Top 100 Surgery Concepts

BASED ON KMU PRE-PROFFS 2024 **BREAST • THYROID • DIABETIC FOOT**

1. BREAST: INVESTIGATIONS & BENIGN DISEASE

Concept	Exam Pearl / Clinical Scenario
Triple Assessment	Gold Standard (99% sensitivity): 1. Clinical Exam 2. Imaging 3. Histology.
Imaging Choice	Age < 35: **Ultrasound** (Breast is dense). Age > 35: **Mammography**.
Core Biopsy vs FNAC	Core Biopsy is superior. FNAC cannot distinguish **Invasive vs In-Situ** cancer.
Fibroadenoma	"Breast Mouse". Young female (15-25y). Highly mobile, painless, rubbery. Conservative management.
Phyllodes Tumor	Rapidly growing, large tumor in older women (>40y). Can be malignant. Wide Excision required.
Duct Papilloma	Most common cause of **Bloody Nipple Discharge** (single duct). Rx: Microdochectomy.
Duct Ectasia	Green/Black discharge. Slit-like nipple retraction. Associated with **Smoking**.
Breast Abscess	Lactational: Staph Aureus. **Do NOT stop breastfeeding**. Aspiration/Incision.
Periductal Mastitis	Recurrent abscess/fistula. Strong association with **Smoking**.
Cyclical Mastalgia	Pain related to menstrual cycle. Rx: Reassurance, Evening Primrose Oil, Support Bra.
Mondor's Disease	Thrombophlebitis of superficial breast veins. Palpable tender cord. Self-limiting.
Galactocele	Milk-filled cyst after cessation of lactation. Aspiration is curative.

2. BREAST CANCER: PATHOLOGY & MANAGEMENT

Concept	Exam Pearl / Clinical Scenario
Risk Factors	Early menarche, Late menopause, Nulliparity (Unopposed Estrogen), Obesity, BRCA gene.
Invasive Ductal Ca	Most common type (75-80%). Hard, gritty mass. "No Special Type".
Invasive Lobular Ca	10-15%. Frequently **Multifocal** and **Bilateral**. "Indian File" cells.
Inflammatory Ca	Worst prognosis. Red, hot, edematous breast (Peau d'orange). Blocked dermal lymphatics.
Paget's Disease	Eczema of nipple/areola. Always associated with underlying DCIS or Invasive Cancer.
Peau d'orange	Sign of advanced cancer. Due to obstruction of cutaneous lymphatic drainage.
Skin Dimpling	Due to invasion/shortening of **Cooper's Ligaments**.
Spread	Lymphatic: Axilla (Level I, II, III). Hematogenous: **Bone** (Lumbar vertebra) > Lung > Liver.
Sentinel Node Biopsy	Standard for clinically node-negative axilla. Uses Blue Dye + Isotope.
Tamoxifen	SERM. For **ER-Positive** tumors in **Pre-menopausal** women. Risk: Endometrial Ca, DVT.
Aromatase Inhibitors	(Letrozole/Anastrozole). For **ER-Positive** tumors in **Post-menopausal** women. Risk: Osteoporosis.
Trastuzumab (Herceptin)	Monoclonal antibody for **HER2-Positive** tumors. Risk: **Cardiotoxicity** (Check Echo).
Nottingham Index (NPI)	Prognostic Score = (0.2 x Size) + Lymph Node Stage + Grade.
Breast Conserving Surgery	Indicated for small solitary tumors. **Radiotherapy is MANDATORY** post-op.
Mastectomy Indications	Multifocal tumor, Large tumor/Small breast ratio, Central tumor (nipple involved).

3. THYROID: NODULES & CANCER

Concept	Exam Pearl / Clinical Scenario
Solitary Nodule Workup	1. TSH. 2. Ultrasound. 3. FNAC (if TSH normal/high). Scintigraphy (if TSH low).

Investigation of Choice	**Ultrasound Neck** is the first-line imaging.
FNAC Indication	Solid, Hypoechoic, Microcalcifications, Taller than wide, Irregular margins.
"Hot" Nodule	Functioning adenoma (Hyperthyroid). Rarely malignant. Do not biopsy.
Papillary Carcinoma	Most common (80%). Spread: **Lymphatic**. Histo: **Psammoma Bodies**, Orphan Annie Nuclei.
Follicular Carcinoma	Spread: **Hematogenous** (Bone/Lungs). FNAC **cannot** diagnose (needs capsular invasion).
Medullary Carcinoma	Arises from Parafollicular **C-Cells**. Marker: **Calcitonin**. Associated with **MEN 2**.
Anaplastic Carcinoma	Elderly. Rapidly growing, hard, fixed mass. Hoarseness. Very poor prognosis.
Thyroglossal Cyst	Midline swelling. Moves up with **swallowing** AND **tongue protrusion**. Rx: Sistrunk procedure.
Surgery for Papillary	Total Thyroidectomy (if >1cm). Lobectomy (if <1cm, low risk).
Post-Op Hypocalcemia	Due to parathyroid injury. Perioral paresthesia, Tetany. Rx: IV Calcium Gluconate.
RLN Injury	Unilateral: Hoarseness. Bilateral: Airway obstruction/Stridor (Tracheostomy needed).
Superior Laryngeal Nerve	Injury causes loss of high-pitch voice (Singers).

4. DIABETIC FOOT ULCERS

Concept	Exam Pearl / Clinical Scenario
Pathophysiology Triad	**Neuropathy** (Sensory/Motor/Autonomic) + **Ischemia** + **Infection**.
Wagner's Grade 0	Intact skin (High risk foot). Callus/Deformity present.
Wagner's Grade 1	Superficial ulcer (Partial/Full thickness).
Wagner's Grade 2	Deep ulcer extending to ligament/tendon/bone. No abscess.
Wagner's Grade 3	Deep ulcer with **Abscess** or **Osteomyelitis**.
Wagner's Grade 4	Gangrene of forefoot (digits).
Wagner's Grade 5	Extensive gangrene of the entire foot.
Probe-to-Bone Test	If metal probe touches bone, >90% PPV for **Osteomyelitis**.
Charcot Foot	Neuropathic osteoarthropathy. Hot, swollen, "Rocker Bottom" deformity. Rx: Total Contact Casting.
ABPI in Diabetics	Often falsely elevated (>1.3) due to calcified vessels (Monckeberg's sclerosis). Use Toe Pressure.
Management of Abscess	Immediate **Surgical Debridement** + Broad Spectrum Antibiotics.
Dry Gangrene	Wait for line of demarcation (Auto-amputation) unless infected.

5. MISCELLANEOUS ENDOCRINE

Concept	Exam Pearl / Clinical Scenario
Primary Hyperparathyroidism	"Bones, Stones, Groans". High Ca, Low PO4, High PTH. 85% Single Adenoma.
Sestamibi Scan	Pre-operative localization of parathyroid adenoma.
Pheochromocytoma	Adrenal medulla tumor. Headache, Palpitations, Sweating. High Metanephrines.
Pheo Pre-op Rx	**Alpha-blocker** (Phenoxybenzamine) first, THEN Beta-blocker. (Prevent hypertensive crisis).
MEN 1 Syndrome	3 Ps: **P**arathyroid, **P**ituitary, **P**ancreas (Gastrinoma/Insulinoma).
MEN 2A Syndrome	Medullary Thyroid Ca + Pheochromocytoma + Parathyroid hyperplasia.
MEN 2B Syndrome	Medullary Thyroid Ca + Pheochromocytoma + Marfanoid habitus/Neuromas.