Specimen 1

Thyroid Gland

- **Total thyroidectomy with or without lymph nodes/CT scan Skull or chest**
- **Hemithyroidectomy**
- **Photograph**
- **Scenario of thyroid pathology**

STATION: 00

40 yrs old female came to you with a CT scan of the chest showing consolidation of the mid zone of the lung. This is the resected specimen of this patient.

i) What surgery has been done here?
ii) What are the pathological findings?
iii) What is your diagnosis?
iv) What treatment will you give?
iv) How will you confirm your diagnosis?

Check list

Answer:

i. Total thyroidectomy
ii. Hugely enlarged both lobes of the thyroid
Multiple nodules of varying size

Area of haemorrhage & necrosis

iii. Follicular carcinoma in a multinodular goitre

iv. FNAC from the suspicious nodule & from the lung shadow.
Radio-iodine ablation followed by life long suppressive does of thyroxine.
External beam radiotherapy if bony metastasis

Follow up.

STATION: 00

You have done a total thyroidectomy operation today.
Answer the following questions.

Q. 1. How did you preserve the parathyroid glands?

Q. 2. What important steps did you take to prevent injury to the recurrent laryngeal nerve?

Q. 3. Your excised gland on the table shows to have all the parathyroid glands. How do you tackle the problem?

Check list

1.	(a)	Seeing the colour and blood supply	2 x 2= 4
	(b)	By following the entry and course of inferior thyroid artery.	
2.	(a)	Ligating the inferior thyroid artery away from the gland	1 X 2=2
	(b)	By not using the diathermy.	
3.	(a)	Reimplantation in sternomastoid muscle	2 X 2=4
	(b)	Cryopreservation of slices of gland.	

STATION: 00

Study the specimen carefully and answer the questions

1. What are the macroscopic findings presents in this specimen?

2. What was the surgery done in this case?
3. Name four immediate major complications of this type of surgery.
4. What is rationale for doing such a surgery?

Fig : Thyroid specimen

Thyroid

1. What is the specimen?
   - Resected specimen of thyroid.

2. What are the morphological findings?
   i. Enlarged thyroid
   ii. The growth is nodular
   iii. Resected area found
   iv. Both lobes of thyroid connected together
   v. Loose tissue, probably capsule on surface.

3. What operation done?
   - Near total thyroidectomy as there is resected area.

4. Thyroid tissue left for normal thyroid function.
   - Posterior part
   - Apparently healthy part

5. Why total better?
    i. No chance of recurrence.
    ii. No chance of thyrotoxicosis.
    iii. No chance of thyroid malignancy.
    iv. Replacement not so difficult.

6. What may be the functional complications of this surgery?
    i. Hypothyroidism
    ii. Hypoparathyroidism leading to tetany
    iii. Change of voice- hoarseness

7. What vessels are ligated?
    i. Ligated near gland-superior thyroid
    ii. Ligated away from gland-inferior thyroid / individual branch ligate near to the gland

8. What are the preoperative investigation
    i. Thyroid function assay/Hormone assay
    ii. USG
    iii. FNAC
    iv. Antithyroid antibody
    v. Indirect laryngoscopy — medicolegal protection
    vi. X-ray neck
    vii. Serum calcium

9. What other preparation?
    - Informed consent about voice change.

MNG (Multinodular goiter)

1. Identify the specimen
    - Respected specimen of thyroid

2. What is the suspected pathology?

- Multinodular goitre.

3. What operation done?
   - Subtotal thyroidectomy

4. Preparation for thyrotoxicosis
   i. Carbimazole 30-40 mg per day in 3/4 divided doses
   ii. Propranolol 40 mg tds
   Lugol's iodine 0.3 ml 8 hourly
   In emergency iv esmolol

5. Management of thyroid storm general measures:
   - IV Fluid
   - Cooling with in packs
   - O_2 inhalation
   - Diuretics for cardiac failure
   - Digoxin for uncontrolled atrial fibrillation
   - Sedation
   - IV hydrocortisone
   - Specific treatment:
   - Carbimazole 10-20 mg 6 hourly orally or rectally
   - Lugol's iodine 10 drops 8 hourly by month or sodium iodide 1g ive Propranolol 40 mg 6 only orally or 1-2 mg 1 under ECG control

6. What are the eye changes of primary thyrotoxicosis?
   i. Lid lag
   ii. Lid retraction
   iii. Exophthalmos
   iv. Ophthalmoplegia
   v. Conjunctival chemosis
   vi. Conjunctival injection .

Fig: Grave's disease

Grave's disease

1. What is the specimen?
   - Resected specimen of thyroid.

2. What are the macroscopic findings?
   - Diffuse enlargement of both lobes of thyroid gland with isthmus.

3. What surgery done?
   - Subtotal thyroidectomy

4. Name 4 in major complications of this surgery?
   - Reactionary haemorrhage & tension haematoma leading to airway obstruction.
   - RLN injury
   - Inadvertent removal of parathyroids and acute hypoparathyroidism.
   - Thyroid crisis if toxic goitre.

5. What is the rationale for doing this surgery?
    i. Cosmetic
    ii. Pressure symptoms
    iii. Fear of malignancy

6. What other operations done on thyroid?
    i. Hemithyroidectomy (Lobectomy + isthmusectomy minimum surgery for thyroid)
    ii. Subtotal thyroidectomy
    iii. Near total thyroidectomy
    iv. Total thyroidectomy

7. When hemithyroidectomy done?
    - Single nodule involving one lobe
    - Solitary thyroid nodule
    - Follicular, papillary carcinoma thyroid < 1 cm size
    - Multinodular goitre involve one lobe

8. Is enucleation of thyroid nodule possible?
    - Excision of nodule is contraindicated.

9. What are the tumors of thyroid?

Benign:

i. Cyst
ii. Adenoma
iii. Lipoma
iv. Haemongioma
v. Teratoma

Malignant:

Primary:

Papillary carcinoma – 60%
Follicular carcinoma – 20%
Anaplastic carcinoma – 10%
Medullary carcinoma – 5%
Malignant lymphoma – 5%

Secondary: From kidney, breast, lung, bone

10. Which one of good prognosis:
    - Papillary carcinoma — it remains localised as spread through lymphatic.

Photograph of a female having very enlarged thyroid gland

1. What is your clinical diagnosis?
    - A case of **simple/toxic goitre**

2. Name the relevant investigations with reasons to confirm your diagnosis.
    i. Thyroid profile — To assess the thyroid status
    ii. USG of thyroid — to assess the nature of morphological change.
        - Isotope scanning – To assess the functional stature of the nodules and to identify hyperactive nodule/nodules if thyroid profile reveals hyperthyroidism.
        - FNAC of suspicious nodule – To exclude/confirm focus to malignancy.

3. What complications can supervene in a long standing case like this?
    i. Secondary thyrotoxicosis
    ii. Malignant transformation

4. What surgical procedure you will recommend for this? Subtotal/total thyroidectomy.

5. Name the important complications of surgical therapy in this case.
    i. Reactionary haemorrhage & tension haematoma leading to airway obstruction
    ii. RLN injury
    iii. Accidental removal of parathyroids — acute hypoparathyroidism
    iv. Thyroid crisis – if the patient is of toxic goitre.

6. Minimum investigation of solitary thyroid nodule?

- FNAC if clinically euthyroid.

7. What investigation can detect follicular carcinoma?
   - Paraffin section H/P.
   - FNAC can't say
   - Even frozen section can't say.
   - HTERT-Human telomearse enzyme reverse transcriptase.

Multinodular goitre

1. What is your diagnosis?
   - Multinodular goiter

2. What is the treatment of euthyroid condition if this disease?
   - Total thyroidectomy e replacement therapy.

3. What investigation you will do to exclude malignancy?
   - FNAC

4. Can total thyroidectomy reduce the complaint hoarseness of voice?
   - Yes, as it reduce the pressure.

5. If all 4 parathyroids are removed accidentally what you will do?
   - I will autotransplant 50mg parathyroid tissue over strenocleidomastoid or brachioradialis muscle of forearm

6. What is the immediate lethal complication of thyroidectomy?
   - Reactionary haemorrhage & tension haematoma leading to airway obstruction

Specimen 2

Breast

- **Specimen**
- **Scenario**
- **Mammogram**
- **Peroperative picture**
- **Communication skill-**
  - **Oral - counselling**
  - **Written - Operation note, histopathology request.**

STATION: 00

This is a postoperative specimen of carcinoma breast in a female

Q.1. Give two important macroscopic findings in favour of the diagnosis.
Q.2. If this patient has had a Patey's mastectomy what structures are missing from the specimen?
Q.3. What investigations are required to detect secondaries in this patient?

Check list

1. a) Nipple retraction.
   b) Central tumour mass

2. a) The whole breast skin
   b) The whole breast tissue
   c) Axillary fat, fascia, lymph nodes

3. a) X-ray chest

b) Ultrasonogram of whole abdomen
c) Isotope bone scan
d) Brain scan
e) Ultrasonogram of the opposite breast
f) Mammogram of the opposite breast
g) CT/MRI of the opposite breast
(Either in sequence or anyone)

STATION: 00

Specimen of breast

i. Name of the operation.
ii. Indication
iii. What investigation do you want to evaluate the axilla?

Check list

Answer:

i) Mastectomy (simple)

ii) Giant fibroadenoma
Sarcoma
Phylloids tumor
Atypical hyperplasia

iii) USG
MRI
FNAC
Sentinel node biopsy
Axillary sampling

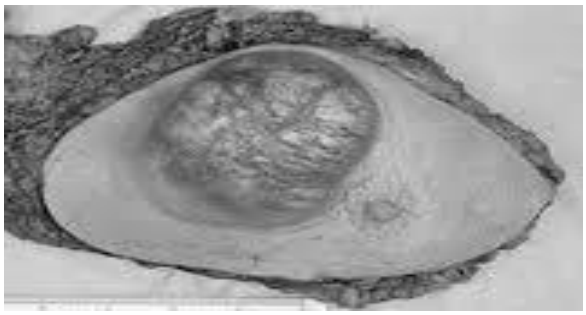

Fig : Breast specimen

1. What is the specimen?
   - Whole breast with nipple, areola, part of skin & axillary LN.

2. What sort of pathology in it?
   - Carcinoma breast

3. What stage do you think?
   - Probably stage II

4. What type of surgery done?
   - Simple mastectomy with axillary dissection

5. Mention post operative management protocol.

   - Post operative treatment — After healing of wound.
     - Chemotherapy (CT)
       i. 1st line—CMF
       ii. 2nd line—Doxorubicin, epirubicin
       iii. 3rd line—Paclitaxel, Docetaxel
     - Hormone therapy (HT)
       i. Tamoxifen
       ii. Anastrazole
       iii. Goserelin (LHRH agonist)
       iv. Megestrol acetate & medroxyprogesterone acetate
     - Radiotherapy (RT) on chest wall if aggressive tumour
     - Immunotherapy — transtuzumab (herceptin)
     - Reconstruction

- Post operative follow up
    i. Schedule:
        – 3 monthly for 2 years
        – 6 monthly for 3 years
        – Yearly – lifelong
- Evaluation at follow up:
    i. History
    ii. Physical examination: General, chest, axilla, apposite breast
    iii. Investigations:
        a. Blood—TC, DC, Hb%, ESR
        b. CXR
        c. USG of abdomen
        d. LFT—If jaundice
        e. Bone scan—if bone pain
        f. Mammography of opposite breast-yearly.

SCENARIO

30 Years old female came with bilateral breast pain. You have examined & after investigation, diagnosis was mastalgia.

1. What past history will you take? Why?
    - H/O hysterectomy with preservation of ovary in young. Women in this case ovary does not work well.
    - Ophorectomy with HRT

2. What drugs should be given?
    i. Evening prime rose oil
    ii. Anti gonadotrophin – danazole
    iii. Bromocriptine: Dopamine D2 receptor agonist
    iv. Tamoxifen
    v. LHRH analogue – goserelin
    vi. Gamolinic acid

3. Which is best, why?

- Gamolinic acid, as least side effect

4. If diuretic be included?
   - No.

5. What is the role of antibiotic?
   - No role

6. Indications of MRI in breast cancer.
   i. To distinguish scar from recurrence
      Not accurate within 9 months of radiotherapy
   ii. Gold standard for imaging the breast with implant
   iii. Assessment of axilla in both primary breast cancer & recurrent disease

7. Biochemical markers of carcinoma breast.
   i. ALP & GGT – in liver metastasis
   ii. Urinary calcium & hydroxyprolene in bone metastasis
   iii. CEA, CA 15-3

Another specimen of breast

1. What is the specimen?
   - Resected specimen of breast

2. What are the morphological findings?
   - Cuticular surface showing:
   - Nipple is retracted
   - Skin with ulceration. The margin of ulcer is slightly raised, floor is rough & irregular
   - Cut surface showing:
     A growth having —
     No well marked capsule
     Surface is concave

3. Indications of simple mastectomy?
   i. Carcinoma of breast stage I and II

ii. Giant fibroadenoma
iii. Cystosarcoma phyllodes

4. From were carcinoma breast arises?
   - Duct epithelium

5. What are the beast tumours?

i. Benign:

Breast cyst
Fibroadenoma
Phyllodes tumour (Brodie's disease)
Duct papilloma

ii. Malignant:

Histologic types
Secondary : From malignant melanoma

a. In situ carcinoma

DCIS
LCIS

b. Invasive carcinoma

Ductal
Lobular
Mixed
Rarer histovariants usually carrying better prognosis--
Colloid
Medullary
Tubular
Inflammatory carcinoma
Other maligrant tumors
Sarcoma
Lymphoma

6. Why nipple retracted?
   - Carcinomatous cells infiltrated the Asley Copers ligament

7. How patient present?

i. Due to primary growth: Breast lump
Nipple discharge
ii. Due to metastasis: cough, haemoptysis, bone pain, jaundice
iii. Generalized effects: Anaemia, loss of appetite & weight

8. What investigations you will do to confirm Dx?
   - FNAC/ core biopsy/ Trucut/ incisional biopsy

9. What other investigations?
   - For staging: Chest X-Ray P/A view
   - USG of whole abdomen

10. What are the staging?
    i. Manchester
    ii. TNM

11. Commonest breast tumour –
    - Fibroadenoma

12. Commonest breast swelling –
    - Breast abscess.

13. What are the causes of blood stained /serosanguinous discharge from nipple?
    i. Duct papilloma
    ii. Duct Carcinoma
    iii. Duct ectasia
    iv. Fibrocytic disase

14. What are the levels of axillary lymph nodes?
    - Level I : Lateral to the pectoralis minor
    - Level II : Posterior to the pectoralis minor
    - Level III : Medial to the pectoralis minor

15. What are the flaps for breast reconstruction?
    - TRAM flap-Better, usually performed as a free transfer LD flap, DIEP-Deep inferior epigastric perforator, Gluteal flap

16. Most common type of reconstruction –
    - Silicon gel implant under the pectoralis major muscle

17. When reconstruction done?
    - Immediate reconstruction
    - Delayed reconstruction

18. When frozen section essential?
    - When FNAC inconclusive.

19. Consent from whom?
    - Both from patient & her husband.

20. Why consent of husband necessary?
    - Psychological support
    - Sexual attraction
    - Avoidance

21. What are the phenomena resulting from lymphatic obstruction in advanced breast cancer?
    i. Peaud' orange
    ii. Cancer-en-cuirasse
    iii. Lymphangiosarcoma
    iv. Lymphoedema

22. What is Peaud' orange?
    - Cutaneous lymphatic oedema. Where the infiltrated skin is tethered by sweat ducts, it can not swell leading to an appearance like orange skin.

23. What is neo-adjuvant therapy, adjuvant therapy?
    - Neoadjuvant therapy → pre operative CT/RT
    - Adjuvant therapy → post operative CT/RT

24. What are side effects of tamoxifen
    i. Endometrial cancer
    ii. Thrombophlebitis
    iii. Hot flush

iv. Vaginal dryness
v. Loss of libido
vi. Cataract, Wt gain

25. How can you prevent CA breast?
    i. Avoid fatty diet
    ii. Avoid alcohol
    iii. Avoid OCP
    iv. Screening
    v. Chromosomal study: BRCA1, BRCA2
    vi. Chemoprevention

26. What is the tumour marker of at breast?
    - CA 15-3, CEA

27. When tethering of skin occurs?
    - When ligament of Coopers infiltrated with cancer cell indrawing of skin occurs.

28. What investigation can be done from this specimen?
    i. Histopathology
    ii. Receptor study.

FIBROADENOMA

1. State your findings.
    - Well defined circumscribed hyperdense mass measuring about 2.5 x 2.5 cm
    - Fibrofatty tissue structures are well maintained

2. What is your dx?
    - Fibroadenoma breast (in CA breast there is stellate (star) shaped mass.

3. What are the C/F?
    - Asymptomatic lump
    - Very rarely pain

- Apprehension

4. How will you confirm?
    i. FNAC
    ii. Tru cut biopsy-usually not done
    iii. Excision biopsy

CARCINOMA

1. What are your findings? What is the sign of malignancy?
    i. Mass with ill defined or speculated border
    ii. Malignant calcification
        These are micro calcification which may be
        Claustered
        Fine lamellar-at least 5
        Pleomorphic
    iii. Distortion of adjacent stroma
    iv. Skin tethering
    v. Obliteration of retromammary space

2. What are the D/D?
    i. CA breast
    ii. Chronic mastitis
    iii. Fat necrosis
    iv. Antibioma
    v. TB

3. What is your dx? How will you confirm?
- CA breast
- FNAC

17. Suppose it is an inflammatory CA. How will you manage?
- Assessment of the patient with
    History
    Clinical examination
    Relevant investigations

- Staging, tissue grading
- Treatment according Stage:
  Stage I, II: Simple mastectomy with axillary clearance followed by systemic therapy, CT, HT, RT
  Stage III, IV : Systemic control – Systemic therapy
  Locoregional control-RT
  Mastectomy-toilet mastectomy

18. What are the indications of axillary sampling?
    Stage I, Stage II disease when pre operative FNAC not done only when frozen facilities are available.

19. What are the information you want from pathologist?
    i. Tissue dx
    ii. Tissue differentiation/grading
    iii. Margin involvement/ base involvement
    iv. Nodal status
    v. Vascular & neural invasion
    vi. Receptor status

20. What are the prognostic factors?
    i. Tumour size
    ii. Lymph node status
    iv. Invasion and metastasis
    v. Grade of the tumour
    vi. Hormone receptor status
    vii. Tumor proliferation S- phase fraction, longer good
    viii. Epidermal growth factor receptor
    HER2 oncogene/receptor
    Thymidine labdling index >3% good, <3% bad

21. Disadvantage of mammographic screening?
    i. Radiation risk
    ii. Psychological & physical mobidity of the test.
    iii. Anxiety in false positives
    iv. False reassurance of FN
    Screening programmes are expensive
    v. Cost of additional cases treated.

Specimen 3

Oesophagus & stomach

- **Specimen – Total gastrectomy with or without splenectomy/partial gastrectomy**
- **Imaging – Barium swallow oesophagus, barium meal stomach**
- **Photograph of endoscopy**
- **Scenario of oesophagus / stomach pathology**

Specimen: Oesophagus with part of stomach

1. What is the structure?
    - Tubular structure Oesophagus and part of stomach

2. What is the lesion?
    - CA oesophagus

3. What are the problems it can give rise?
    i. Dysphagia-Nutritional impairment
    ii. Aspiration & its complications
    iii. Hoarseness of voice

4. How can you treat?
    - Surgery: Oesophagogastrectomy with oesophagojejunsotomy
    - Chemotherapy :
        Paclitaxe (taxol)
        Cisplatin
        5-FU

- Radiotherapy: EBR, brachytherapy.

5. Do you think adequate excision done here?
   - No

6. What should be the free margin?
   - Proximal clearance of at least 5 cm
   - Distally upto proximal 1/3rd of stomach (10 cm both proximally & distally)

Specimen 4

Stomach

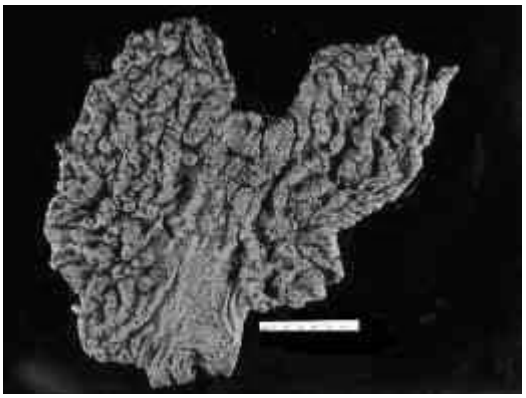

Fig: Stomach specimen

1. Name the specimen
    - Specimen of resected part of stomach which is cut open.

2. What are the identifying point? why it is stomach?
    i. Mucosal rugosity
    ii. Lesser omentum
    iii. Greater omentum
    iv. Duodenum is there (Not in this specimen)

3. What are your pathological findings? What is your observation?
    i. Big ulcer in mucosal surface about 4 cm x 3 cm
    ii. Margin is irregular/everted
    iii. Rugosity partly lost surrounding the ulcer
    iv. Floor is irregular
    v. Serosa is involved
    vi. Nodular change in serosa

vii. Black is spot in serosal surface

4. What is the site of the lesion?
   - In body of the stomach along the lesser curvature. (Opposite the ulcer lesser omentun is attached)

5. What investigations would you advice?
   i. Upper GI endoscopy & biopsy
   ii. USG of whole abdomen
   iii. CT scan of abdomen
   iv. Endo USG

6. Is there any role of Ba meal x-ray in CA stomach?
   - Yes. If it is a large polypoidal growth in antrum probe of endoscopy can not be introduced beyond the growth; to see the extent of the growth.

7. What are the common complications of such type of operation?
   i. Haemorrhage
   ii. Duodenal stump blow out
   iii. Pancreatitis
   iv. Nutritional deficiency
   v. Stomal obstruction: Due to stenosis or recurrence of growth

8. What was the type of operation here?
   - Distal radical gastrectomy: Lower 2/3rd of stomach, omentum, associated radical: Part involved & LN one tier beyond the involvement.
   - Partial gastrectomy is not Rx of malignant ulcer.

Further discussion

1. What is it?
   - Resected specimen of stomach

2. What operation done?
   - Radical gastrectomy

3. Why such operation done?
    - For carcinoma stomach

4. S/S of duodenal blow out
    - Presents on 4th to 5th POD usually, secondary duodenal stump leakage around 10th POD due to ischaemia.
    - Pain — Initially upper abdomen, later on whole abdomen
    - Fever
    - Vomiting
    - Tense, tender abdomen

5. What are the commonest site of hydatid cyst?
    i. Liver 52-77%
    ii. Lung 8.5-44%
    iii. Abdominal cavity 8%
    iv. Kidney 7%
    v. CNS 0.2-2.4%
    vii. Bone 1-2.5%

6. What operation done in testicular tumour?
    - Orchidectomy
    - Retroperitoneal lymph node dissection when mass remain after CT

7. Why loss of rugosity surrounding the ulcer?
    - Due to infiltration of mucosa by malignant cells

8. What are nodules on serosal surface?
    - Serosal surface is infiltrated by malignant cells

9. What are the types of gastrectomy?
    - Curative gastrectomy
    - Palliative gastrectomy

10. Curative lower radical gastrectomy
    i. Tumour itself
    ii. Proximally 5cm
    iii. Greater omentum

iv. Lesser omentum
v. First 2.5 cm of duodenum
vi. Lymph nodes one tier beyond involved tier

11. What is early gastric cancer?
- Cancer limited to the mucosa & submucosa with or without lymph node involvement

12. How the patient presents?

i. Due to primary growth:
- Palpable abdominal lump
- Haematemesis & Melaena
- Perforation
- Features of GOO

ii. Due to metastasis :
- Jaundice
- Hepatomegaly
- Ascites

iii. Generalized effects:
- Loss of appetite
- Asthenia
- Anaemia

13. How will you evaluate the patient?
- Upper GIT endoscopy & biopsy
- USG of abdomen
- X-ray of chest

14. What will be the H/P report?
- Adenocarcinoma
- Squamous cell CA if near cardia
- Adenosquamous CA
- Lymphoma
- Gastric stromal tumour

15. Commonest site of CA stomach
    - Antral region in past.
    - Now cardic 17% , OG junction 18%

16. Morohological types of early gastric cancer-endoscopic appearance
    i. Protruding
    ii. Superficial :
        Elevated
        Flat
        Depressed
    iii. Excavated

17. Bormann classification of advanced gastric cancer- revised classification of gastric cancer, the recognized macroscopic types.
    i. Polypoid
    ii. Ulcerative
    iii. Infiltrative
    iv. Diffuse

18. Complications of gastric surgery

A. During operation:
- Hemorrhage
- Injury to pancreas, duodenum, spleen, oesophagus, vessels

B. Post operative:

Early:
i. Hemorrhage
ii. Anastomotic leakage
    Sites —
    - Duodenal stump blow out
    - Gastrojejunal anastomosis
    - Oesophagojejunal anastomosis

iii. Obstruction of stoma
iv. Secondary ulcer haemorrhage

Late:

- Small stomach syndrome
- Nutritional deficiency: vit B_{12} deficiency

19. What are the malignant tumours of stomach?
    i. Carcinoma: Adenocarcinoma, SCC
    ii. Sarcoma: Leiomyosarcoma
    iii. Lymphoma
        - Primary lymphoma
        - Part of generalized lymphoma-more common
    iv. Carcinoid tumour

20. Benign tumours of stomach:
    i. Gastric polyp:
        a. Metaplastic
        b. Inflammatory
        c. Adenomatous
        d. Carcinoid
    ii. Gastric stromal tumour - leiomyoma

21. Premalignant conditions of stomach
    i. Gastric polyp = hyperplastic, adenomatous – more chance
    ii. Chronic atrophic gastritis of pernicious anaemia
    iii. Gastric ulcer
    iv. *H. Pylori*

Specimen 5

Spleen and body & tail of pancreas

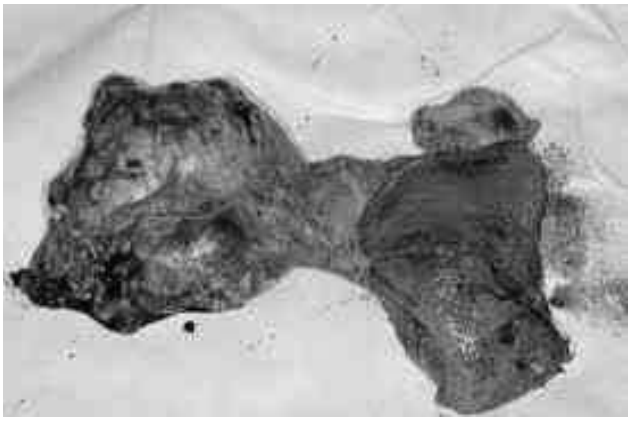

Fig: Spleen with body & tail of pancreas

1. What are the structures?/Describe pathoanatomy.
   - Spleen with body and tail of pancreas

2. What type of surgery done?
   - Distal pancreatectomy with splenectomy

3. What may be the pathology or disease concerned?
   i. Pancreatolithiasis
   ii. Chronic pancreatitis
   iii. Carcinoma body and tail of pancreas
   iv. Distal pancreatic injury

4. Give 5 indications of splenectomy.
    i. Traumatic splenic rupture
        a. Accidental
        b. Iatrogenic-during mobilizing splenic flexure of colon
    ii. Haemolytic anemia
        - Congenital: Hereditary sherocytosis
        - Thalassaemia
        - Acquired: Autoimmune hemolytic anaemia
    iii. ITP → To reduce thrombocytopenia
    iv. As a part of other operation e.g.
        - Radical gastrectomy either total or radical
        - Distal pancreatectomy
        - Shunt or variceal surgery for portal hypertension
    v. Primary splenic tumor
    vi. Staging laparotomy in Hodgkin's lymphoma
    vii. Others:
        - Hypersplensim
        - Splenic abscess
        - Splenic tuberculosis

5. Stages of splenic injury presentation
    i. The patient succumbs rapidly from massive hemorrhage, usually as a consequence of trauma.
    ii. Initial shock, recovery, signs of late bleeding
    iii. The delayed use — Delayed rupture

6. Clinical signs of splenic rupture
    - Abdomen: Lt upper quadrant guarding, tenderness distension
    - Referral pain to the left shoulder — Kehr's sign

7. Blood pictures after splenectomy
    - Red cells:
        - Abnormal cells →Target cells/schistocytes
        - Inclusion → Howell-Jolly body, Heinz body
    - White cells: Leucocytosis
    - Platelets:
        - Abnormal platelet morphology
        - Thrombocytosis

8. Neoplasms of spleen →
    i. Lymphoma
    ii. Haemangioma
    iii. Angiosarcoma
    iv. Fibrosarcoma
    v. Myelofibrosis
    vi. Secondary tumor deposits from —
        Breast
        Lung
        Pancreas
        Cutaneous melanoma

9. What are the complications of this type of surgery?

- Per operative
    - Haemorrhage
    - Injury to surrounding structure:
        - Stomach
        - Transverse colon
        - Lt kidney

- Post operative

    Early:
        - Haemorrhage – slip of ligature
        - Acute gastric dilatation
        - Hematemesis – gastric mucosal congestion due to ligation of short gastric vessels
        - Left basal atelectasis or pleural effusion
        - Pancreatic fistula
        - Gastric fistula
        - Subphrenic abscess

    Late:
        - Post splenectomy septicaemia:
        - OPSI

10. Causes of infection after splenectomy

i. Spleen is essential for generation, maintenance & differentiation of unprimed T cells
   → So after splenectomy there is defective immune response to nearly encountered antigens in body.
ii. Defective opsonization
iii. Impaired phagocytosis

11. Indications of surgery in acute pancreatitis
    i. Doubt as to the diagnosis
    ii. Deterioration of patients condition due to necrosis or infection
    iii. Treatment of complications
        - Abscess
        - Pseudocyst
        - Necrotizing pancreatitis
        - Obstructive jaundice
    iv. Treatment of gall stone

Specimen 6

Gallbladder and Biliary tree

- **Specimen: Mucocele/Empyema/Carcinoma**
- **Imaging: ERCP/MRCP/PTC**
- **Photograph: Laparoscopic view**
- **Scenario: Gallbladder and biliary tree pathology**

Specimen: Mucocele of Gall bladder

Fig: Mucocele gall bladder

1. What is the specimen you consider?
   - Gall bladder

2. What type of surgery done here? Write 5 steps cholecystectomy.
   - 5 Steps are —
     a. Opening the abdomen through rt subcostal incision
     b. Careful packing off:- Duodenum, transverse colon, intestine stomach RT kidney pouch
     c. Cystic artery identification, ligation, division
     d. Cystic duct identification, ligation, division
     e. Dissection of gall bladder from gall bladder fossa

   → Closure in 3 layers

3. What are the pathological changes present in it?
   - Gall bladder is hugely distended, wall of the gall bladder more or less transparent serosal surface is smooth suggestive of absence of inflammation, congested veins over the gall bladder wall.

4. What are the possible diagnoses?
   i. Mucocele of gall bladder
   ii. Empyema of gall bladder
   iii. Impaction of stone in cystic duct
   iv. Tumour in cystic duct

5. Complications of disease & surgery

   A. Complications of disease/of acute cholecystitis
   - Empyema
   - Gangrene
   - Perforation

   B. Complications of cholecystectomy

   i. During operation:
   - Injury to the hepatic & common bile duct
   - Injury to right hepatic artery
   - Haemorrhage:
     1. Torn cystic artery
     2. Slipped ligature

   ii. Post operative:

- Early:
  i. Haemorrhage
  ii. Accumulation of bile in subphrenic, subhepatic space
  iii. Subphrenic abscess
  iv. Basal pneumonia
  v. Wound infection
- Late : Biliary stricture

6. Post cholecystectomy syndrome
   - Preoperative symptoms persisting postoperatively after cholecystectomy.

- Causes:
  i. Retained stone
  ii. Long cystic duct stump
  iii. Stone in stump
  iv. Bile duct stricture
  v. Papillary structure
  vi. Biliary dyskinesia
  vii. Remnant of gall bladder

- Classical sings of bile leak or bile duct injury:
  - Upper abdominal or chest pain, associated with tachy cardia and persistent hypotension.

Management:
- Abdominal ultrasound and Aspiration to datermine if it is bile stained placement of a drain into subhepatic/subphrenic collection.
- Re-laparotomy

8. What is blind loop syndrome?
   - Symptom complex resulting from stagnation and bacterial overgrowth of a segment of gut.

9. What are the causes of mucocele gall bladder?
   i. Impacted store in neck of gall bladder

ii. Cholangiocarcinoma obstructing neck
iii. Kinking of cystic duct

10. What is the pathophysiology?
- Gall bladder with some bile inside if obstructed → tension in GB → Opening up of lymphatics→ bile absorbed → muscus secretes from epithelial lining → ultimately no bile only strile mucus.

11. What is the presentation?
i. There may be H/O biliary colic
ii. Painless lump in RT hypochondriac region

12. Treatment of mucocele gall bladder
→ Cholecystectomy:
i. laparsocopic-first suck out content
ii. open

13. Indications of cholecystectomy
i. Acute
ii. Chronic cholecystitis
iii. Empyema gall bladder
iv. Procellain gall bladder
v. Gall bladder polyp:
a. If they change in size
b. If longer than 1 can
vi. Gall bladder diverticulum
vii. Carcinoma gall bladder: Along with segmental resection of liver

14. Staging of carcinoma gall bladder.

Stage I	:	Confined to mucosa
Stage II	:	Muscle layer
Stage III	:	Serosa
Stage IV	:	Cystic node
Stage V	:	Liver & adjacent organs

Specimen of mucocele of gall bladder

1. Identify the specimen with diagnosis?
   → Mucocele of gall bladder

2. i) Call bladder is distended.
   ii) Wall is thin and shiny
   iii) Stone is impacted in the cystic duct

3. Give two causes of such pathology
   i) Gall stone impacted in the neck of gall bladder
   ii) Cholangiocarcinoma occluding the cystic duct

4. Name two typical clinical features specific with this condition with which the patient may present.
   i) Papablo-lump in the right hypochondrium
   ii) Pain

5. Name the content of the specimen.
   → Sterile mucus

Specimen of empyema of gall bladder

1. What are the pathological changes?
   - Gall bladder is distended
   - Wall of the gall bladder is opaque
   - Black area over founds

2. What is your diagnosis?
   → Empyema gall bladder

3. When it occurs/What is the pathogenesis?
   i. As a sequelae of acute cholecystitis
   ii. When mucocele becomes infected

4. How presents

i. H/O biliary colic or acute cholecystitis
ii. Painful lump in RT hypochondriac region

5. What is the treatment?
→ Open cholecystectomy

6. What are the causes of palpable gall bladder?
i. Mucocele of gall bladder
ii. Empyema gall bladder
iii. Gall bladder neoplasm
iv. Carcinoma head of pancreas
v. Carcinoma distal CBD
vi. Acute cholecystitis in lean & thin patient when gall bladder covered by omentum.

Photograph intact & split open panproctocolectomy specimen

1. Describe the lesions seen in the pictures
→ The colonic mucoja is studded with multiple polypoid lesions.

2. What is your diagnosis?
→ Familial adenomatous polyposis coli (FAP)

3. Describe in few sentences the pathology & pathogenesis.
→ These are adenomatous polyps. This is a hereditary condition and inherited as autosomal dominant. Affected gene 5p: A good number of family members are affected. Affected persons will develop the condition within 20 years, present with symptoms.

4. What complication can supervene if not treated in time?
→ Dysplastic changes leading to multicentric carcinoma colon.

5. What are the treatment options?
- Panproctocolectomy with permanent ileostomy.
- Total colectomy with ileoanal anastomosis of anal canal and lower rectum is free of the disease.

Specimen 7

Specimen of APR

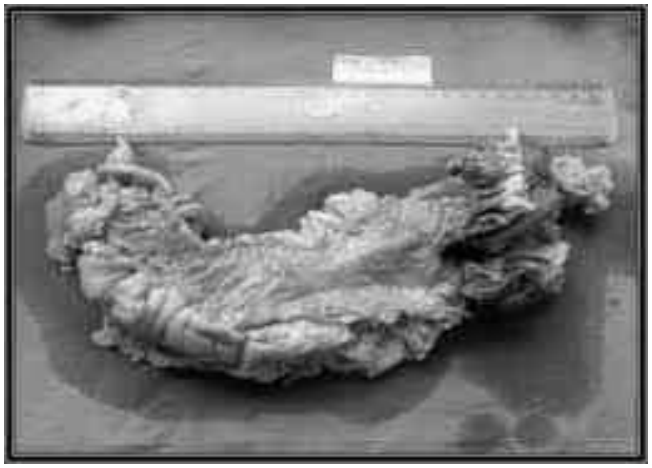

Fig : Specimen APER

1. Name the specimen
    - Resected specimen of APER

2. What operation done?
    - APR/APER

3. What are the indications of this operation?
    i. Carcinoma lower 1/3rd of rectum
    ii. Carcinoma anal canal
    iii. Carcinoid tumour of rectum
    iv. Malignant melanoma of anal canal
    v. Carcinoma anal verge not treated by CT, RT

4. What are the structures resected?
    i. Sigmoidcolon with par of sigmoid mesocolon.
    ii. Rectum with mesorectum
    iii. Anal canal
    iv. Anus with perianal skin
    v. Lymph nodes
    vi. Inferior mesenteric artery & vein
    vii. Posterior wall of vagina in female patient occasionally
    viii. Levator ani muscle

5. How will you counsel before surgery?
    - Regarding Disease
    - Regarding Treatment options
    - Regarding Stoma
    - Regarding Recurrence
    - Regarding Impotence, erectile dysfunction, bladder incontinence
    - Regarding CT, RT
    - Regarding follow up

6. Write 5 post operative complications

    During operation:
        - Haemorrhage
        - Injury to gonadal vessels pelvic splanchnic nerve bladder, urethra

    Post operative:

        Early:
        - Reactionary haemorrhage (perineal wound)
        - Wound infection
        - Peritonitis, pelvic abscess
        - Urine leakage
        - General complications: DVT, Pulmonary embolism
        - Complication related to colostomy: ischaemia & infraction
        - Prolapse
        - Retraction
        - Stenosis

- Colostomy diarrhoea
- Bleeding
- Herniation of small bowel lateral to stoma leading to intestinal obstruction.

Late

- Local recurrence
- Impotence
- Incontinence of urine

Specimen 8

Appendix

- **Specimen: Appendecitis/mucocele/carcinoid tumour.**
- **Scenario: Appendicular pathology**
- **Photograph: Laparoscopic view**

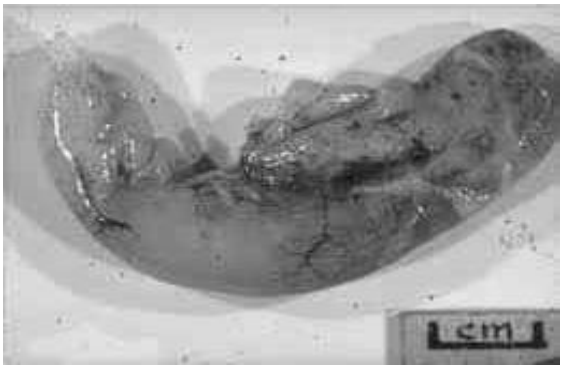

Fig: Specimen of vermiform appendix

STATION -00

You have done appendicectomy with a clinical diagnosis of acute appendicitis. The biopsy report of appendix says as below.

1. Report is — "Carcinoid at the tip of appendix". What you will do next?

2. Report says — "Carcinoid at the base of appendix.
   What investigations you will do for further treatment?

3. What is the treatment for the case with metastasis and lesion at the base?

4. What surgery you will do with carcinoid at the base of appendix having no metastasis?

Discussion

1. What is the specimen?
   - Resected specimen of vermiform appendix

2. Will you do a biopsy? Why?
   - Yes. To exclude neoplasia

3. What are the malignancy in appendix?
   i. Carcinoid tumour
   ii. Adenocarcinoma
   iii. Mucinous cystadenocarcinoma

4. If appendix contain carcinoid tumour, what is the management?
   i. Follow up if < 2cm
   ii. Right hemicolectomy if —
      → >2 cm
      → Lymph node involved
      → Caecal wall involved

5. Carcinoid tumour in base, what is the management?
   - I will investigate for primary & secondary
   - Possible treatment is right hemicolectomy

You have done appendicectomy. H/P shows carcinoid tumour at the tip.

1. What you will do?
   i. Follow up if < 2cm

ii. Right hemicolectomy if —
→ >2 cm
→ Lymph node involved
→ Caecal wall involved

2. If carcinoid in base?
- Right hemicolectomy

3. What investigations you will do for further Rx?
i. 24 hours urinary 5-HIAA
ii. CT or USG of liver
iii. C X R P/A view

4. If metastasis what you will do?
- Local deposit in liver-
  - Resection
  - Hepatic artery embalization-via cathefer placed in femoral artery.
- Cytotoxic therapy
- Octreotide — a somatostatin analogue
- Targeted radiotherapy using radiolabelled octreotide

5. What are the sites of common metastases?
- Liver
- Lung
- Lymph nodes

6. What are indications of RT hemicolectomy in carcinoid tumour?
i. Involvement of caecal wall
ii. Tumour >2cm
iii. Lymph nodes involvement

Specimen 9

Testis

- **Spceimen: Orchidectomy**
- **Scenario of testicular pathology**
- **Photograph**

SCENARIO

A boy of 10 years old with pain in right hemiscrotum with no other symptom gave similar H/O Rt sided scrotal pain of shorter episode e short duration 3-4 times in last year. On exam thicker spermatic cord with elevated Rt testis. Rt testis & epididymis extremely tender. Abdomen normal.

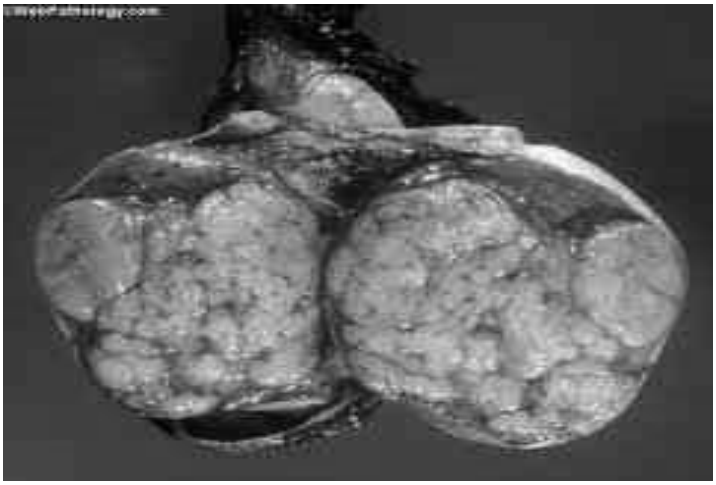

Fig: Specimen of testis

STATION - 00

Study the specimen carefully and answer the questions.

Q.1. Identify the specimen.

Q.2. Write down the macroscopic findings of the specimen.

Q.3. Write the differential diagnosis.

Q.4. What confirmatory investigations will you perform before doing this surgery?

Check list

1.		Testis with spermatic cord	1 .25
2.	a)	Enlarged testis	1
	b)	Thickened spermatic cord	1
	c)	Tunica vaginalis is split open	1
3.	a)	Seminoma	0.75
	b)	Teratoma	0.75
	c)	Combined seminoma & teratoma	0.75
	d)	Lymphoma	0.75
	e)	Interstial cell tumour	0.75
4.	a)	FNAC	1
	b)	Frozen section	1

Study the specimen carefully and answer the questions given below

Time-5 mins

Specimen: Testis

1. Name the pathology of the specimen?

A. i).....

ii).....
iii).....

2. Name two features which support the diagnosis.
   A. i) .....
   ii).....

3. Name three clinical presentation of this condition
   A. i).....
   ii).....
   iii).....

4. Name four preoperative investigations for definitive management.
   A. i).....
   ii) .....
   iii) .....

   iv).....

5. Name three adverse prognostic factors for the condition.
A. .....

Check list

1. Name the pathology of the specimen?
   A. Seminoma testis

2. Name two features which support the diagnosis.
   A. Testis is enlarged in size.
   B. cut surface is uniform
   C. Margin is regular

3. Name three features with which the patient may present.
   i) Painless testicular swelling
   ii) Hydrocele .
   iii) Features of metastasis — abdominal lump, chest pain, haemoptysis

4. Name four preoperative investigations for the definitive management.
   - FNAC
   - Serum alpha fetoprotein, Beta HCG
   - USG whole abdomen
   - X-ray chest P/A view.

5. Name three adverse prognostic factor
   1. Mixed tumor
   2. Tumor marker positive
   3. Advanced disease

STATION-00

- Identify the specimen
- What approach is implied here
- What is your Dx?
- Finding
- What are the steps of the operation in doubtful
- What are the biochemical indicator of this disease

Ans:

- Resected specimen of the tests with epididymis & portion of the spermatic cord.
- Inguinal approach
- Seminoma of the testes
- Testes is homogenously enlarged
  Cut surface is pinkish creamy in color
  No area of Hge. cyst or necrosis
- Exploration through inguinal approach clamping of the card

STATION-00

1. What is your diagnosis?
   - Torsion of testis

2. What are the D/D?
   i. Acute epididymo-orchitis
   ii. Strangulated inguinal hernia
   iii. Torsion of epididymis/hydatid cyst of morgagni.
   iv. Trauma to testis
   v. Testicular tumour

3. What investigations you want to do?
   - Doppler ultrasound
   - ^{99}Tc scan
   - CBC
   - Urine R/E
   - USG

4. What is initial Mx?
   - Manual untwisting e sedation
   - Testes is viable only 4-6 hours. So urgent.

5. What are the underlying causes?
   i. Inversion of the testes-most common predisposing causes.
   ii. High investment of the tunica vaginalis — Bell-clapper.
   iii. Separation of the epididymis from the body of the testes.
   iv. Long mesoorchism.

6. What is the principle of surgical treatment?
   - Immediate exploration
   - Untwisting the cord
   - Checking viability
   - If viable-Fixation
   - If not viable-orchidectomy
   - Fixation of contralateral testes

7. What is expected outcome?
   - If viable & early fixation good outcome.

STATION-00

A ten years old boy presented to emergency department with a three hour history of acute pain in the right hemiscroturn. There were no other symptoms. Patient gave a similar history of shorter episodes of right-sided scrotal pain of sudden onset, short duration and rapid resolution in the preceeding 12 months.

On Examination the patient was afebrile, had soft abdomen, right testicle was drawn up with thicker spermatic cord. Right testicle and spermatic cord were extremely tender.

1. What is the diagnosis?
2. What are the possible differential diagnosis?
3. What are the investigations and what initial management would you undertake?
4. What is the underlying abnormality leading to such a condition?
5. What are the principles of surgical treatment?
6. What is the expected outcome of treatment?

Testicular tumour

Fig : Seminoma

1. Describe the specimen.
   - Specimen of pathological testis with entire length of the cord.
   - The testis is bigger is size & wedge of tissue removed from the convex border.
   - Wedged area looks fleshy & homogenous replacing normal testicular tissue.

2. What is your diagnosis?
   - Testicular tumour probably seminoma.

3. What kind of surgical procedure done?
   - Retrograde orchidectomy /inguinal orchidectomy

4. How do you achieve your tissue diagnosis?
   a. FNAC/ Frozen section histopathology
   b. Paraffin section

   → Usual techniques (needle/open biopsy) of tissue sampling are contraindicated in suspected case of testicular tumour. Via inguinal approach, clamping the cord at the deep inguinal ring, the testis is delivered up & wedge of tissue taking from the suspected area- frozen section H/P is the ideal way of achieving tissue diagnosis.

   → Paraffin section H/P will finally reconfirm the frozen section diagnosis.

5. What investigations you will perform before planning therapeutic treatment?
   i. Tumour markers:
      AFP
      BHCG
      LDH
   ii. USG of the testes & abdomen
   iii. X-ray chest P/A view
   iv. CT scan of the abdomen.

Specimen 10

Malignant melanoma

- **Specimen**
- **Photography**

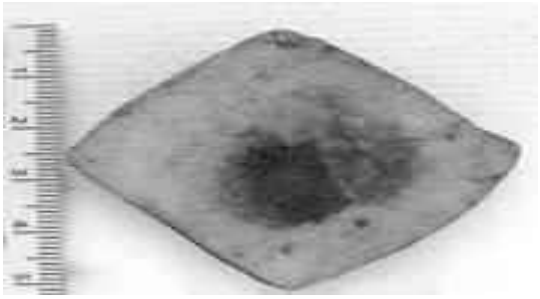

Fig: Melanoma

1. Describe your observation
   - Resected specimen of skin
   - Cuticular surface showing a nodular area which is pigmented, black is & its surface is irregular.
   - Subcutaneous surface showing fatty tissue, nodules.

2. What is your dx?
   - Melanoma/Malignant melonoma

3. What are the D/D?
   i. SCC
   ii. Pigmented BCC
   iii. Benign naevus
   iv. Keratoacanthoma
   v. Thrombosed haemangioma
   vi. Dermatofibroma / Histiocytoma

4. How the skin here?
    - Thick

5. Where such thick skin found
    - Sole

6. Why sole?
    - Thick skin
    - No hair

7. What are nodules in the subcutaneous surface?
    - May be local infiltration

8. What are the staging systems of melanoma?
    i. Breslow depth of invasion
    ii. Clark's level
    iii. Clinical
    iv. TNM

9. What are the types of malignant skin tumor?
    i. Primary:
        BCC
        SCC
        Malignant melanoma
        Dermatofibrosarcoma
    ii: Secondary: From –
        Kidney
        Breast

10. What is the other name of malignant melanoma?
    - Melanocarcinoma

11. What is the other name of BCC?
    i. Rodent ulcer
    ii. Tear Cancer
    iii. Field fire cancer

12. What is the other name of SCC?

i. Epithelioma
ii. Epidermoid carcinoma

13. What is the H/P findings of BCC?
- Closely packed islands of uniform basophilic epithelial cells.
- Palisade arrangement of Cells
- Central cells are polyhedral

14. What is the H/P findings of SCC?
- Cells nests epithelial pearl of central keratin surrounded by large peripheral eosinophilic or prickle cell.

Specimen 11

Sequestrum

Fig : Sequestrum

1. What is the specimen?
   - Sequestrum

2. In which disease it is common?
   - Chronic pyogenic ostemyelitis

3. How will you clinically confirm?
   - Discharging sinus.
   - Passage of dead a pieces of bone.
   - Sprouting granulation tissue.

4. Which investigation will confirm?
   - X-ray of the involved part

5. What is the x-ray finding of it?
   - Sequestrum - more radiopaque than normal bone
   - A space surrounding the sequesrurm - involvucrum

6. Name 3 important complications
   i. Local deformity
   ii. Pathological fracture
   iii. Source of septicaemia
   iv. Boedie's abscess
   v. Possibility of malignancy

7. Is there chance of malignancy? Name it.
   - Yes, squamous cell carcinoma.

8. What is the dreadful complication of this disease?
   - Malignancy-Squamous cell carcinoma

9. What is the difference between normal bone & sequestrum?
   i. Lighter
   ii. No muscle attachment
   iii. No periosteum

10. Would it be a osteosarcomatous change?
    - No

11. What do you want to see in X-ray of chronic osteomyelitis?
    i. Involucrum adequate or not
    ii. Extension
    iii. Collection - Pus

Another specimen of sequestrum

1. Describe your observation
    - Two dead pieces of bone
    - Dirty white in colour indicating loss of normal shininess cortex thin
    - Cortex, medulla not well defined
    - Multiple opening with moth eaten appearance

2. What is your dx?
    - Sequestrum

3. What is sequestrum?
    - A macroscopic piece of dead bone contained within living infected bone. It may be physically separated from the living bone, or be in the process of separating.

4. Why you call it a dead bone?
    i. Lighter
    ii. Dirty white
    iii. No periosteam
    iv. Moth eaten

5. What is osteitis?
    - Cortical infection is termed osteitis?

6. What organisms are responsible?
    - Staphylococcus aureus
    - B hemolytic streptococi
    - Gram negative rods E coli, salmonella
    - Anaerobes

7. What investigation you will do?
    i. Pus for C/S

ii. Tissue for H/P
iii. Local X-ray
iv. CBC, ESR
v. RBS

8. What is involucrum?
- New bone formed around an area of osteomyelitis in response to periosteal stimulation, usually periosteal stripping.

9. What is cloaca?
- An opening in the sheath covering recrosed bone.

10. What is the surgical treatment?
- Deroofing
- Sequesrectomy
- Currettage
- Saucerization
- Bone graft.

11. When you will treat?
- When involucrum is well formed

12. Why not before?
- Involucrum supports the bone
- If sequestrectomy & Saucerization done before formation of adequate involucrum there will occur pathological fracture.

13. When the whole bone becomes sequestrum?
i. Open fracture
ii. Virulent infection

14. Where starts, why?
- In metaphysis
- Peculiar vascular pattern Hair pin-bacteria got attacked more prone to trauma

15. Can a pt of chronic osteomyelitis die?
- Yes, from malignancy, amyloidosis?

Specimen 12

Kidney

STATION - 00

Study the specimen carefully and answer the questions.

Q. 1. List the pathological findings in this specimen.

Q. 2. What is the diagnosis?

Q. 3. List six important clinical features in this case.

Q. 4. Name two imaging investigations for diagnosis in the patient prior to surgery.

Check list

1.	(a)	Loss of normal renal tissue/parenchyma	1
	(b)	Multiple cystic spaces of varying sizes with thinning of normal cortex	1
	(c)	Normal calyceal pattern is lost.	1
2.	(a)	Polycystic kidney.	2
3.	(a)	Renal mass	0.5 X 6 = 3.0
	(b)	Loin pain	
	(c)	Haematuria	
	(d)	Urinary infection / pyelonephritis / infection	
	(e)	Hypertension	
	(f)	Uraemia	
	(g)	Renal tailored	

4. (a) Ultrasonogram of both kidneys 1
   (b) C.T. Scan of both kidneys 1

Study the specimen carefully and answer the questions given below

Time-5 mins

Specimen: Kidney

1. Identify the specimen with diagnosis?
   A.....

2. Write three diagnostic features seen in the specimen
   A. i) .....
   ii) .....
   iii) .....

3. Write down the name of operation performed in this case.
   A.....

4. Name four typical clinical features specific with this condition with which the patient may present.
   A. i) .....
   ii) .....
   iii) .....
   iv) .....

* Name one investigation to plan the treatment.

* Write down the prognosis in this case.

Check list

1. Identify the specimen with diagnosis?
   A. Renal cpecrcindma

2. Write three diagnostic features seen in the specimen
   A i) Kidney hugely enlarged in size. 1.0

ii) Kidney is irregular in shape. 1.0
iii) Cut surface shows presence of a neoplasm. 1.0

3. Write down the name of operation performed in this case.
A. Nephrectomy with removal of perinephric fat. 1.0 + 0.5

4. Name four typical clinical features specific with this condition with which the patient may present.
A. i) Hematuria with or without clot colic 1 .0
ii) Pain
iii) Mass in loin 1.0
iv) Paraneoplastic syndrome

5. Name one investigation to plan the treatment. 1
A. Contrast C.T.

6. Write down the prognosis in this case
A. Good (if no lymph node or renal vein involvement) 1 + 0.5

OTHERS

Station - 00

A patient with chest injury has had a water seal chest drain put in-situ.

Q. 1. What is the ideal site for inserting the chest drain?

Q. 2. Where will you place the water seal bottle in relation to the patient?

Q. 3. How will you identify that the water seal drain is functioning.

Q. 4. The water seal bottle has filled up with fluid from the chest. State the steps of changing the bottle.

Q. 5. Would you prefer a sharp dissection or a blunt dissection for this procedure.

Check list

1.	(a)	5th / 6th (most dependent space / part) intercostal space in the mid-axillary line/triangle of safety	1+1= 2
2.	(a)	Below the level of the chest of the patient.	2
3.	(a)	By the oscillation up and down movement of the fluid column in the tube with respiration /movement with respiration.	2
4.	(a)	The tube from the chest is clamped	1
	(b)	The new set is connected to the chest tube	1
	(c)	The clamp is opened / removed	1
5.	(a)	Blunt dissection.	1