Diabetic Foot Ulcers

PATHOLOGY • WAGNER'S • CHARCOT **KMU - FINAL YEAR SURGERY**

1. PATHOPHYSIOLOGY (THE TRIAD)

Q: What is the classic Triad of DFU formation?

1. Neuropathy (Sensory/Motor/Autonomic).
2. Ischemia (Peripheral Arterial Disease).
3. Infection (Polymicrobial).

Q: Effect of Sensory Neuropathy?

"Glove & Stocking" anesthesia. Loss of protective sensation leads to unnoticed trauma.

Q: Effect of Motor Neuropathy?

Wasting of small muscles (Lumbricals/Interossei) -> **Claw Toes** -> High pressure on metatarsal heads.

Q: Effect of Autonomic Neuropathy?

Loss of sweating (Anhidrosis) -> Dry/cracked skin (Portal for bacteria).

AV Shunting -> Bounding pulses + Bone demineralization (Charcot).

2. INVESTIGATIONS & TRAPS

Q: What is the "Probe-to-Bone" Test?

If a sterile metal probe touches hard bone at the base of an ulcer, the Positive Predictive Value for **Osteomyelitis** is >90%.

Q: Why is ABPI unreliable in diabetics?

Monckeberg's Sclerosis (Calcified media) makes vessels non-compressible, giving falsely high readings (>1.3).

Q: Alternative to ABPI?

Toe-Brachial Index (TBI) or Transcutaneous Oxygen Pressure (TcPO2).

Q: Gold Standard Imaging for Osteomyelitis?

MRI Foot. (X-ray changes lag by 2 weeks).

3. CHARCOT NEUROARTHROPATHY

Q: What is it?

Non-infective destruction of bones/joints in a neuropathic foot.

Q: Acute Phase Presentation?

Hot, Red, Swollen Foot. Often PAINLESS. Mimics cellulitis but no fever/high WBC.

Q: Chronic Deformity?

"Rocker Bottom" Foot (Collapse of midfoot arch).

Q: Management of Acute Charcot?

Total Contact Casting (TCC). Complete offloading until heat resolves.

4. WAGNER'S CLASSIFICATION (MEMORIZE!)

Grade	Clinical Features
Grade 0	Intact skin. High risk foot (Callus/Deformity).
Grade 1	Superficial ulcer (Partial/Full thickness).
Grade 2	Deep ulcer to ligament/tendon/bone. No abscess.
Grade 3	Deep ulcer with **Deep Abscess** or **Osteomyelitis**.
Grade 4	Localized Gangrene (Forefoot/Toes).
Grade 5	Extensive Gangrene (Whole foot).

5. MANAGEMENT PRINCIPLES

🚨 **SURGICAL EMERGENCIES**

Q: Management of Wet Gangrene/Abscess?

Immediate Surgical Debridement (Source control). Broad-spectrum antibiotics. Do not wait for vascular studies.

Q: Management of Dry Gangrene?

Auto-amputation. Wait for line of demarcation. Keep dry. Revascularize if needed.

Q: Best method for Offloading ulcers?

Total Contact Cast (TCC).

Q: Role of Revascularization?

Crucial for Ischemic ulcers (Angioplasty/Bypass). Pulse status dictates healing potential.

Q: Commonest organisms?

Polymicrobial: Staph Aureus, Pseudomonas, Anaerobes (Bacteroides).

6. CLINICAL SIGNS

Q: What is the "Prayer Sign"?

Limited joint mobility (Cheiroarthropathy). Patient cannot press palms flat together. Associated with severe microvascular complications.

Q: Semmes-Weinstein Monofilament?

Tests protective sensation (10g force). Failure to feel it = High risk for ulcer.