCTION :

To treat a patient a correct diagnosis is mandatory.

The Laboratory services offer various tests that can help the physician / surgeon to arrive at a correct diagnosis whenever the tissues or samples are submitted to the laboratory along with the detailed clinical picture that is submitted in the request form.

The subject of pathology deals with the changes in the cells, tissues and the organs in disease states. These changes are identified, correlated with the clinical presentation & other laboratory tests to arrive at a diagnosis based on the ***PATHOLOGICAL BASIS OF DISEASE***.

In the Pathology Laboratory, the student shall be introduced and familiarized with the changes in the cells, tissues and the organs in many diseases and correlate these changes with other tests,clinical presentation so that a complete picture of the disease process is better understood, for the diagnosis and the management of diseases.

Basic concept of cell, tissues and organs:

This concept is familiarized by reinforcing the basic knowledge acquired after the 1st year in the subjects of Anatomy, Histology, Physiology and Biochemistry and introducing the changes in cells & tissue in disease states.

Practical Curriculum:

During the one and half years in the Department of Pathology, (second year)the student is taught and shown the pathogenesis and the changes in the cells, tissues and organs and interpretation of changes along with other lab tests through microscopic slides viewing and changes in the gross specimens. He/she is shown an analytical approach to the diagnosis of diseases based on microscopic / macroscopic appearance and clinical presentation.

Pathology practical hours are divided as:

1) Surgical Pathology (slides and gross specimens)

   Exercise: a) Slides / gross viewing
   (General pathology, systemic pathology – Total 37 slides)

   b) 5 Histopathology cases
   (from ward to the pathology department)

2) Cytopathology
   a) 4 FNAC Cases – at the FNAC Clinic
   b) Slide viewing : FNAC
   Fluid Cytology
   PAP Smear

3) Clinical Pathology

Performing and interpretation of the blood test Peripheral Smear
Haemoglobin Estimation Blood Grouping & Typing

b) Performing Urine Examination
Physical
Chemical

Interpretation with clinical correlation.

WHAT THE STUDENT NEEDS TO KNOW IN THE PRACTICAL HOURS?

I) SURGICAL PATHOLOGY:

The practical hours for each student shall last for 1 hour/session as per the MCI guidelines through 1½ years. He / She will be BRIEFED ON THE ETIOLOGY, PATHOGENESIS, MICROSCOPIC, MACROSOPIC aspects&clinical presentations of a particular topic and the relevant slides shall be focused under the microscope and he / she is taught to visualize and identify the changes.

The gross specimen shall be displayed and the changes are taught. He / She shall be trained to identify and correlate the microscopic image with the gross appearance and the clinical presentation, so that these can be correlated to the pathogenesis and the clinical presentation better understood.

The student shall learn the specific changes in cells and organs for the diagnosis of diseases.

Surgical Pathology – Log

A student shall identify 5 cases from surgery ward that he / she is posted and make an entry as follows in the record.

Histopathology Cases

- Case 1

Name of Patient : Age : Sex :

Ward : IP No. :

Clinical Diagnosis :

Clinical Finding :

Date of Surgery :

Type of Surgery :

Specimen received at Pathology Department on _____ in 10% neutral buffered formalin (if not, mention the solution in which specimen received)

Pathology No. :

Days of processing :

Date of reporting :

Macroscopic Description:

Microscopic Description:

Ancillary studies done (IHC, Special stain,IF):

Diagnosis:

II) CYTOLOGY

This is divided intoFluid Cytology, Pap Smear and FNAC.

1) **Fluid Cytology:** To familiarize the students on the presence of malignant cells in Body fluids as a mode of coelomic spread or metastatic spread. Slides of abnormal cells in Ascitic Fluid shall be demonstrated for identification of changes to arrive at a diagnosis.

2) PAP Smear:

For diagnosis of Hormonal status and cervical carcinoma.

The student shall be familiarized on visualizing a PAP smear, the staining technique and identify the changes and interpretation of 2 important conditions: LSIL and HSIL.

3)FNAC : This is an outpatient procedure performed at the FNAC clinic.

The student shall attend the FNAC clinic – observe how FNACs are done and how they are reported and how report is despatched to the patient. He / She should observe **5 FNACS** and document it in the record in the following format.

1) FNAC NO / DATE OF FNAC :/ 2017

Name of Patient : Age : Sex :

IP / OP :

Site of FNAC requested :

Clinical Examination:

Site :

Size :

Dimensions :

Plane :

Mobility :

Tenderness :

Skin :

Amount of Aspirate :

Nature of aspirate : Number of slides made:

Microscopic Description:

Diagnosis:

III)CLINICAL PATHOLOGY

The student shall learn to do basic blood tests (PS, Hb, Blood group) and write interpretation of peripheral smears in various diseases:

Prepare a peripheral smear, stain & report.

1) Format of reporting of PS.

RBC - Normocytic / Microcytic / Macrocytic
Normochromic / Hypochromic
Anisocytosis / Poikilocytosis
Nucleated RBCs
Hemoparasites

WBC - Number – Increased / Decreased
Mature / Immature cells

Mature cells :

DC :

N: E: L: M: B:

Immature Cells :

Name of immature cells and description and DC :

Platelets - Number - Increased / Decreased
Morphology - Normal / Clumped / Giant Platelets

Diagnosis :

2) Perform Hb estimation and interpretation

3) Perform Blood Grouping and interpretation

HOME WORK

- Writing a request for Surgical Pathology specimen.
- Writing a request for Clinical Pathology.
- Writing a request for FNAC.

---------X----------

INDEX

S.NO	SLIDE	DATE	PAGE	SIGNATURE
	I.SURGICAL PATHOLOGY			
	a)GENERALPATHOLOGY:			
1.	Acute appendicitis			
2.	Granulation tissue			
3.	Chronic venous congestion-Lung			
4.	Chronic venous congestion-Liver			
	BLOOD VESSEL:			
5.	Thrombus			
6.	Atheroma			
7.	Actinomycosis			
	VASCULAR TUMOR:			
8.	Capillary hemangioma			
9.	Cavernous hemangioma			
10.	Lipoma			
	b)SYSTEMIC PATHOLOGY:			
	LUNG:			
11.	Pneumonia			
12.	Bronchiectasis			
13.	Tuberculosis lung			
	GIT:			
14.	Gastric ulcer			
15.	Tuberculosis intestine			
16.	Adenocarcinoma colon			

	LIVER:			
17.	Cirrhosis			
18.	Fatty liver			
	URINARY TRACT:			
19.	Chronic pyelonephritis			
20.	Renal cell carcinoma			
21.	Wilms tumor			
	FGT:			
22.	Teratoma			
23.	Leiomyoma			
24.	Products of conception			
	BREAST:			
25.	Fibroadenoma			
26.	Carcinoma breast			
	THYROID:			
27.	Colloid goiter			
28.	Papillary carcinoma			
	SKIN:			
29.	Squamous cell carcinoma			
30.	Basal cell carcinoma			
31.	Malignant melanoma			
	BONE:			
32.	Osteoclastoma			
33.	Osteosarcoma			
34.	Chondroma			
	LYMPH NODE:			
35.	Hodgkin lymphoma			
36.	Secondary carcinomatous deposits			
37.	Caseating tuberculous lymphadenitis			

	II.CYTOPATHOLOGY **a)FNAC** **BREAST:**			
1. 2.	Fibroadenoma Ductal carcinoma			
	LYMPH NODE:			
3. 4.	Tuberculosis Secondary carcinomatous deposits			
	b)FLUID CYTOLOGY			
1.	Ascitic / Pleural fluid- Positive for malignancy			
	c)PAP SMEAR			
1. 2.	LSIL HSIL			
	III.CLINICAL PATHOLOGY **RBC DISODER:**			
1. 2.	Microcytic anemia Macrocytic anemia			
	WBC DISODER: **NON NEOPLASTIC:**			
1. 2. 3.	Neutrophilia Eosinophilia Lymphocytosis			
	NEOPLASTIC:			
1. 2. 3. 4.	Acute myeloid leukemia Chronic myeloid leukemia Acute lymphoblastic leukemia Chronic lymphocytic leukemia			

1.	**HEMOPARASITES:** Malarial parasite			
1. Preparing a peripheral smear & reporting. 2. 3. 4.	**IV.EXPERIMENTS:** Hemoglobin estimation. Blood grouping & typing. Urine examination.			
1. 2.	**V.CASES:** Surgical pathology FNAC			
1. 2. 3.	**VI.HOME WORK** **Writing a request for:** Surgical pathology specimen Clinical pathology FNAC			

THE TN DR. M.G.R. UNIVERSITY

CERTIFICATE OF COMPLETION

This is to certify that this is a bonafide record of work done

by second year MBBS student _____

from_____to_____in the Department of Pathology.

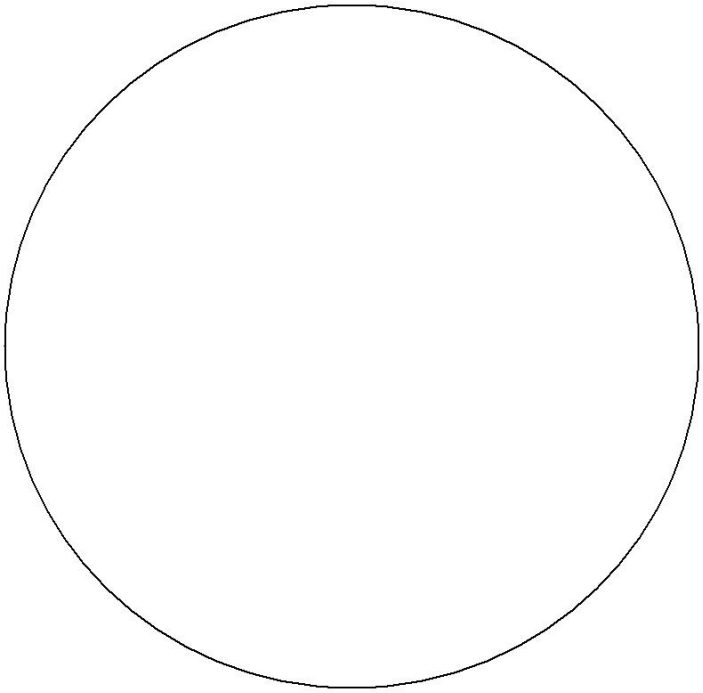
PROFESSOR &HOD

Submitted for the practical examination held on_____.

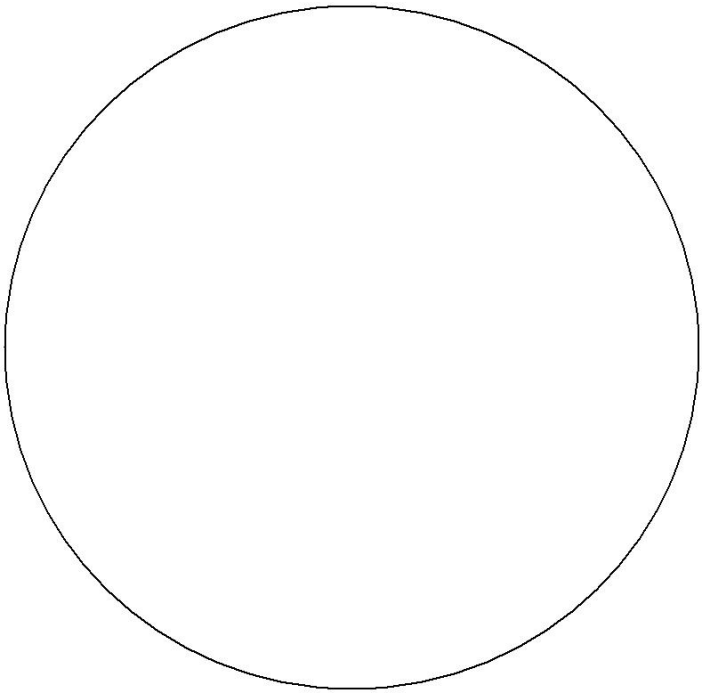
SURGICAL PATHOLOGY

a)GENERAL PATHOLOGY

1.ACUTE APPENDICITIS



2.GRANULATION TISSUE



SURGICAL PATHOLOGY

a)GENERAL PATHOLOGY

1.ACUTE APPENDICITIS

Gross:

External surface-Odematous & congested.

C/S: Lumen occluded by exudate.

Microscopy:

Necrotic debris in the lumen.

Transmural inflammatory infiltrate.

Neutrophilic infiltration & odema in the submucosa & muscularis propria.

Serosal congestion.

2.GRANULATION TISSUE

Microscopy:

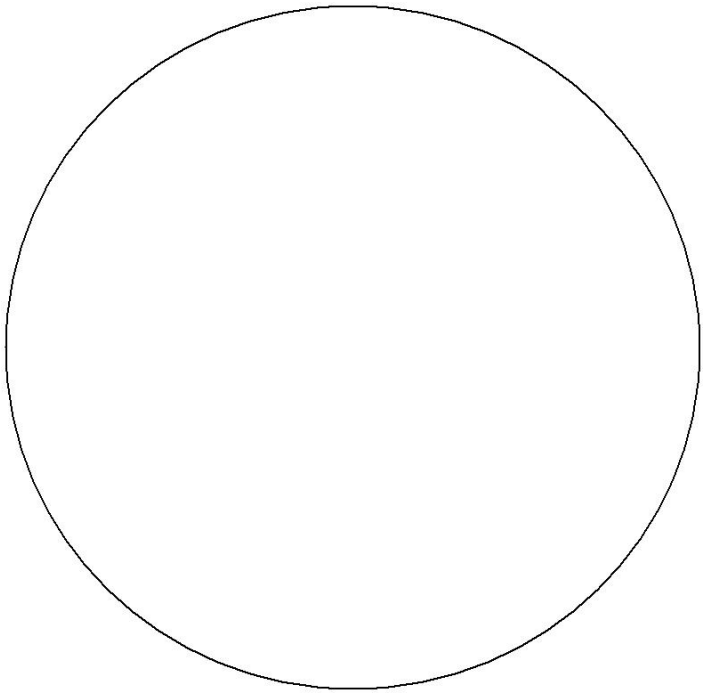
Numerous proliferating capillaries.

Proliferating spindle shaped fibroblasts.

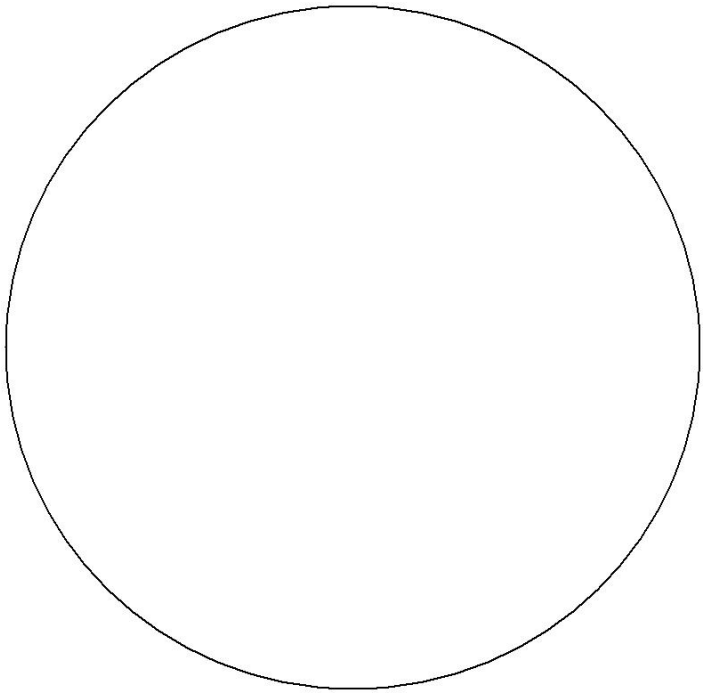
Scattered inflammatory cells in odematous stroma.

Note-Granulation tissue called because of its appearance (granular) on the surface of healing wounds.

3.CHRONIC VENOUS CONGESTION-LUNG



4.CHRONIC VENOUS CONGESTION-LIVER



3.CHRONIC VENOUS CONGESTION-LUNG

Gross:

Enlarged, dark in color,boggy.

C/S:Frothy fluid exudes.

Microscopy:

Alveolar septa shows odema,congested (dilated) capillaries.

Alveolar spaces show proteinaceous fluid & hemosiderin laden macrophages (heart failure cells), focal fibrosis can be seen.

4.CHRONIC VENOUS CONGESTION-LIVER

Gross:

Liver enlarged,sharp borders.

C/S:Nutmeg appearance due to alternating areas of congestion & fatty change.

Microscopy:

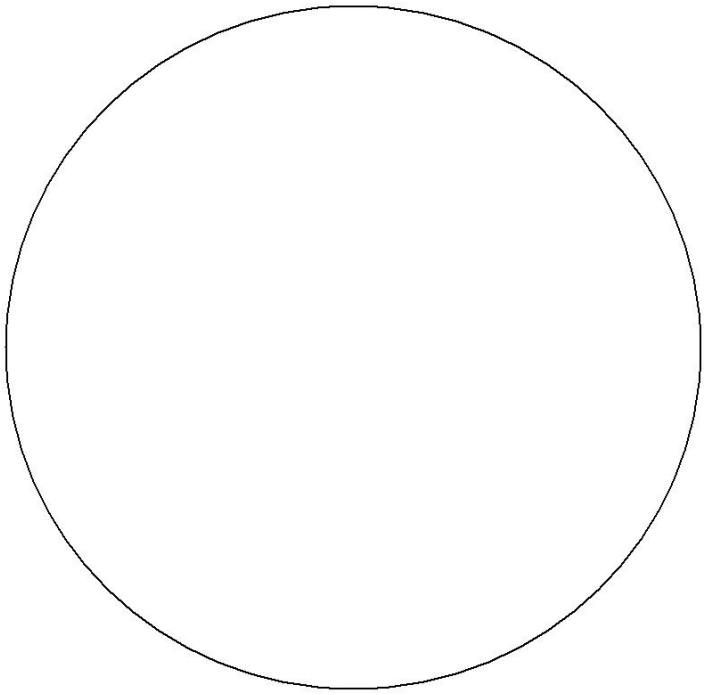
Dilated &congested central veins.

Ischemic necrosis (dark small hepatocytes) around central vein.

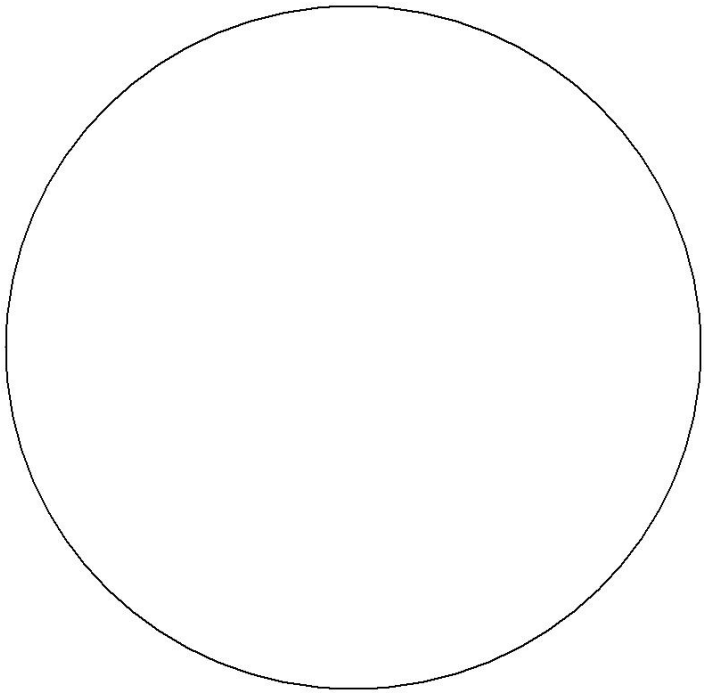
Sinusoidal congestion.

Periportal hepatocytes show fatty change.

5.THROMBUS VESSEL



6.ATHEROMA



5.THROMBUS VESSEL

Gross:

Dull appearance,laminations present.

Lines of Zahn:Layers consisting of platelets & fibrin alternating with layers of RBC.

Microscopy:

Lumen occluded by eosinophilic fibrin material admixed with scattered RBC.

In late stages,organisation of thrombus characterized by fibroblast & capillary proliferation.

6.ATHEROMA

Gross:

Sections of aorta show fatty streaks,plaques that are eccentrically placed, elevated,pale yellow & smooth surfaced lesion with ulceration.

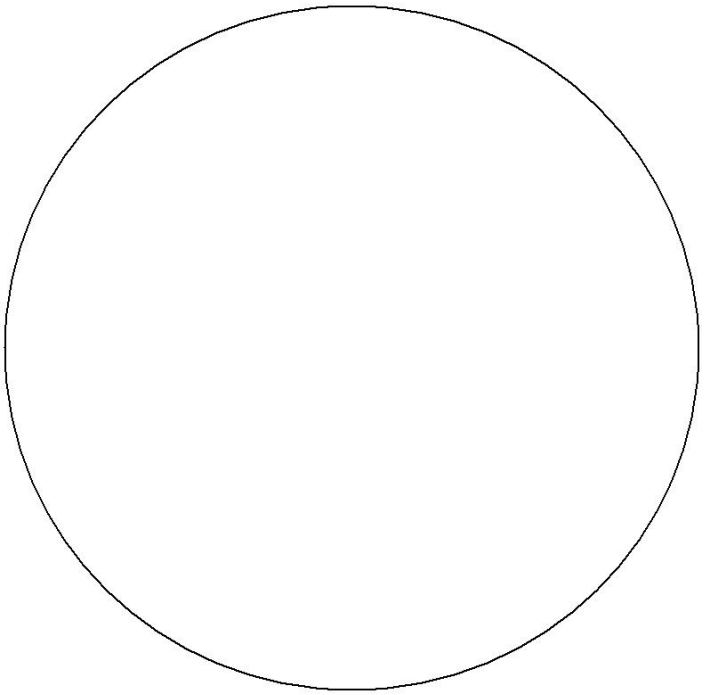
Microscopy:

Subintimal lesion.

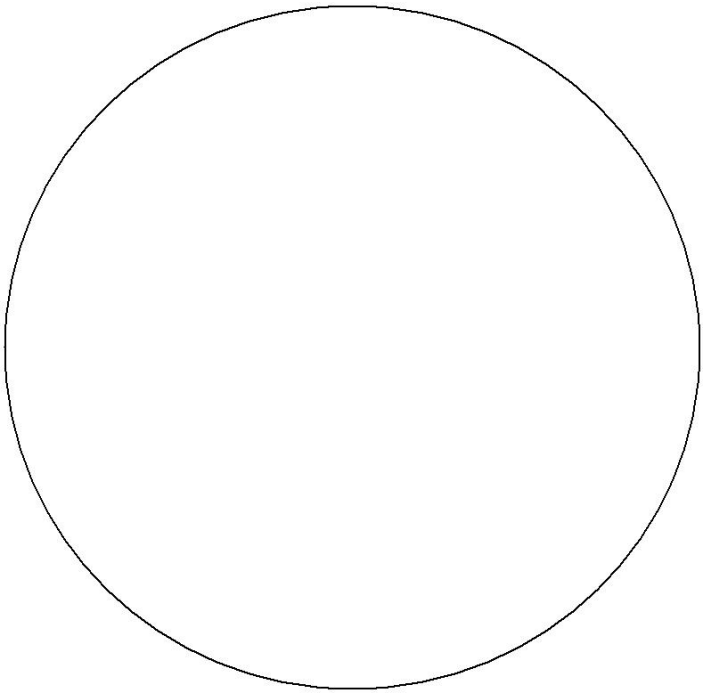
Intimal thickening will be present.

Atheroma is characterized by smooth muscles, foamy histiocytes ,cholesterol clefts in the center & covered by fibrous cap.

7.ACTINOMYCOSIS



8.CAPILLARY HEMANGIOMA



7.ACTINOMYCOSIS

Gross:

Multiple discharging sinuses & may contain sulphur granules.

Causative organism:

Anaerobic gram positive filamentous bacteria which are normal flora in oral cavity, GIT& FGT.

Microscopy:

Bacterial colonies characterized by amorphous,granular basophilic filaments surrounded by eosinophilic material (Splendore-Hoeppli phenomenon).

Bacterial colony is surrounded by inflammatory cells predominated by neutrophils.

8.CAPILLARYHEMANGIOMA

Gross:

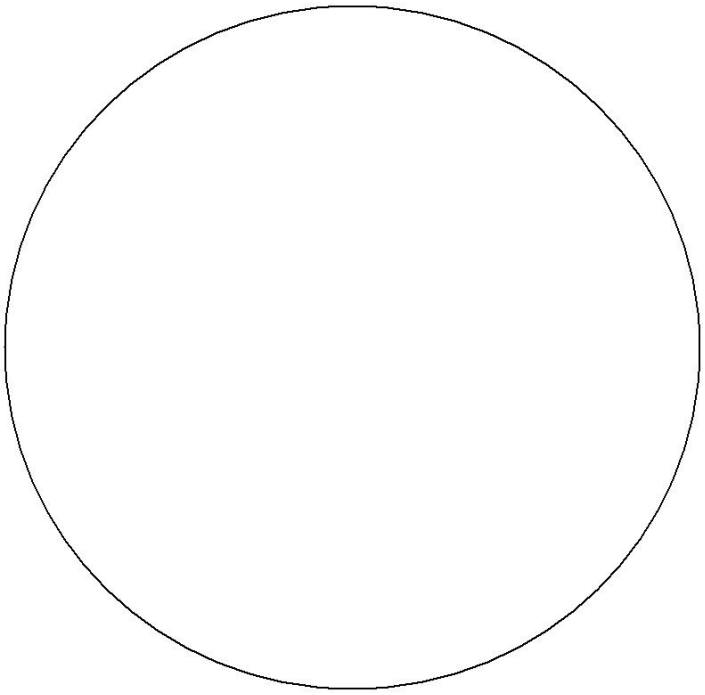
Well circumscribed dermal to deep seated lesion.

C/S: Reddish& sponge like.

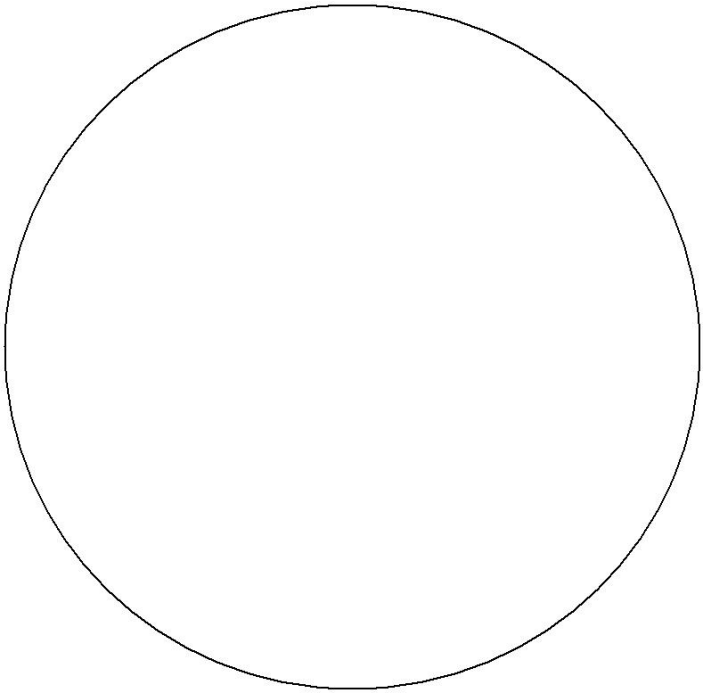
Microscopy:

Lobular architecture formed by small vascular channels lined by flattened endothelial cells & these lobules are separated by scant connective tissue stroma.

9.CAVERNOUS HEMANGIOMA



10.LIPOMA



9.CAVERNOUS HEMANGIOMA

Gross:

Sharply defined lesion in deeper tissues & organs.

C/S: Reddish.

Microscopy:

Large thin walled cavernous type of blood vessels lined by single layer of flattened endothelium.

10.LIPOMA

Gross:

Encapsulated round to oval mass.

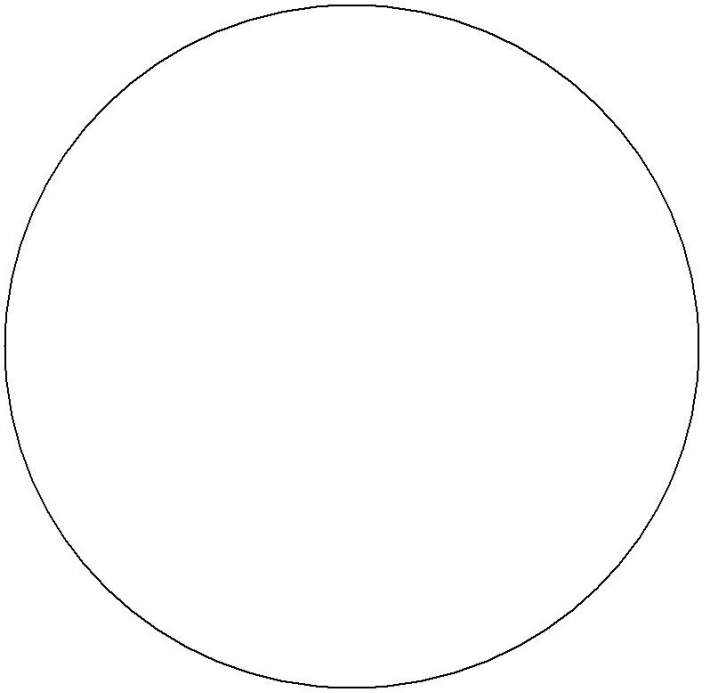
C/s: Soft,lobulated,yellowish,greasy.

Microscopy:

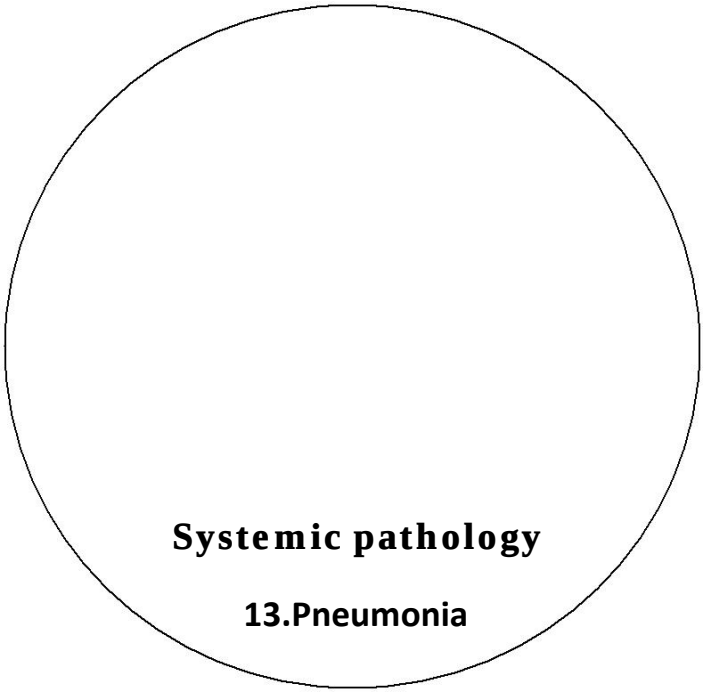
Lobules of mature adipocytes which have vacuolated cytoplasm & eccentrically placed nuclei separated by fibrous septa.

b)SYSTEMIC PATHOLOGY

11.PNEUMONIA



12.BRONCHIECTASIS



b)SYSTEMIC PATHOLOGY

11.PNEUMONIA

Gross:

Based on stages,gross features varies.

Acute congestion stage:Enlarged,heavy,dark red.

Red hepatisation:Red,firm,liver like consistency.

Grey hepatisation: Grey tan.

Microscopy:

Stage of congestion- Congested septa, septal odema,proteinaceous fluid in alveoli.

Stage of red hepatisation- Dilated vascular spaces filled with odematous fluid,RBC& neutrophils in alveolar spaces.

Stage of grey hepatisation- Central alveoli show alveolar spaces filled with neutrophils, macrophages & fibrinous material communicating through pores of Kohn,retraction of fluid.

12.BRONCHIECTASIS

Gross:

Bilateral involvement of lower lobes.

Fibrotic & thickened pleura.

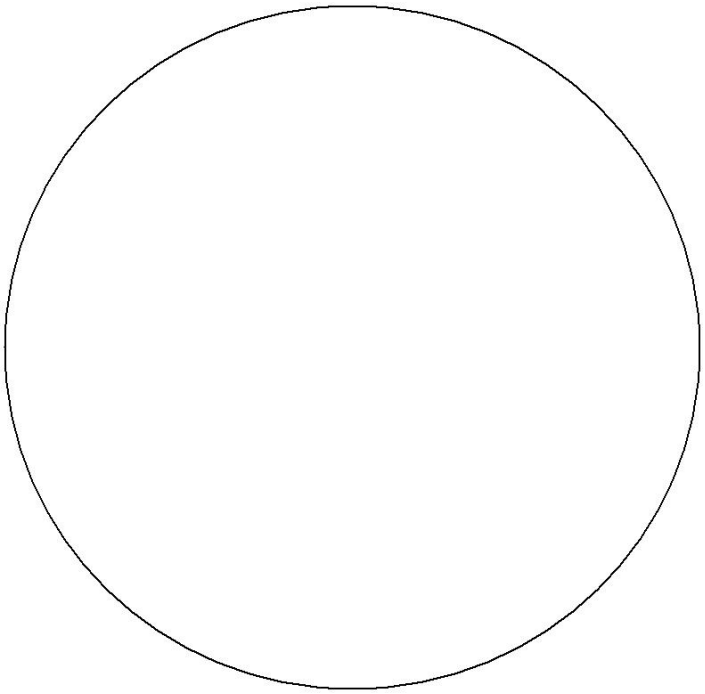
C/S: Honey combed appearance due to dilated airways containing mucopurulent secretion.

Dilated bronchioles can reach almost pleural surfaces.

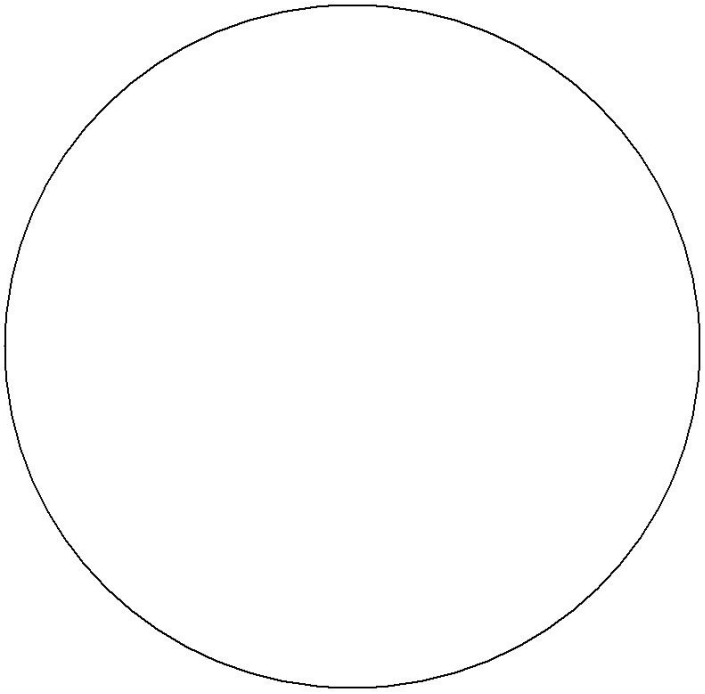
Microscopy:

Dilated bronchioles with ulceration of lining epithelium infiltrated by inflammatory cells & focal areas showing squamous metaplasia of the respiratory epithelium.

13.TUBERCULOSIS LUNG



14.GASTRIC ULCER



13.TUBERCULOSIS-LUNG

Gross:

C/S:Greywhite,soft granular necrotic foci that vary in size with or without cavity formation.

Microscopy:

Lung parenchyma with foci showing granulomas.

Granuloma show central caseous necrosis ,Langhans giant cells, surrounded by epithelioid histiocytes, lymphocytes& fibroblasts.

14.GASTRIC ULCER

Gross:

Predominantly located along lesser curvature near interface of body &antrum.

Round to oval with punched out defect.

Base: smooth & clean.

Mucosal margins-usually in level with the surrounding mucosa.

Mucosal folds converge to the center of the ulcer (spoke wheel appearance).

Microscopy:

Ulcerated gastric mucosa.

Ulcer shows four zones:

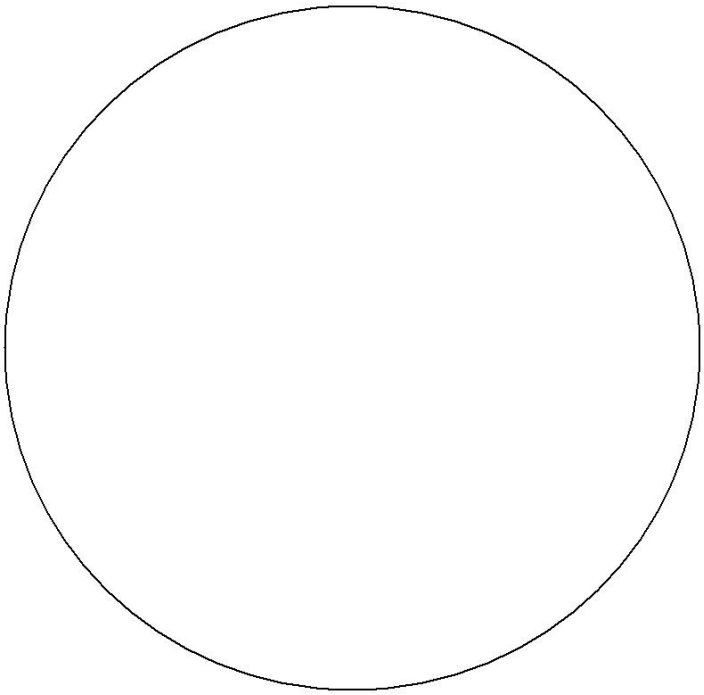
Uppermost layer of necrosis &fibrinous material.

Second layer of inflammatory cells-neutrophils.

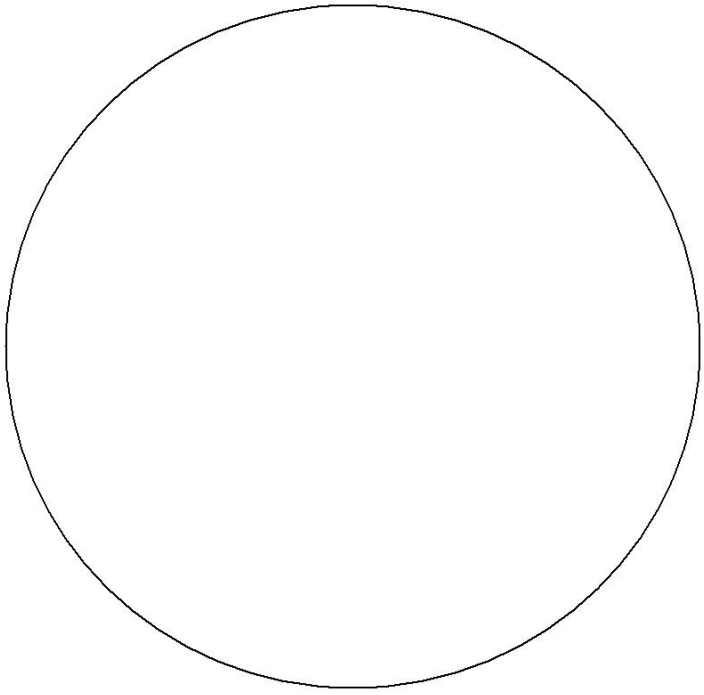
Third layer of granulation tissue with chronic inflammatory cells.

Innermost layer of fibrocollagenous scar tissue.

15.TUBERCULOSIS INTESTINE



16.ADENOCARCINOMA COLON



15.TUBERCULOSIS-INTESTINE

Gross:

Lesion begins in Peyer's patches &spreads along lymphatics leading to large ulcers transverse to the axis of the bowel.

Microscopy:

Ulcerated intestinal mucosa with caseating granulomas in mucosal, submucosal, muscular & serosal coat.

16.ADENOCARCINOMA COLON

Gross:

Polypoidal,ulcerative lesion in the mucosal aspect.

Right sided lesions- Polypoidal,exophytic,cauliflower like.

Left sided lesions-Annular lesion-napkin ring constriction.

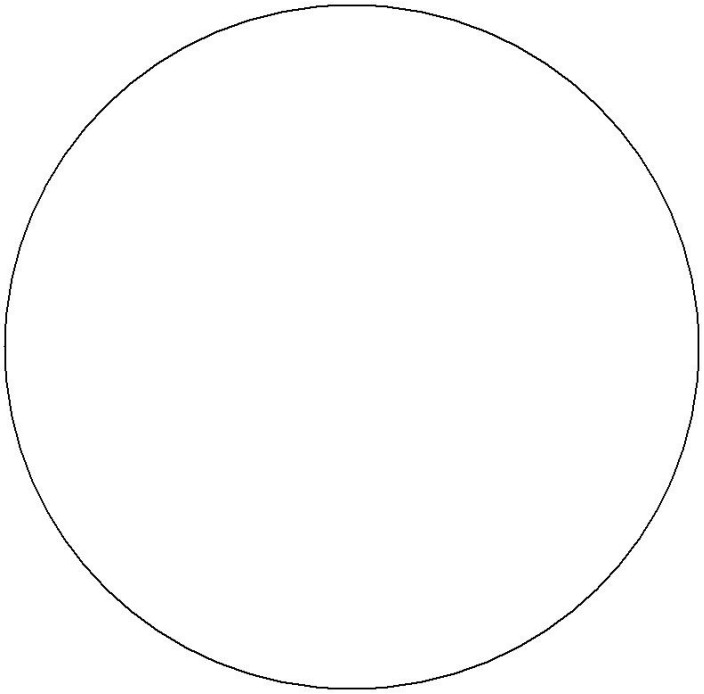
Microscopy:

Ulcerated colonic mucosa with malignant transformation.

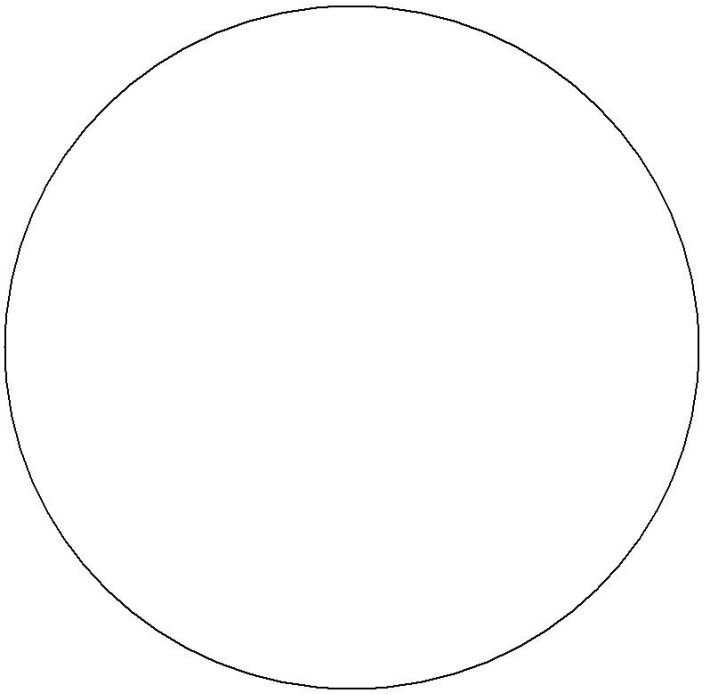
Closely packed malignant glands lined by columnar cells with hyperchromatic nuclei.

Intra & extracellular pools of mucin.

17.CIRRHOSIS



18.FATTY LIVER



17.CIRRHOSIS

Gross:

Small,distorted liver.

E/S: Coarse nodules of varying sizes.

Micronodular:<3mm nodules.

Macronodular:>3mm nodules.

Microscopy:

Altered liver architecture with loss of normal relationship between central vein & portal triad.

Hepatocytes show fatty change& regenerative atypia& form nodules separated by thick fibrous septa.

Periportal areas show focal lymphocytic infiltration.

18.FATTY LIVER

Gross:

Liver- Enlarged,pale,yellow.

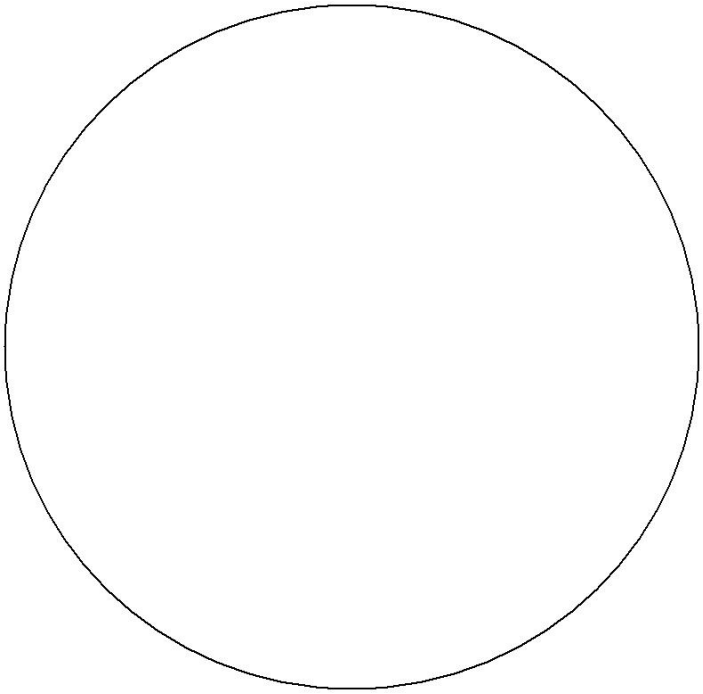
C/S: Waxy.

Edge rounded.

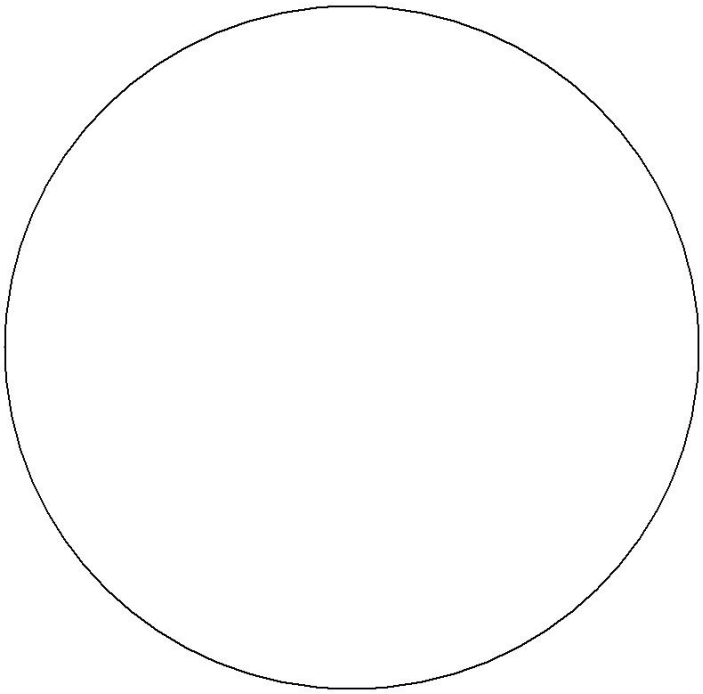
Microscopy:

Hepatocytes show vacuolated appearance with nucleus pushed to the periphery.

19.CHRONIC PYELONEPHRITIS



20.RENAL CELL CARCINOMA



19.CHRONIC PYELONEPHRITIS

Gross:

Small & contracted kidney.

Surface: Irregular & scarred.

Capsule-stripped off with difficulty due to adherence of scars (U shaped depression).

Microscopy:

Chronic tubulointerstitial inflammation,atrophy& fibrosis.

Tubules show atrophy & dilatation & filled with eosinophilic material referred to as thyroidization of tubules.

Glomeruli- Periglomerular fibrosis &hyalinization.

20.RENAL CELL CARCINOMA

Gross:

Variegated appearance: bright yellow due to lipid accumulation.

Grey white due to fibrosis,necrosis.

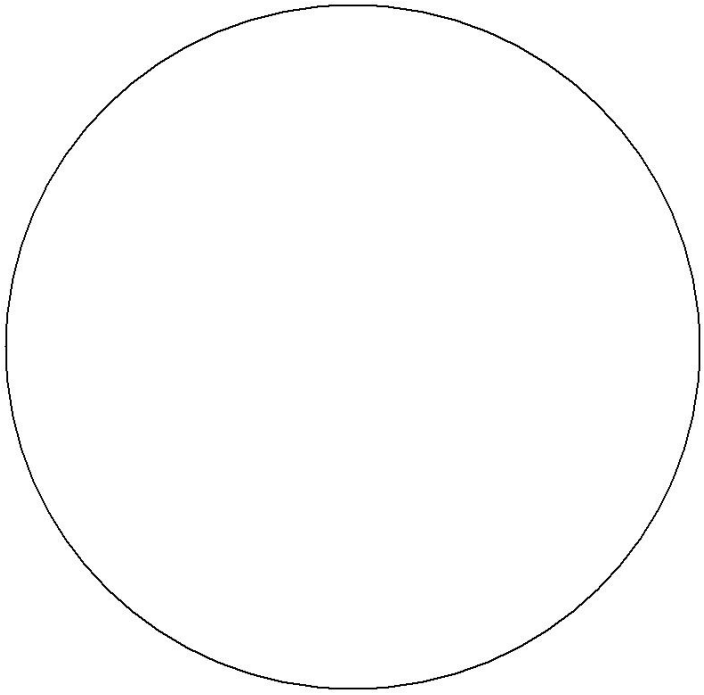
Foci of hemorrhage.

Microscopy:

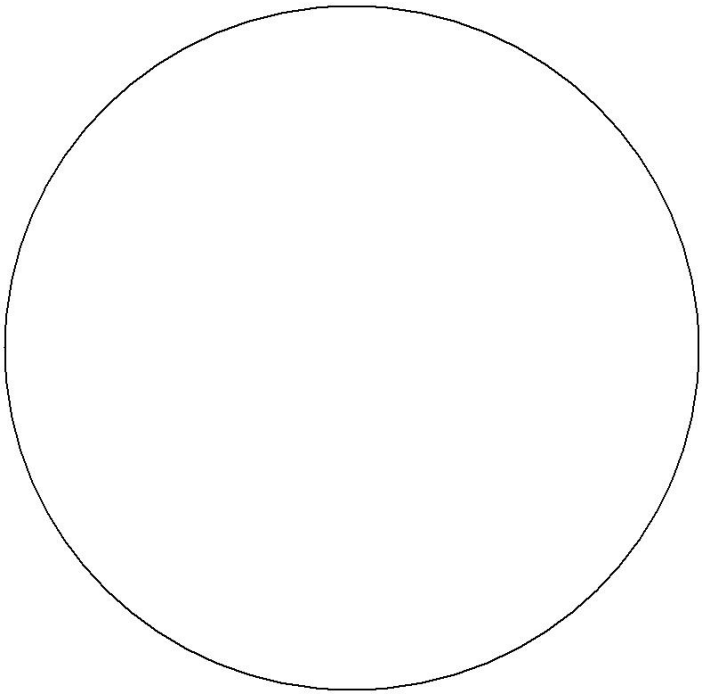
Renal parenchyma with a neoplasm composed of nests of tumor cells separated by richly vascular ,scanty fibrous stroma.

Two types of cells-clear cells &eosinophilic cells.

21.WILMS TUMOR



22.TERATOMA



21.WILMS TUMOR

Gross:

Solitary mass.

C/S:Palegrey,friable,hemorrhagic& cystic.

Pushing border.

Microscopy:

Triphasic combination of blastemal,stromal& epithelial cell types.

Blastemal component characterized by sheets of blue cells with scant cytoplasm & overlapping nuclei with dispersed chromatin.

Epithelial differentiation is usually in the form of abortive tubules or glomeruli.

Stromal cells are fibrocytic & myxoid in nature.

22.TERATOMA

Gross:

Cystic, ovoid/multiloculated mass.

Content- Greasy & composed of sebum, hair, keratin, tooth.

Rokitansky protuberance-nodule composed of fat with bone protruding into the cyst (contains all three germ layers).

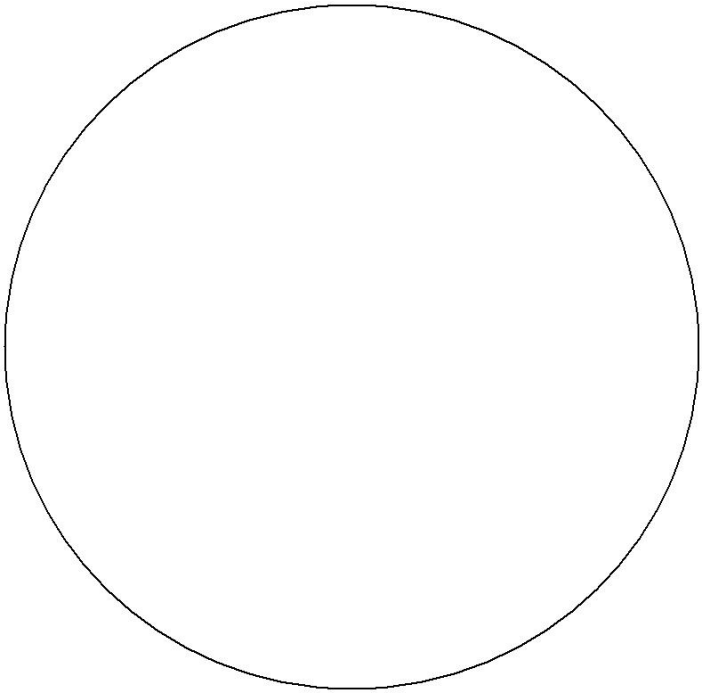
Microscopy:

Cyst lined by squamous epithelium with adnexal elements (ectodermal derivative).

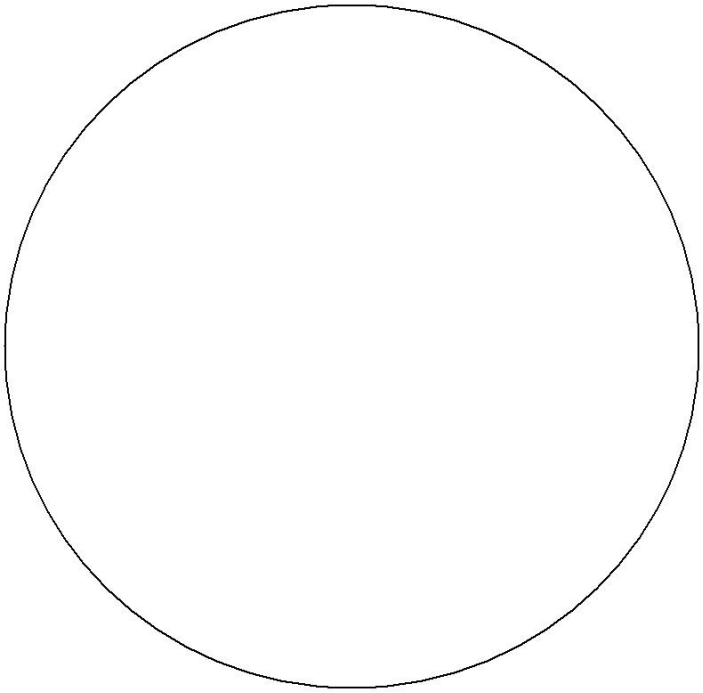
Foci of respiratory mucosa with cartilage/foci of gastric or intestinal epithelium (endodermal derivative).

Foci of fat & fibrous tissue (mesodermal derivative).

23.LEIOMYOMA



24.PRODUCTS OF CONCEPTION



23.LEIOMYOMA

Gross:

Well circumscribed grey white, nodular masses of variable size.

C/S: Whorled,greywhite,firm&can be shelled out easily.

Microscopy:

Interlacing bundles &whorls of spindle shaped cells with elongated cigar shaped nuclei.

No nuclear atypia.

24.PRODUCTS OF CONCEPTION

Gross:

Grey brown friable material.

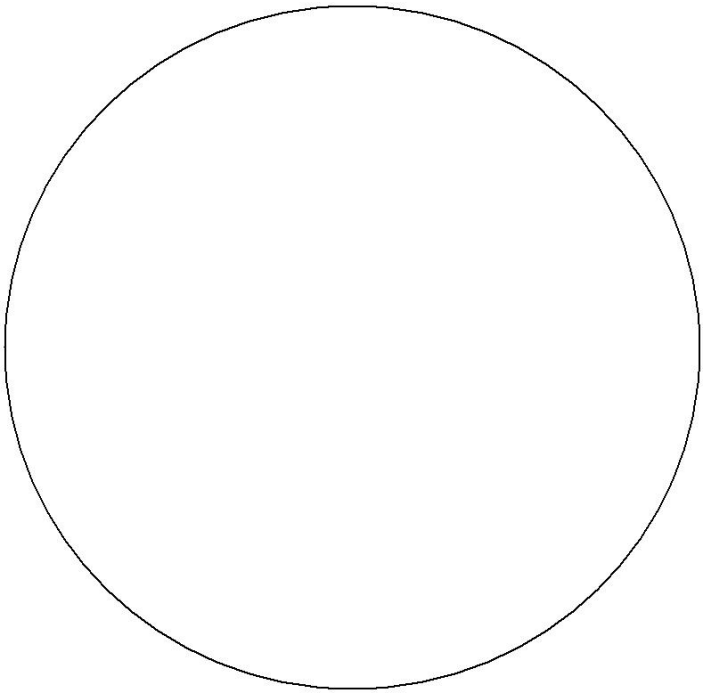
Fetal parts can be seen.

Microscopy:

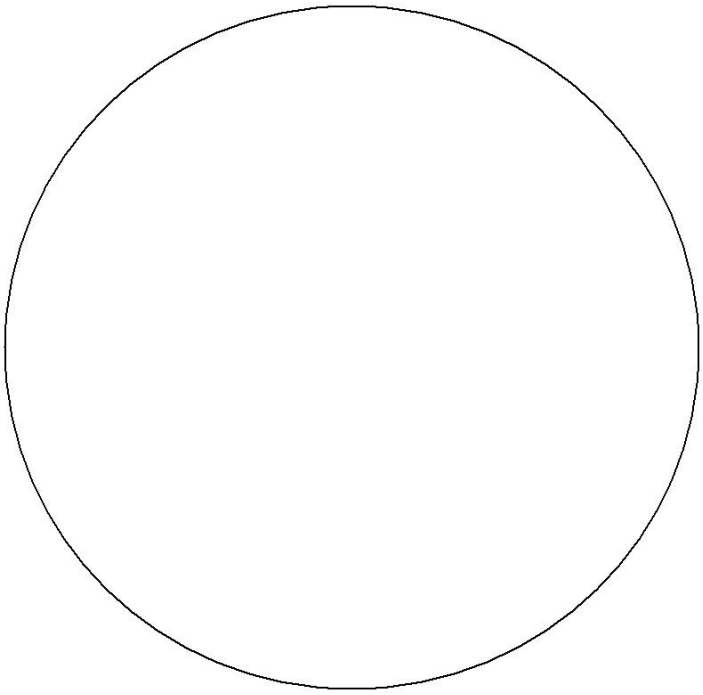
Presence of chorionic villi composed of delicate mesh of central stroma surrounded by 2 discrete layers of epithelium-the outer syncytiotrophoblast & inner cytotrophoblast.

Endometrium shows decidualization (decidual cells have well defined cell borders, eosinophilic cytoplasm & central nucleus).

25.FIBROADENOMA



26.CARCINOMA BREAST



25.FIBROADENOMA

Gross:

Well circumscribed.

C/S:Slit like spaces that bulge above the surrounding tissue.

Microscopy:

Proliferation of epithelial & stromal elements

Ducts lined by epithelial &myoepithelial cells.

Cellular stroma showing hyalinisation,myxoid change.

26.CARCINOMA BREAST

Gross:

E/S: Ill defined lump.

Firm to hard in consistency.

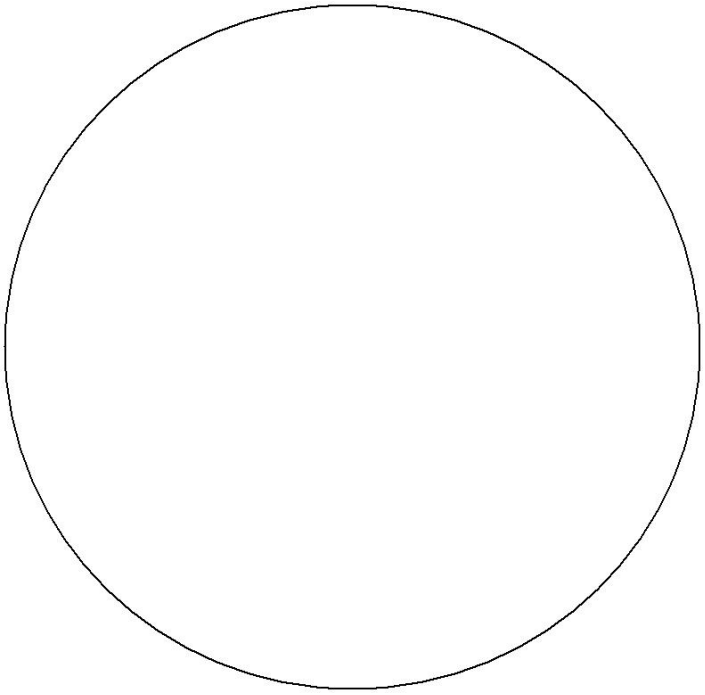
C/S: Grey white, fleshy growth, variegated appearance.

Note- Grating sound due to foci of calcification.

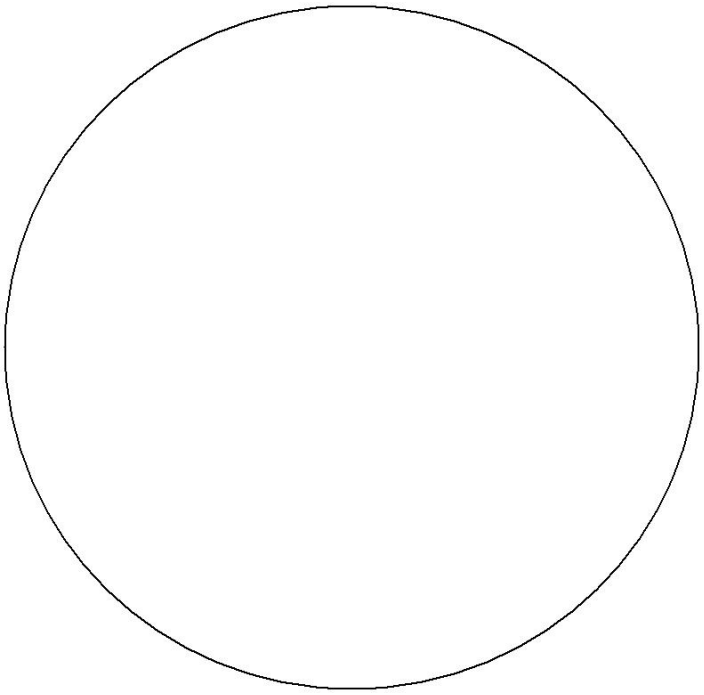
Microscopy:

Round to polygonal malignant epithelial cells with hyperchromatic pleomorphic nuclei in tubules, cords & sheets infiltrating into the stroma.

27.COLLOIDGOITRE



28. PAPILLARY CARCINOMA- THYROID



27.COLLOID GOITRE

Gross:

E/S: Bosselated

C/S: Multiple brown gelatinous colloid filled nodules lacking a distinct fibrous capsule.

Microscopy:

Enlarged thyroid follicles of varying sizes lined by flattened to cuboidal epithelial cells.

Interstitium shows fibrosis & hemorrhage.

28.PAPILLARY CARCINOMA THYROID

Gross:

Enlarged thyroid.

C/S: Encapsulated grey white, granular & focal calcification may be seen.

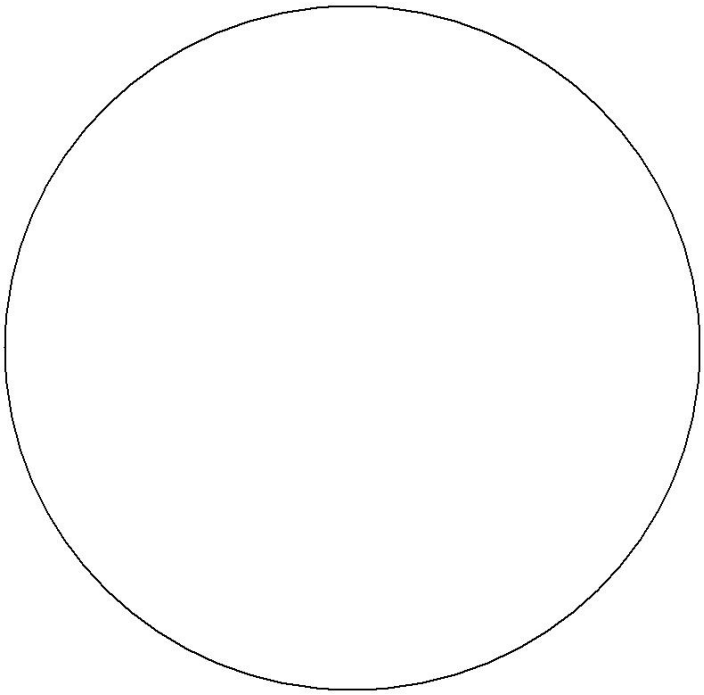
Microscopy:

Shows a neoplasm arranged in papillary configuration & lined by columnar cells with nuclei exhibiting clearing, grooving, inclusions referred to as Orphan Annie eye nuclei.

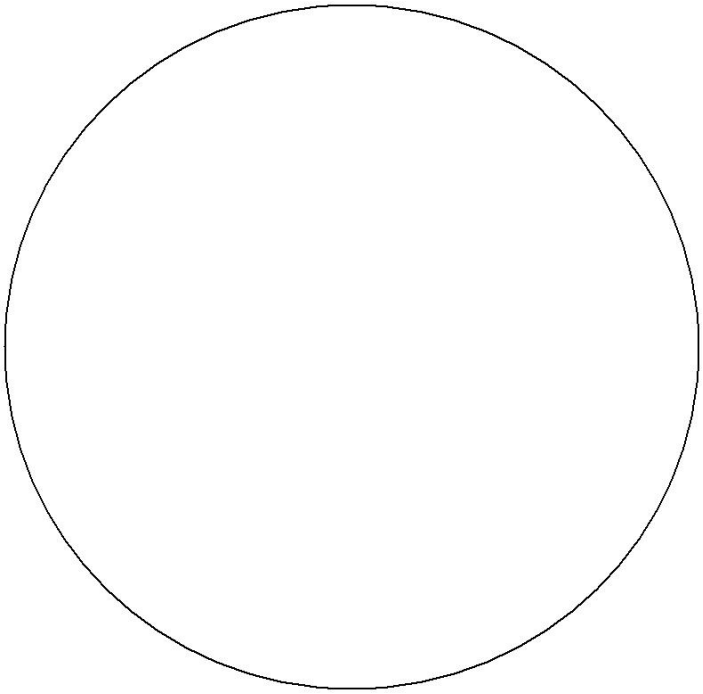
Psammoma bodies- Lamellated concentric calcified structures.

Note- Causes for Psammoma bodies-Papillary ca thyroid, serous papillary cystadenocarcinoma of ovary, meningioma.

29.SQUAMOUS CELL CARCINOMA



30.BASAL CELL CARCINOMA



29.SQUAMOUS CELL CARCINOMA

Gross:

Ulceroproliferative growth.

C/S: Grey white, firm, hemorrhagic & necrotic.

Microscopy:

Nests & islands of malignant squamous epithelial cells which are polyhedral with eosinophilic cytoplasm,vesicular nuclei & prominent nucleoli.

Keratin pearls –whorls of keratin surrounded by malignant squamous epithelial cells.

30.BASAL CELL CARCINOMA

Clinical presentation:

Papule or nodule.

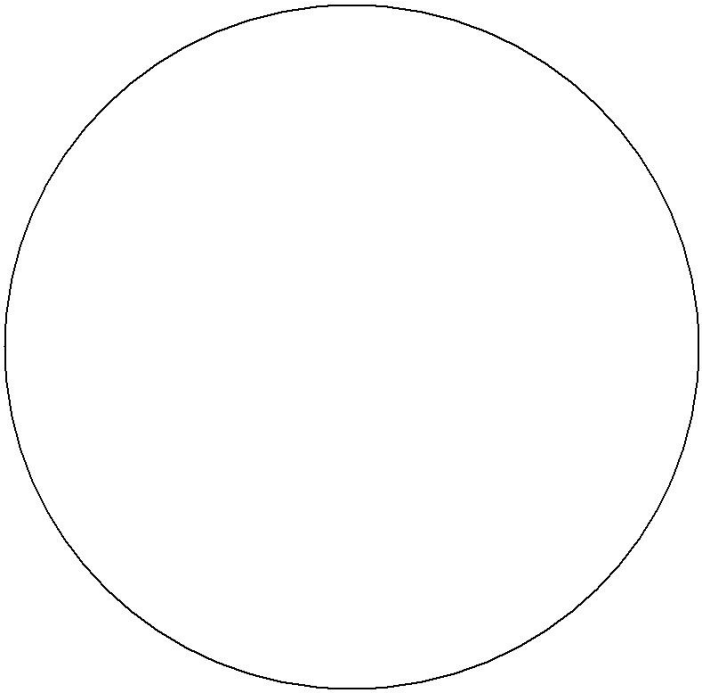
Rolled out/everted borders (rodent ulcer).

Microscopy:

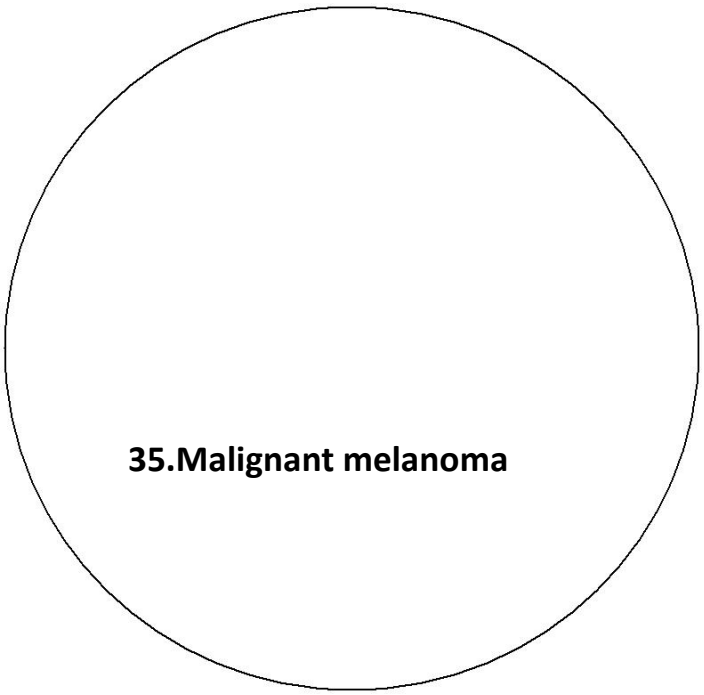
Nests & islands of basaloid cells surrounded by fibromyxoid stroma,separated by cleft like spaces (retraction artefact).

Nests show peripheral palisading.

31.MALIGNANT MELANOMA



32.OSTEOCLASTOMA



35.Malignant melanoma

31.MALIGNANT MELANOMA

Clinical presentation:

A-Asymmetrical enlargement

B-Irregular borders

C-Change in color

D-Development of new pigmented lesion

E-Enlargement of existing mole

Microscopy:

Malignant cells are round,oval to spindle shaped with vesicular nuclei & prominent nucleoli.

Intra & extracellular melanin pigment will be seen.

32.OSTEOCLASTOMA

Gross:

Epiphyseal lesion, expansion & thinning of cortex.

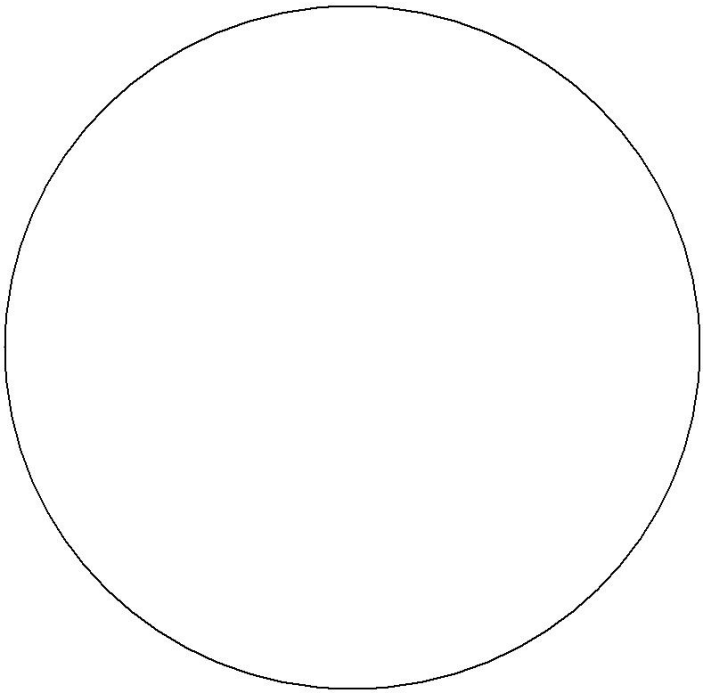
C/S: Predominantly hemorrhagic,sometimes soft to fleshy.

Microscopy:

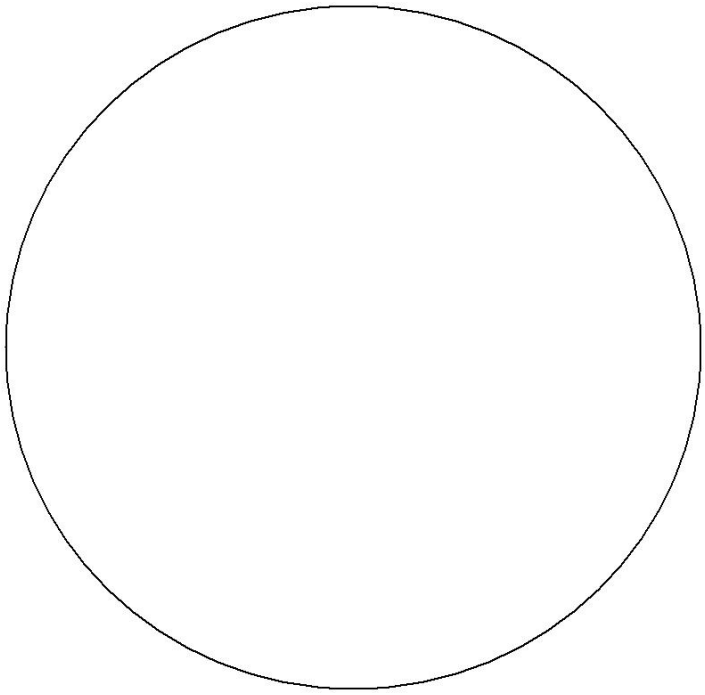
Sheets of osteoclast type multinucleate giant cells in a background of mononuclear cells.

Both multinucleate giant cell & stromal mononuclear cells have round to oval nuclei with smooth chromatin & small nucleoli.

33.OSTEOSARCOMA



34.CHONDROMA



33.OSTEOSARCOMA

Gross:

Metaphyseal mass that breaches the cortex & invades into soft tissue.

C/S: Variegated appearance-hemorrhagic,necrotic areas.

Lifting of periosteum will be present.

Microscopy:

Malignant osteoblasts are pleomorphic,spindled cells.

Lace-like malignant osteoid rimmed by malignant osteoblasts.

34.CHONDROMA

Gross:

Circumscribed, small.

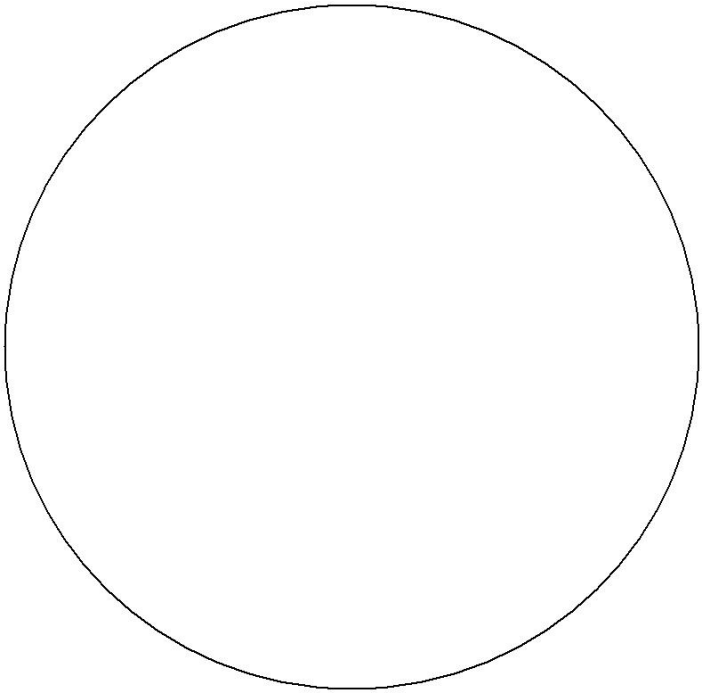
C/S: Blue grey, translucent, glistening cartilage with focal areas of calcification.

Microscopy:

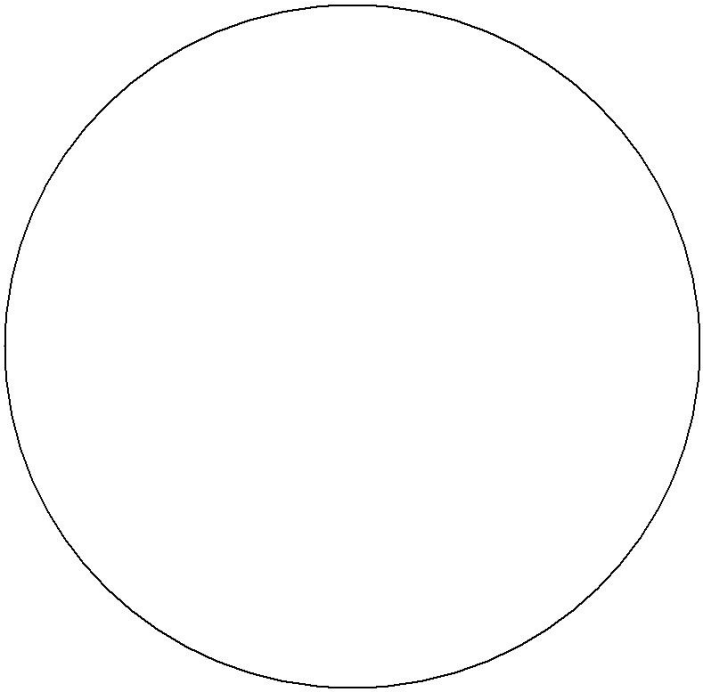
Lobules of chondrocytes embedded in chondromyxoid matrix.

Chondrocytes do not show atypia or mitoses.

35.HODGKIN LYMPHOMA



36.SQUAMOUS CELL CARCINOMA-SECONDARIES IN LYMPHNODE



35.HODGKIN LYMPHOMA

Gross:

Node-Discrete,rubbery.

C/S: Grey tan,homogenous.

Microscopy:

Effacement of architecture & is diffusely infiltrated by lymphocytes, eosinophils, plasma cells,histiocytes& Reed Sternberg cells of mononuclear,binuclear& multinuclear type.

Classical RS cell-Large, contains bilobed nuclei presenting an mirror image appearance. Nuclei show prominent eosinophilic nucleoli,perinuclear halo & thick nuclear membrane presenting an owl eye appearance.

36.SQUAMOUS CELL CARCINOMA-SECONDARIES IN LYMPHNODE

Gross:

Node-Discrete/matted.

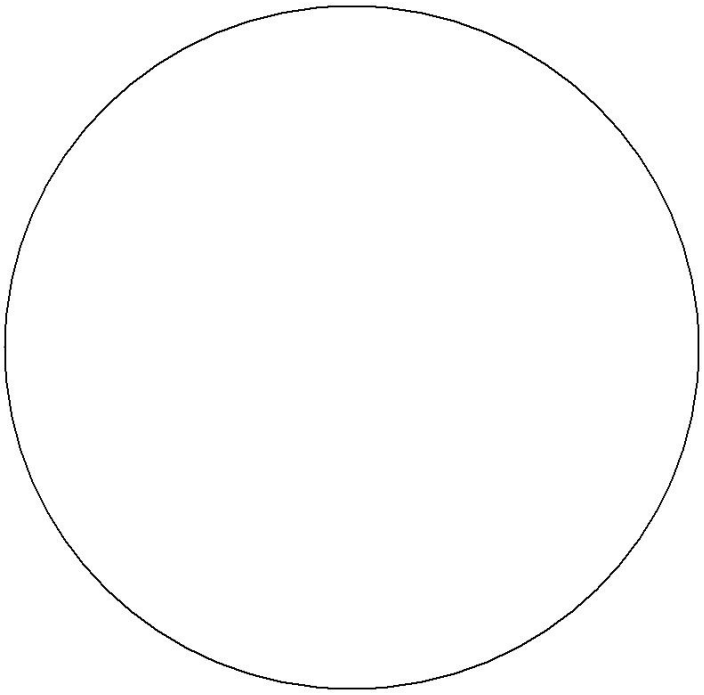
C/S: Grey tan, firm.

Microscopy:

Partial or complete effacement of architecture.

Malignant cells are polyhedral with hyperchromatic nuclei with or without necrosis & keratin pearl formation.

37.CASEATING TUBERCULOUS LYMPHADENITIS



37.CASEATINGTUBERCULOUS LYMPHADENITIS

Gross:

E/S:Discrete or matted nodes.

C/S: Confluent areas of yellow grey chalky caseous necrosis (Caseous-cheese like is derived from the friable white appearance of the area of necrosis).

Microscopy:

Preserved lymphnode architecture with collection of epithelioid granulomata composed of central caseous necrosis surrounded by epithelioid cells,Langhans type of giant cells & a peripheral rim of lymphocytes & fibroblasts.

---------X----------

➢ **NOTE**

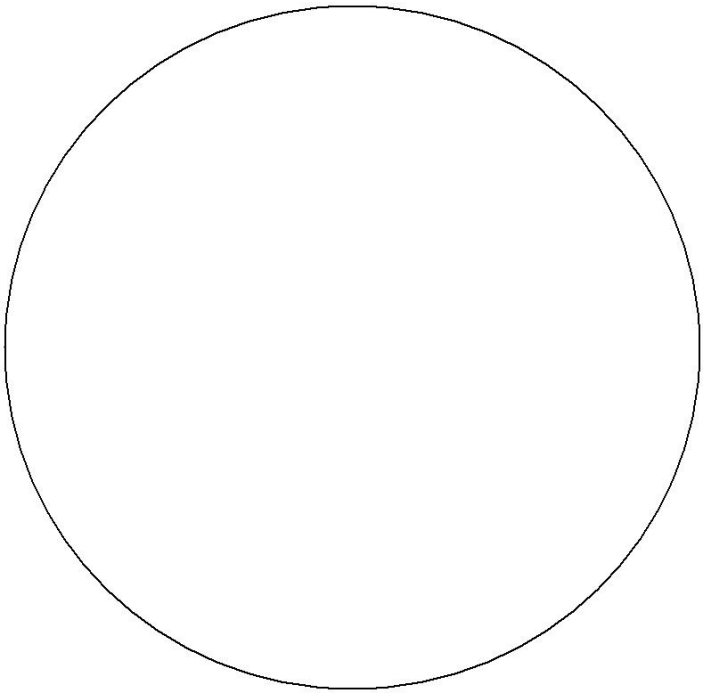
Surgical pathology : After excision,the specimen is processed & changes in tissue architecture& stroma is noted.

FNAC: Tissue fragment is aspirated from the swelling, smeared on a glass slide& changes in individual cell is noted.

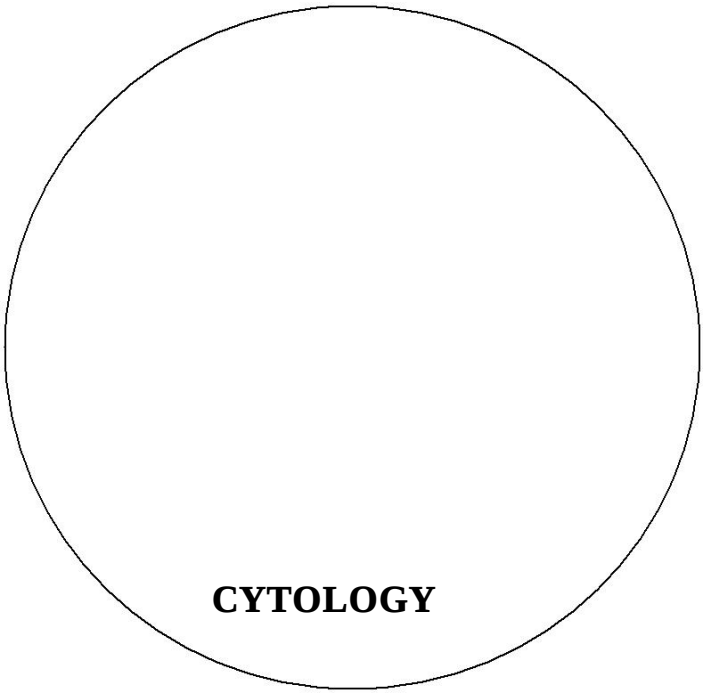
Fluid cytology : The serous body fluid is aspirated, processed & smeared on a glass side & used to detect the presence of atypical cells.

CYTOLOGY

1.FIBROADENOMA



2.DUCTALCARCINOMA BREAST



CYTOLOGY

CYTOLOGY

1.FIBROADENOMA

Microscopy:

Cellular smears showing cohesive clusters of benign duct epithelial cells forming stag horn pattern.

Myoepithelial cells & stripped (bare) nuclei are seen in the background.

2.DUCTAL CARCINOMA BREAST

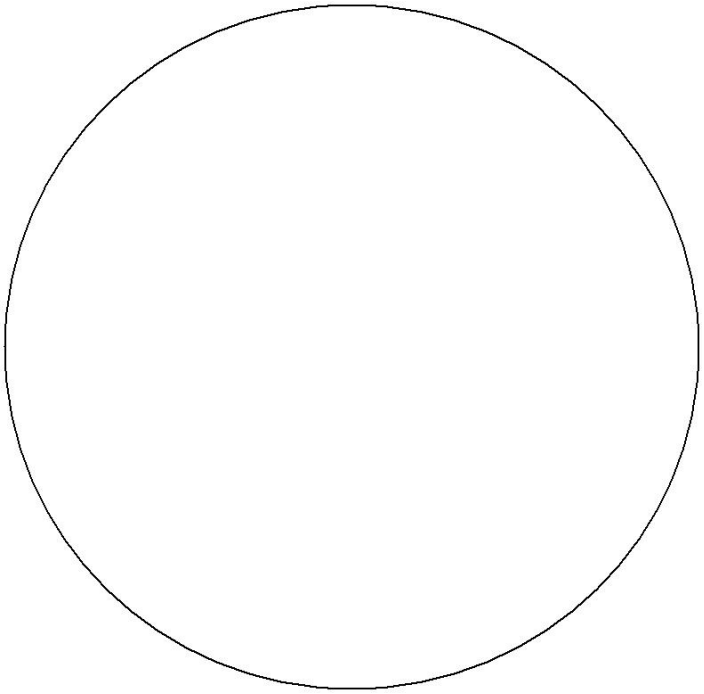
Microscopy:

Cellular smears show dyscohesive clusters & singly scattered malignant ductal epithelial cells.

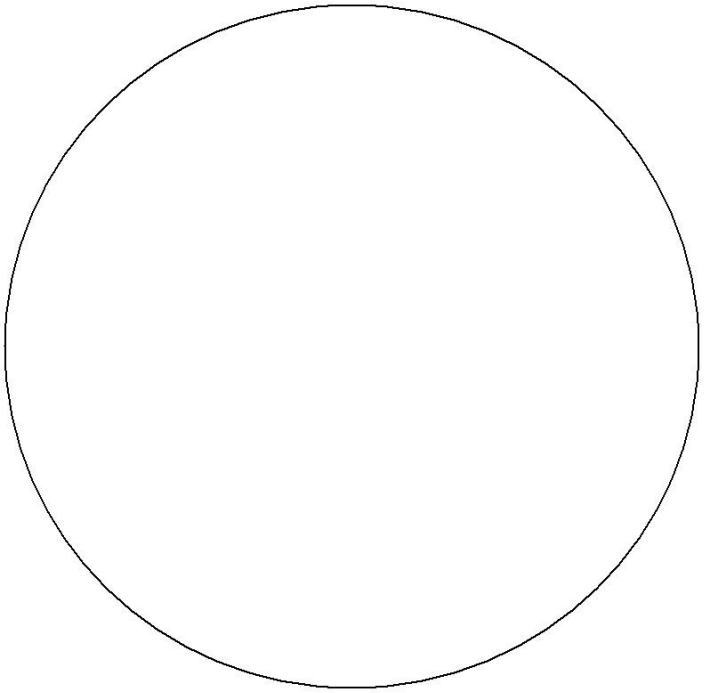
Malignant cells exhibit pleomorphic hyperchromatic nuclei.

Bare nuclei are absent.

3.TUBERCULOSIS-LYMPH NODE



4.LYMPH NODE - METASTATIC DEPOSIT OF SQUAMOUS CELL CARCINOMA



3.TUBERCULOSIS-LYMPH NODE

Microscopy:

Smear shows epithelioid granulomata, Langhans type of giant cells, lymphocytes & histiocytes in a necrotic background.

Caseous necrosis-seen as pink amorphous foci.

Epithelioid cells have sole/ slipper shaped nuclei with moderate cytoplasm & indistinct cell membrane.

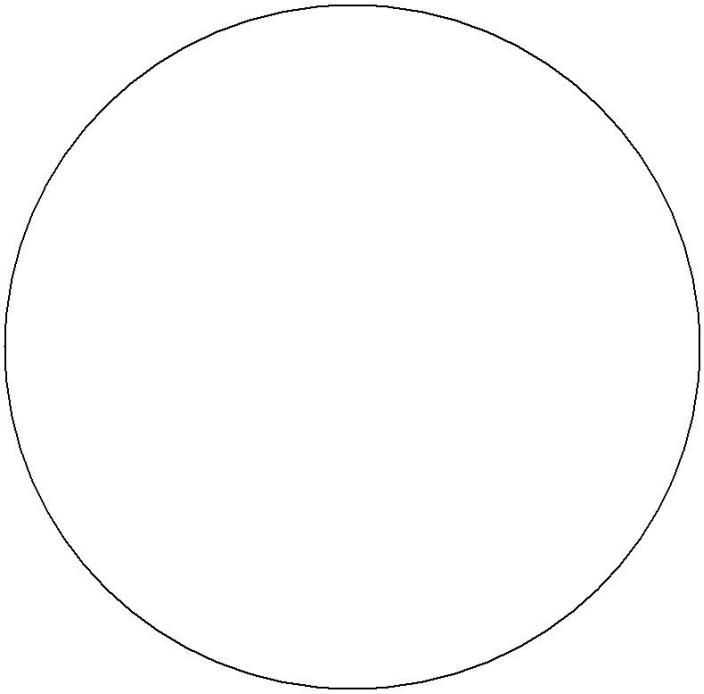
4.LYMPH NODE METASTATIC DEPOSIT OF SQUAMOUS CELL CARCINOMA

Microscopy:

Moderately cellular smear showing malignant squamous epithelial cells arranged in groups & singly scattered in a necrotic keratinous background.

FLUID CYTOLOGY

1.ASCITIC FLUID-POSITIVE FOR MALIGNANCY



FLUID CYTOLOGY

1.ASCITIC FLUID-POSITIVE FOR MALIGNANCY

Microscopy:

Cellular smears show three dimensional clusters of neoplastic cells arranged in solid &acinar pattern.

The neoplastic malignant epithelial cells are round to oval with hyperchromatic& pleomorphic nuclei.Signet ring cells with eccentric nuclei & vacuolated cytoplasm may be seen.

---------X----------

PAP SMEAR

It is an exfoliative vaginal cytology & exfoliation of cells occur due to the process of continuous renewal of the body tissues.The desquamated shed cells collect in natural cavities & recesses & at the orifices of cavities that communicate with the exterior by vagina, urethra, anus, oral cavity, sputum, nose.

Fixative:

95% ethanol

80% isopropyl alcohol

Aerosol spray/cytofix/carbo wax-poly ethylene glycol spray fixative

Stains used:

Papaniculoau stain

Hematoxylin& eosin

Shorr's stain

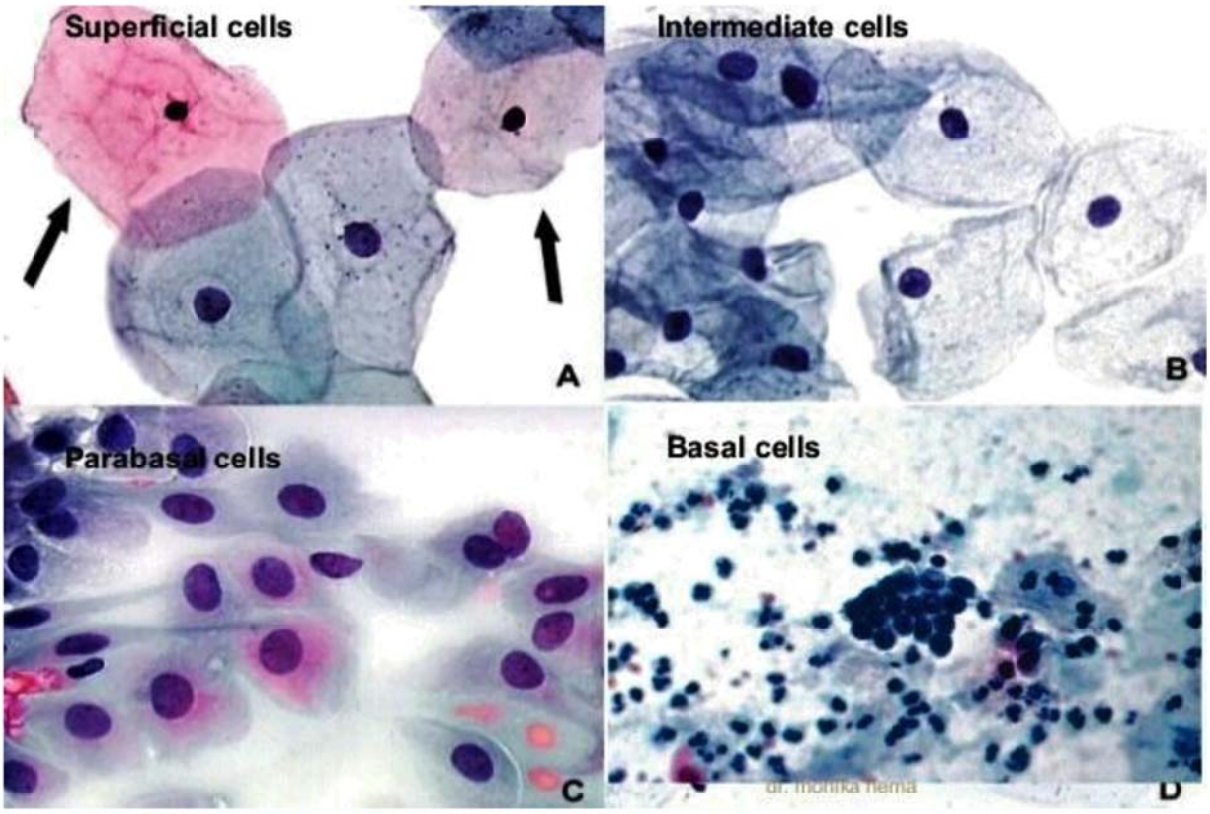
Wright Giemsa stain

Normal cytology of the female genital tract:

EPITHELIAL CELLS: Superficial cells, intermediate cells, parabasal cells & basal cells.

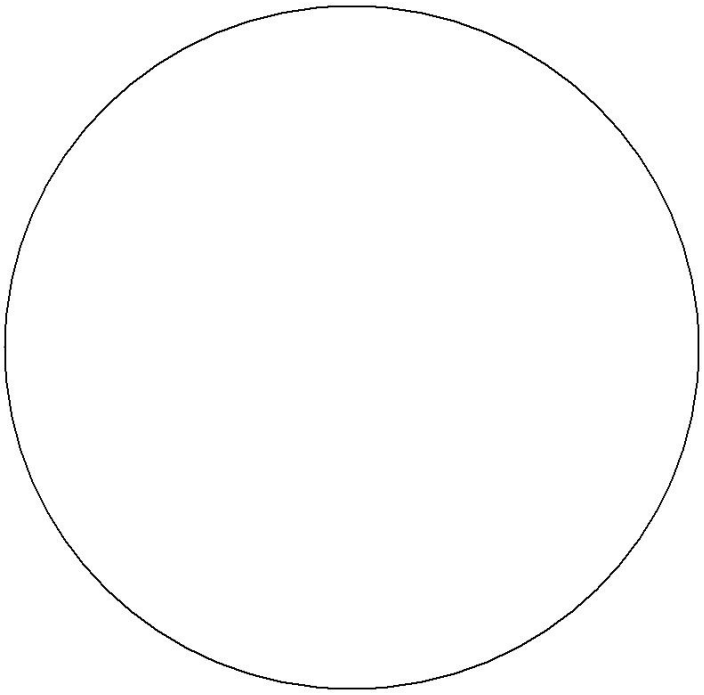
NON EPITHELIAL CELLS: RBC, leucocytes, plasma cells, histiocytes, lymphocytes & spermatozoa.

Morphology of the cells

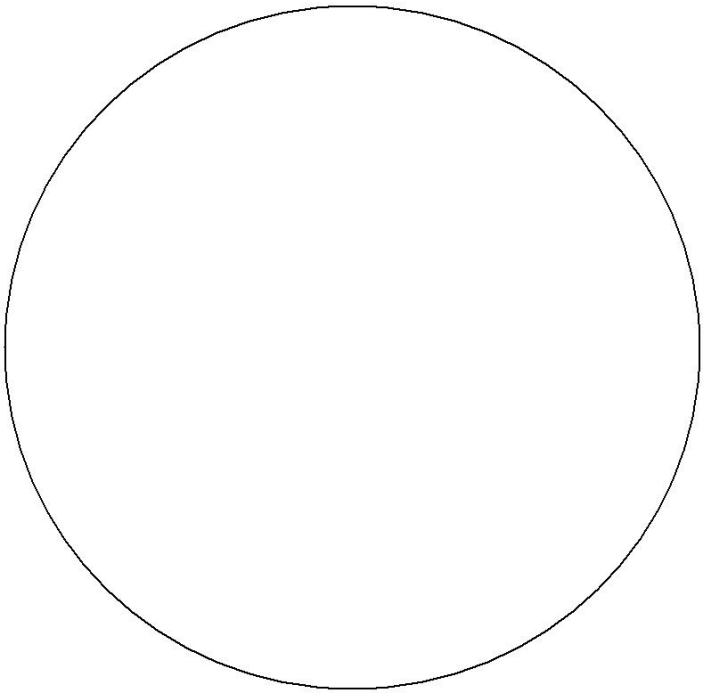


Type of cell	Features	Hormonal influence
Superficial cell	Mature squamous cells,polygonal cells with pyknotic nuclei	Estrogen
Intermediate cell	Larger nucleus with finely granular texture, folded/wafer like cytoplasm.	Progesterone
Parabasal cell	Round to oval cells with nucleus larger than intermediate cells	Not influenced by hormones. Seen in atrophic smear
Basal cell	Small cells with scant cytoplasm	Not influenced by hormones. Seen in atrophic smear

1.LOW GRADE SQUAMOUS INTRAEPITHELIAL LESION-LSIL



2.HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION-HSIL



1.LOW GRADE SQUAMOUS INTRAEPITHELIAL LESION-LSIL

Microscopy:

Intermediate size cells

Nuclear atypia-enlargement, irregular contour, hyperchromasia, chromatin coarseness

Koilocytic change-perinuclear cytoplasmic cavities surrounded by a dense rim of cytoplasm

2.HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION-HSIL

Microscopy:

Parabasal sized cells

Discrete cells or syncytium like groups (hyperchromatic crowded groups)

Nuclear atypia-enlargement, marked irregularity in contour, hyperchromasia, marked chromatin coarseness

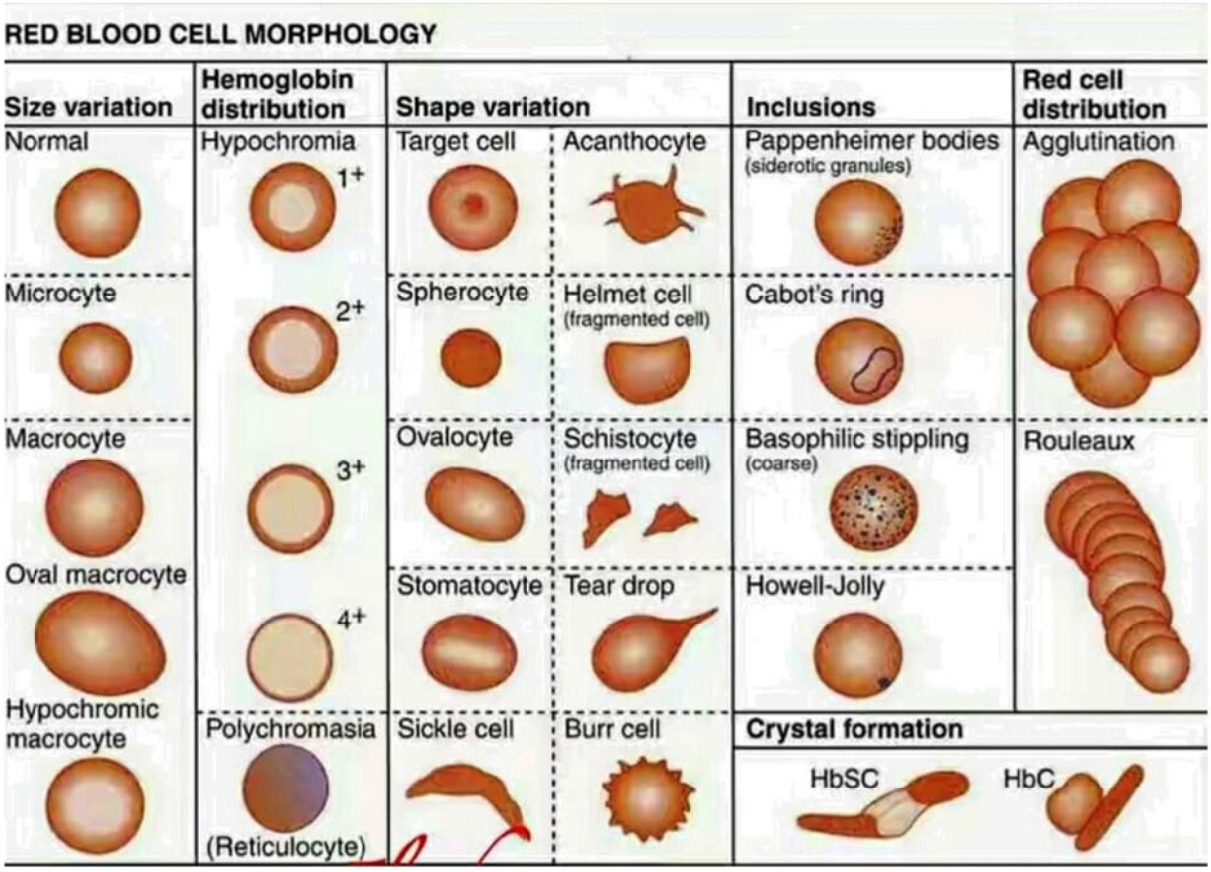
INTERPRETATION OF PERIPHERAL SMEAR

RBC: Size, shape, chromasia, inclusions, immature cells, excess rouleux formation/agglutination, hemoparasites

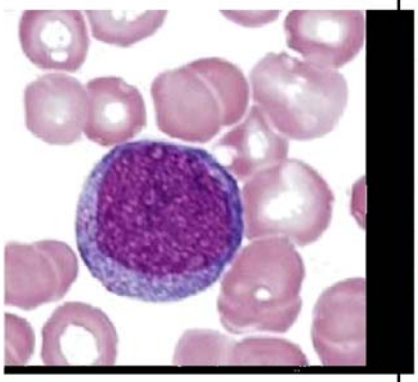
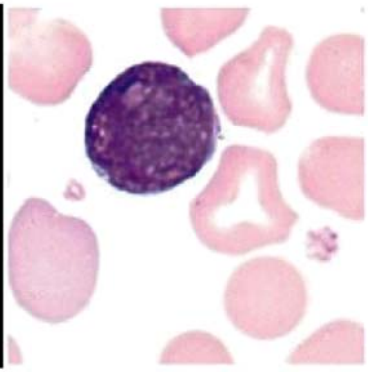
WBC:Count, morphology-nucleus,granules, cytoplasmic inclusions, immature cells

Platelets:Count, size, morphology

RBC disorder

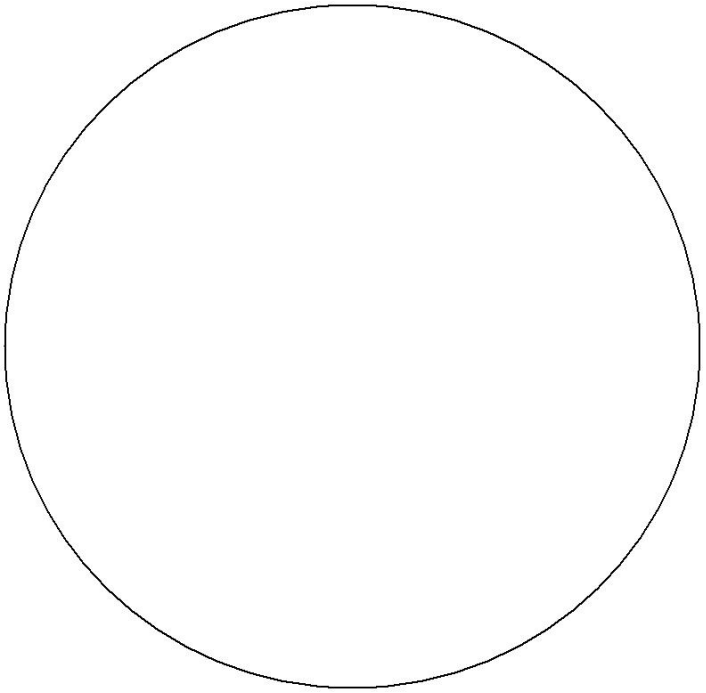


WBC-Features of immature blast

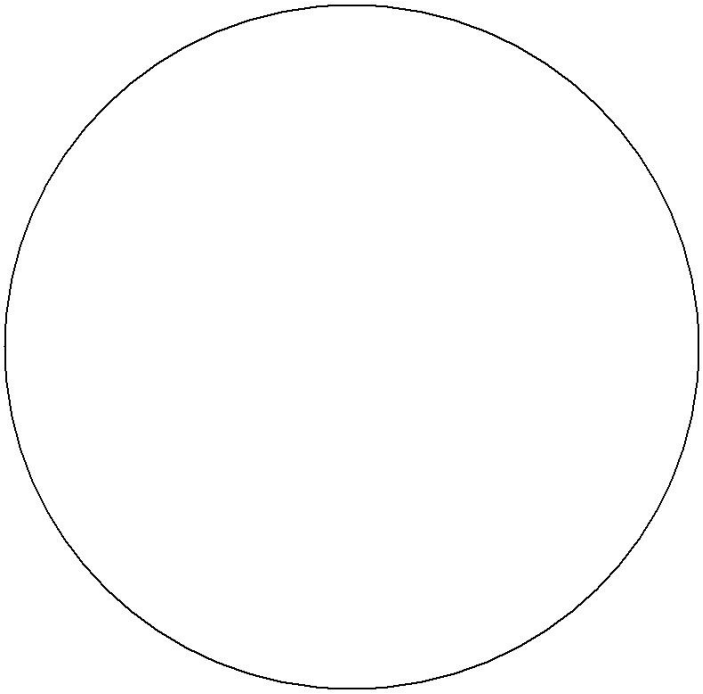
CHARACTERISTICS	MYELOBLAST	LYMPHOBLAST
		
Size	15-20 microns	10-20 microns
Nucleus	Round to oval	Round to oval
Nucleoli	2-5	1-2
Chromatin	Fine	Fine,evenly stained
Cytoplasm	Moderate basophilia	Scant, slightly to moderately basophilic
Granules	Absent or upto 20	None
N/c ratio	4:1	7:1 to 4:1

I.RBC DISODER

1.MICROCYTIC ANEMIA



2.MACROCYTIC ANEMIA



I.RBC DISODER

1.MICROCYTIC ANEMIA

COMMENT ON PS:

RBC:

WBC:

Platelets:

Causes:

Iron deficiency anemia, sideroblastic anemia,thalasemmia,anemia of chronic disease.

2.MACROCYTIC ANEMIA

COMMENT ON PS:

RBC:

WBC:

Platelets:

Types of macrocytes:

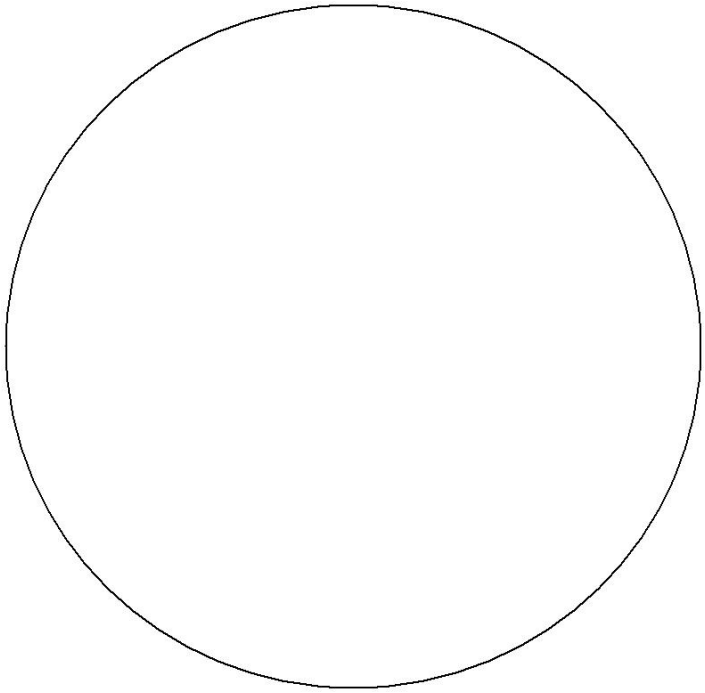
Round macrocytes: Liver disorder, alcoholism, hypothyroidism

Macro ovalocytes: Vitamin B12 deficiency, folate deficiency

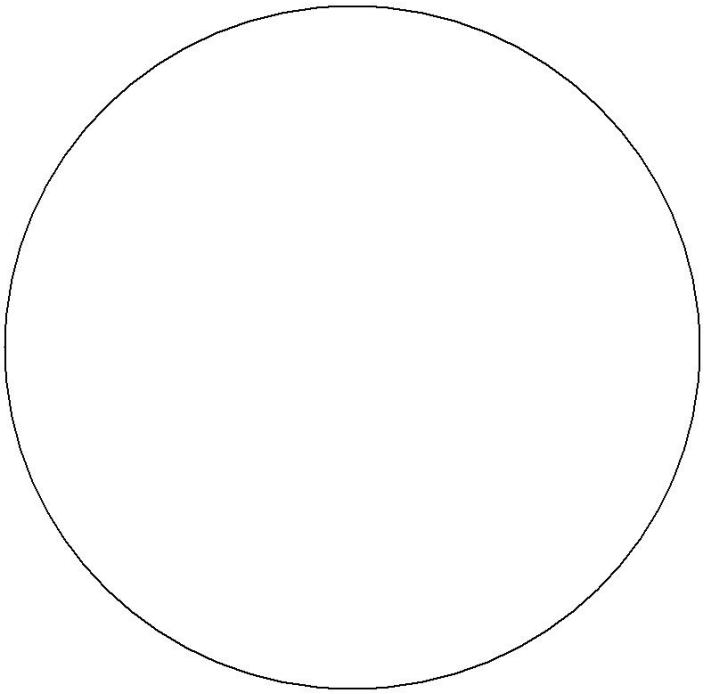
II.WBC DISODER

NON NEOPLASTIC

1.NEUTROPHILIA



2.EOSINOPHILIA



II.WBC DISODER:

NON NEOPLASTIC:

1.NEUTROPHILIA

COMMENT ON PS:

RBC:

WBC:

N- L- E- M- B-

Platelets:

Causes:

Newborn,pregnancy,stress,exercise,bacterial infections,vasculitis,myositis, acute hemorrhage,acute hemolysis.

2.EOSINOPHILIA

COMMENT ON PS:

RBC:

WBC:

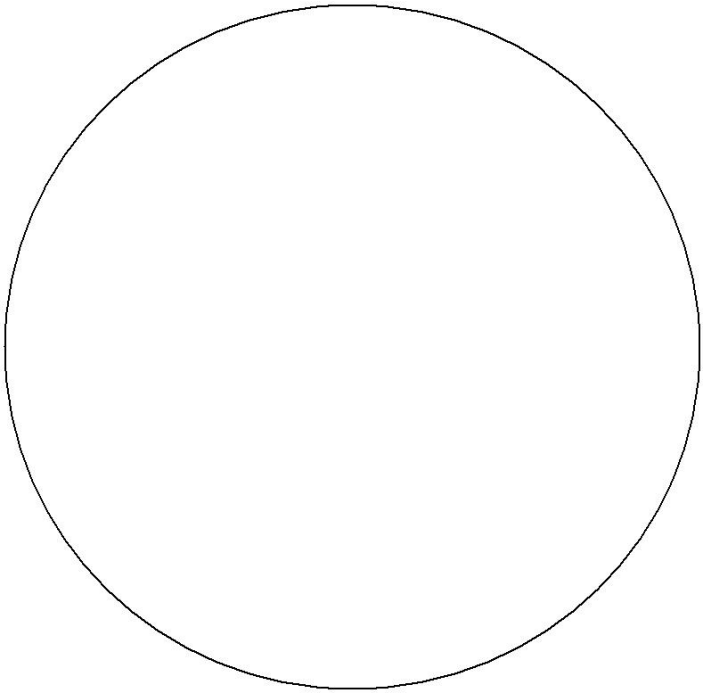
N- L- E- M- B-

Platelets:

Causes:

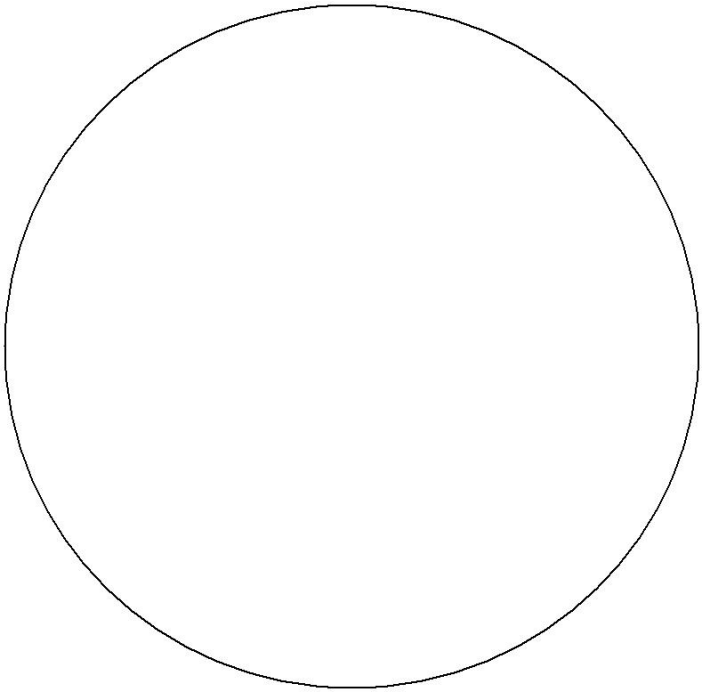
Asthma,urticaria,filariasis,fungal infections,Loeffler's syndrome

3.LYMPHOCYTOSIS



NEOPLASTIC:

1.ACUTE MYELOID LEUKEMIA



3.LYMPHOCYTOSIS

COMMENT ON PS:

RBC:

WBC:

N- L- E- M- B-

Platelets:

Causes:

Infectious mononucleosis, cytomegalovirus, hepatitis,mumps,acute cardiovascular collapse,trauma,major surgery

NEOPLASTIC

1.ACUTE MYELOID LEUKEMIA

COMMENT ON PS:

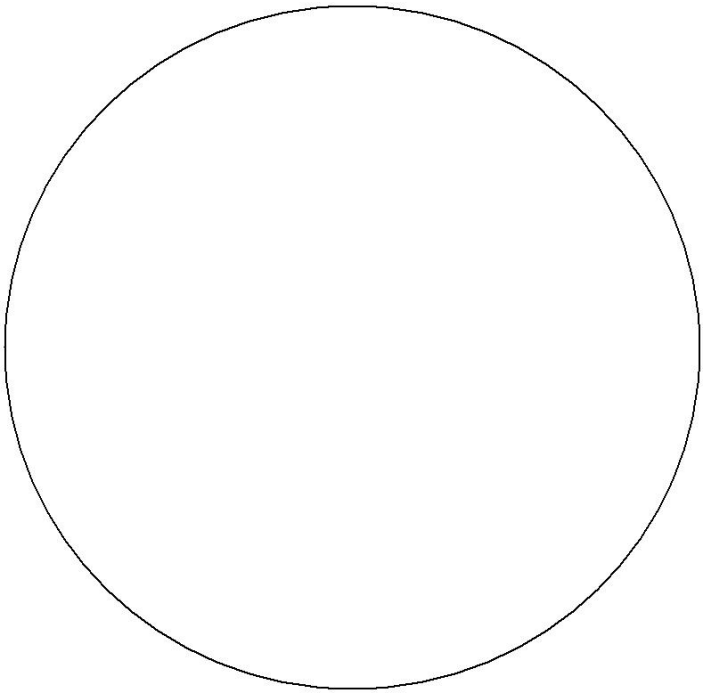
RBC:

WBC:

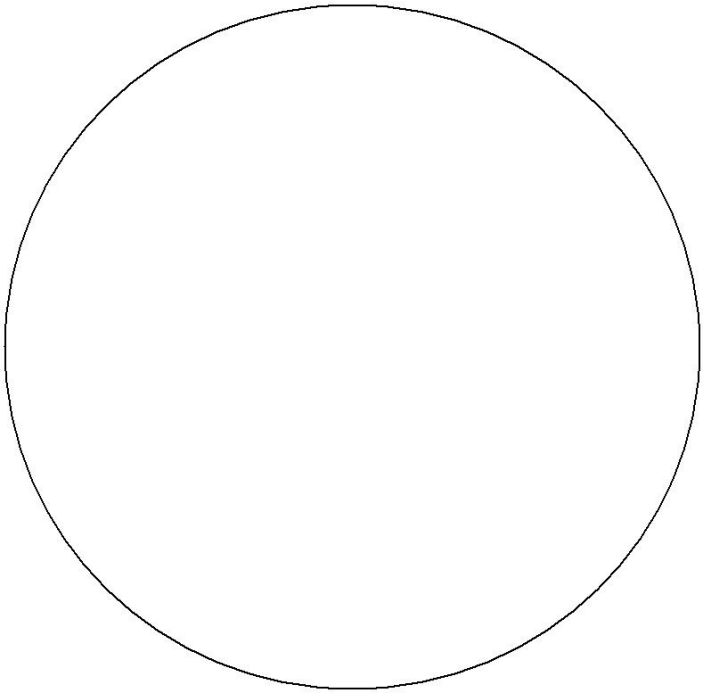
Type & morphology of the immature cells seen:

Platelets:

2.CHRONIC MYELOID LEUKEMIA



3.ACUTE LYMPHOBLASTIC LEUKEMIA



2.CHRONIC MYELOID LEUKEMIA

COMMENT ON PS:

RBC:

WBC:

Type & morphology of the immature cells seen:

Platelets:

3.ACUTE LYMPHOBLASTIC LEUKEMIA

COMMENT ON PS:

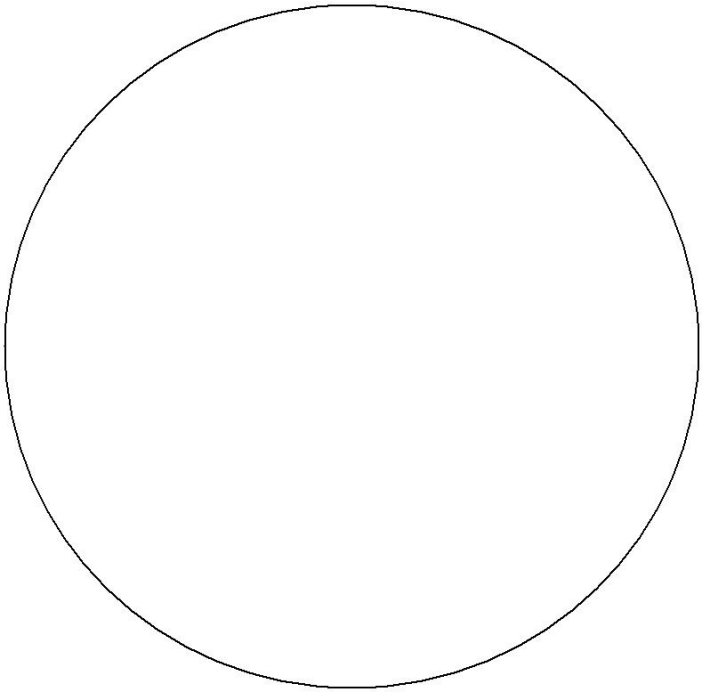
RBC:

WBC:

Type & morphology of the immature cells seen:

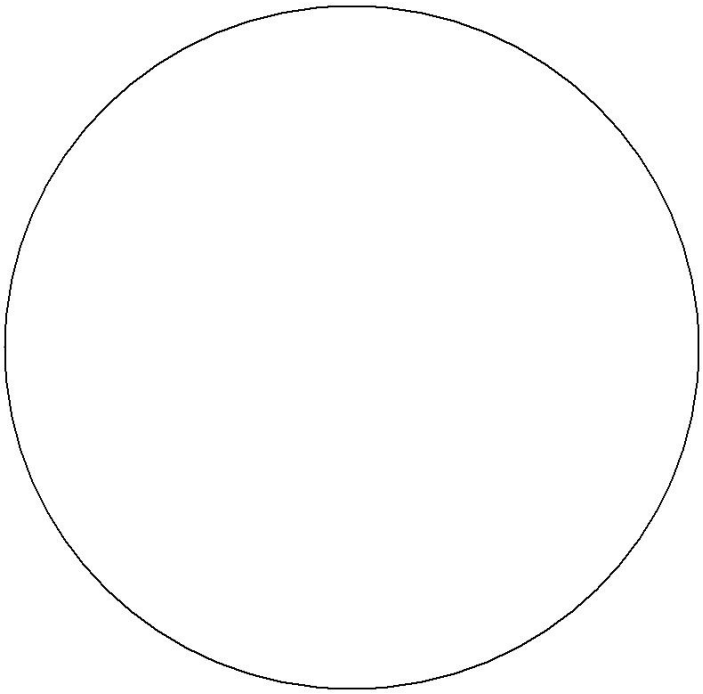
Platelets:

4.CHRONIC LYMPHOCYTIC LEUKEMIA



HEMOPARASITE

1.MALARIAL PARASITE PLASMODIUM VIVAX



4.CHRONIC LYMPHOCYTIC LEUKEMIA

COMMENT ON PS:

RBC:

WBC:

Type & morphology of the cells seen:

Platelets:

HEMOPARASITE

1.MALARIAL PARASITE PLASMODIUM VIVAX

COMMENT ON PS:

RBC:

WBC:

Platelets:

PREPARING A PERIPHERAL SMEAR & REPORTING

HEMOGLOBIN ESTIMATION

BLOOD GROUPING & TYPING

URINE EXAMINATION

CASES

SURGICAL PATHOLOGY

- Case 1

Name of Patient: Age : Sex :

Ward : IP No. :

Clinical Diagnosis :

Clinical Finding :

Date of Surgery :

Type of Surgery :

Specimen received at Pathology Department on _____ in 10% neutral buffered formalin (if not, mention the solution in which specimen received)

Pathology No. :

Days of processing :

Date of reporting :

Macroscopic Description:

Microscopic Description:

Ancillary studies done (IHC, Special stain,IF):

Diagnosis :

- Case 2

Name of Patient: Age : Sex :

Ward : IP No. :

Clinical Diagnosis :

Clinical Finding :

Date of Surgery :

Type of Surgery :

Specimen received at Pathology Department on _____ in 10% neutral buffered formalin (if not, mention the solution in which specimen received)

Pathology No. :

Days of processing :

Date of reporting :

Macroscopic Description:

Microscopic Description:

Ancillary studies done (IHC, Special stain,IF):

Diagnosis :

- Case 3

Name of Patient: Age : Sex :

Ward : IP No. :

Clinical Diagnosis :

Clinical Finding :

Date of Surgery :

Type of Surgery :

Specimen received at Pathology Department on _____ in 10% neutral buffered formalin (if not, mention the solution in which specimen received)

Pathology No. :

Days of processing :

Date of reporting :

Macroscopic Description:

Microscopic Description:

Ancillary studies done (IHC, Special stain,IF):

Diagnosis :

- Case4

Name of Patient: Age : Sex :

Ward : IP No. :

Clinical Diagnosis :

Clinical Finding :

Date of Surgery :

Type of Surgery :

Specimen received at Pathology Department on _____ in 10% neutral buffered formalin (if not, mention the solution in which specimen received)

Pathology No. :

Days of processing :

Date of reporting :

Macroscopic Description:

Microscopic Description:

Ancillary studies done (IHC, Special stain,IF):

Diagnosis :

- Case 5

Name of Patient: Age : Sex :

Ward : IP No. :

Clinical Diagnosis :

Clinical Finding :

Date of Surgery :

Type of Surgery :

Specimen received at Pathology Department on _____in 10% neutral buffered formalin (if not, mention the solution in which specimen received)

Pathology No. :

Days of processing :

Date of reporting :

Macroscopic Description:

Microscopic Description:

Ancillary studies done (IHC, Special stain,IF):

Diagnosis :

1) FNAC NO / DATE OF FNAC : / 2017

Name of Patient :

Age : Sex :

IP / OP :

Site of FNAC requested :

Clinical Examination:

Site :

Size :

Dimensions :

Plane :

Mobility :

Tenderness :

Skin :

Amount of Aspirate :

Nature of aspirate :

Number of slides made:

Microscopic Description:

Diagnosis :

2) FNAC NO / DATE OF FNAC :

/ 2017

Name of Patient : Age : Sex :

IP / OP :

Site of FNAC requested :

Clinical Examination:

Site :

Size :

Dimensions :

Plane :

Mobility :

Tenderness :

Skin :

Amount of Aspirate :

Nature of aspirate :

Number of slides made:

Microscopic Description:

Diagnosis :

3) FNAC NO / DATE OF FNAC :

/ 2017

Name of Patient : Age : Sex :

IP / OP :

Site of FNAC requested :

Clinical Examination:

Site :

Size :

Dimensions :

Plane :

Mobility :

Tenderness :

Skin :

Amount of Aspirate :

Nature of aspirate :

Number of slides made:

Microscopic Description:

Diagnosis :

4) FNAC NO / DATE OF FNAC : / 2017

Name of Patient : Age : Sex :

IP / OP :

Site of FNAC requested :

Clinical Examination:

Site :

Size :

Dimensions :

Plane :

Mobility :

Tenderness :

Skin :

Amount of Aspirate :

Nature of aspirate :

Number of slides made:

Microscopic Description:

Diagnosis :

5) FNAC NO / DATE OF FNAC : / 2017

Name of Patient : Age : Sex :

IP / OP :

Site of FNAC requested :

Clinical Examination:

Site :

Size :

Dimensions :

Plane :

Mobility :

Tenderness :

Skin :

Amount of Aspirate :

Nature of aspirate :

Number of slides made:

Microscopic Description:

Diagnosis :

HOME WORK

1)Writing a request for surgical pathology specimen

2)Writing a request for clinical pathology

3)Writing a request for FNAC

"Complete reporting of pathological information is a shared responsibility of the Physician / Surgeon & Pathologist"

COURTESY:

THE TAMIL NADU DR.MGR MEDICAL UNIVERSITY,
CHENNAI 600 032.