Ulcer: History, Clinical Examination, Treatment, Ointments & Surgical Instruments

1. History of an Ulcer

1. **Onset & Duration** – Acute or chronic? Sudden or gradual?
2. **Mode of Onset** – Spontaneous, traumatic, or following an infection?
3. **Pain** – Type (burning, throbbing, dull), severity, and relation to movement or pressure.
4. **Discharge** – Serous, purulent, sanguineous, foul-smelling?
5. **Progression** – Increasing or decreasing in size? Any history of recurrence?
6. **Previous Treatment** – Medical or surgical interventions taken before.
7. **Systemic Symptoms** – Fever, weight loss, night sweats (suggesting TB or malignancy).
8. **History of Trauma** – Any injury, burns, or pressure sores.
9. **Medical History** – Diabetes, tuberculosis, venous insufficiency, arterial disease, malignancy.
10. **Family History** – Genetic conditions like epidermolysis bullosa, malignancy.
11. **Social History** – Smoking, alcohol, occupation, hygiene status.
12. **Drug History** – Steroids, anticoagulants, immunosuppressants.

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2. Clinical Examination of an Ulcer

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1. General Examination

- **Vitals** – Temperature, pulse, BP, respiratory rate.
- **Pallor, Icterus, Cyanosis, Clubbing, Lymphadenopathy** – Suggestive of systemic diseases.

2. Local Examination (S-SITE C-BASE E-EDGE F-FLOOR S-SURROUNDINGS)

A. Site & Size

- Measure in cm (length × breadth × depth).
- Common sites: Leg (venous ulcer), foot (diabetic ulcer), pressure areas (bedsores).

B. Shape

- Round (arterial ulcer), irregular (malignant ulcer), punched out (trophic ulcer).

C. Edge

- **Undermined** – Tuberculous ulcer.
- **Sloping** – Healing ulcer.
- **Punched out** – Syphilitic ulcer.
- **Raised & Everted** – Malignant ulcer.

D. Floor

- Presence of granulation tissue, slough, necrotic tissue, or exposed structures (bone, tendon).

E. Discharge

- Serous (clear), purulent (infected), sanguineous (bloody).
- Foul smell (anaerobic infection).

F. Surrounding Skin

- Hyperpigmentation (venous ulcer).
- Induration (chronic ulcer or malignancy).
- Redness, warmth (signs of infection).
- Loss of sensation (neuropathic ulcer).

3. Systemic Examination

- **Peripheral pulses** – Absent in arterial ulcer.
- **Venous insufficiency signs** – Varicose veins, edema.
- **Neurological examination** – Sensory loss in diabetic neuropathy.

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3. Investigations

1. **Blood Tests** – CBC, ESR, CRP, blood sugar, HbA1c.
2. **Doppler Study** – Arterial/venous insufficiency.
3. **Biopsy** – If malignancy is suspected.
4. **Pus Culture & Sensitivity** – If infection is present.
5. **X-ray/CT/MRI** – If bone involvement is suspected (osteomyelitis).

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4. Treatment of Ulcers

1. General Measures

- **Wound care** – Cleaning with normal saline, avoiding harsh antiseptics.

- **Debridement** – Removal of necrotic tissue (surgical, enzymatic, mechanical).
- **Dressings** –
  - Hydrocolloid/foam dressings for moist healing.
  - Silver dressings for infected ulcers.
  - Negative pressure wound therapy (vacuum-assisted closure).
- **Pain Management** – NSAIDs or opioids if severe.
- **Antibiotics** – Based on culture sensitivity in case of infection.

2. Specific Treatment Based on Type of Ulcer

A. Venous Ulcer

- **Leg elevation** to reduce venous hypertension.
- **Compression therapy** (graded compression stockings, Unna boot).
- **Sclerotherapy or surgery** for varicose veins if needed.

B. Arterial Ulcer

- **Improve circulation** – Smoking cessation, exercise, and vasodilators.
- **Angioplasty/bypass surgery** if severe ischemia.

C. Diabetic Ulcer

- **Good glycemic control** (HbA1c <7%).
- **Offloading pressure** – Specialized footwear, total contact casting.
- **Early infection control** – Broad-spectrum antibiotics initially, then based on culture.

D. Pressure Ulcer

- **Frequent repositioning** (every 2 hours for bed-bound patients).
- **Pressure-relieving devices** (air mattresses, cushions).
- **Nutritional support** – High-protein diet, vitamin C, zinc supplements.

E. Malignant Ulcer

- **Wide local excision** if operable.
- **Radiotherapy or chemotherapy** for inoperable cases.

3. Surgical Treatment

- **Skin Grafting** – Split-thickness or full-thickness graft for large, non-healing ulcers.
- **Flap Surgery** – If the ulcer is deep or involves vital structures.
- **Amputation** – As a last resort in severe gangrene or infected ulcers.

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5. Ointments Used in Ulcer Treatment

1. **Silver Sulfadiazine (SSD) 1%** – Antimicrobial, used for burns & infected ulcers.
2. **Mupirocin 2% (Bactroban)** – Covers MRSA infections.
3. **Metronidazole Gel** – Used for anaerobic infections, foul-smelling ulcers.
4. **Povidone-Iodine Ointment** – Broad-spectrum antiseptic.
5. **Hydrogel Dressings** – Provides moisture for wound healing.
6. **Collagen-Based Dressings** – Used for chronic ulcers to promote healing.
7. **Growth Factor Ointments (Recombinant Epidermal Growth Factor - EGF)** – Used in diabetic foot ulcers.

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6. Surgical Instruments Used in Ulcer Management

1. Instruments for Wound Debridement

- **Scalpel (No. 15, 22 Blade)** – Sharp debridement.
- **Curette** – Scraping necrotic tissue.
- **Tissue Forceps (Adson, Toothed & Non-Toothed)** – Handling tissues.
- **Dissecting Scissors (Metzenbaum, Mayo)** – Cutting necrotic tissue.

2. Instruments for Biopsy

- **Punch Biopsy Set** – Circular blade for small tissue samples.
- **Excisional Biopsy Instruments** – Scalpel, forceps, sutures.

3. Instruments for Skin Grafting

- **Dermatome (Humby's Knife, Watson Knife)** – Harvesting skin grafts.
- **Mesh Grafting Machine** – Expanding skin grafts.

4. Instruments for Dressing & Wound Care

- **Sterile Gauze & Cotton Swabs** – Wound cleaning.
- **Syringe & Needles** – For irrigation and local anesthesia.
- **Bandage Scissors** – Cutting dressings.