ULCER

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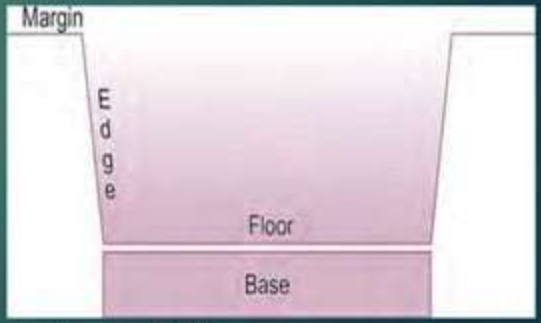
Definition

- A break in the continuity of the covering epithelium of the skin or mucous membrane.
- It may either follow molecular death of the surface epithelium or its traumatic removal

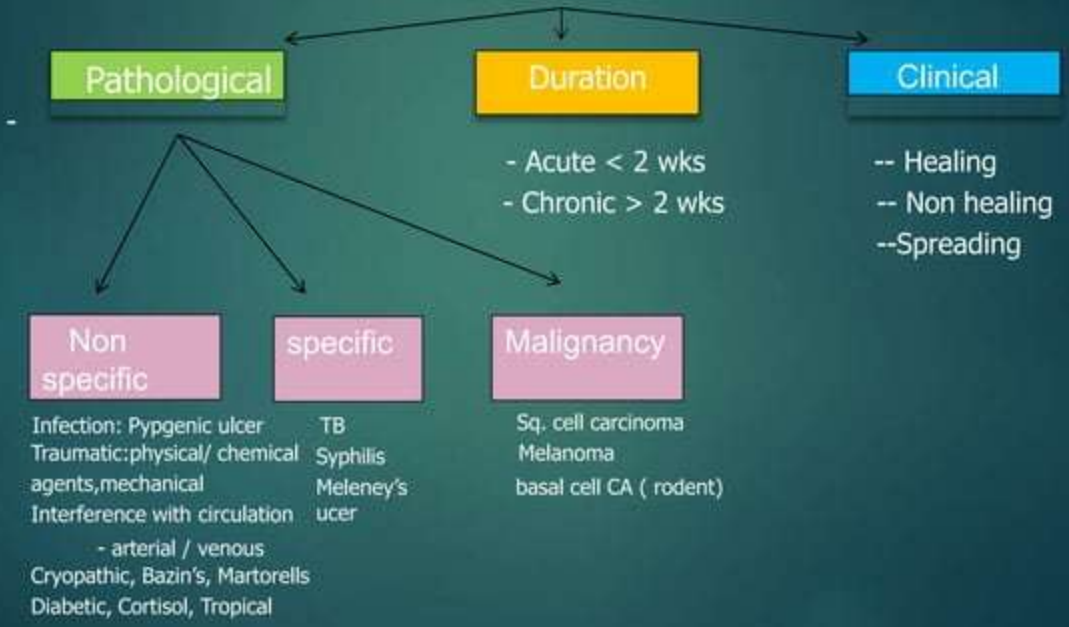
Parts of Ulcer

- Margin : Junction b/w Normal epithelium & Ulcer
- Edge: one which connects floor of ulcer with the margin
- Floor : Exposed surface of ulcer may contain discharge, granulation tissue or slough
- Base : on which ulcer rests may be bone or soft tissue



Parts of Ulcer

Classification



Spreading ulcer

Fig: Spreading ulcer with copious and purulent discharge

Healing Ulcer

Fig: Healing Ulcer with healthy granulation tissue in floor

3 zones in Healing Ulcer

- Innermost :Red zone of healthy granulation tissue
- Middle :Bluish zone of growing epithelium
- Outer :Whitish zone of fibrosis & scar formation

Non-healing Ulcer

Fig: Non-healing ulcer with pale unhealthy granulation tissue with slough

Causes of formation of chronic/nonhealing ulcer

Local causes:

- Recurrent infection
- Trauma, presence of foreign body or sequestrum
- Absence of rest and immobilization
- Poor blood supply, hypoxia
- Oedema of the part
- Loss of sensation
- Periostitis or osteomyelitis of the underlying bone
- Fibrosis of the surrounding soft tissues
- Lymphatic diseases

General/Specific causes:

- Anaemia, hypoproteinaemia
- Vitamin deficiencies
- Tuberculosis, leprosy
- Diabetes mellitus, hypertension
- Chronic liver or kidney diseases
- Steroid therapy locally or systemically
- Cytotoxic chemotherapy or radiotherapy
- Malignancy

STAGES OF ULCER HEALING

- Extension phase
- Transition phase
- Repair phase

Extension phase

- The floor is covered with exudates and sloughs
- The base is indurated
- Inflammed edge and margin
- The discharge is purulent or even blood stained

Transition phase

- Prepares for healing
- The floor becomes cleaner and the slough separates
- The induration of the base diminishes
- The discharge become more serous
- Small reddish area of granulation tissue appear on the floor

Repair phase

- Transformation of granulation to fibrous tissue, which gradually contracts to form scar
- The epithelium gradually extends from the new shelving edge to cover the floor (at a rate of 1mm/day)

Life history of Ulcer

	Extension	Transition	Repair
Floor	Covered with slough and exudate	clearer	granulation tissue transforms to fibrous tissue .
Base	Indurated	Induration decreases	further decreases.
Discharge	Purulent / even blood stained	more serous	serous
Granulation	absent	small areas appear & spread	epithelisation from surrounding area growth rate 1 mm/d 3 layers +ve
Pain	+++	++	-- ve

CLINICAL PRESENTATION

- History
- Physical examination

History

Note the following:-

- Duration (i.e. how long is the ulcer present?)
  - Acute: present for short time
  - Chronic: present for long time
- Mode of onset (i.e. how has the ulcer developed?)
  - Following trauma
  - Spontaneously e.g. following- swelling e.g. ulcerating lymph node in Tuberculosis or a scar of burn Marjolin's ulcer
  - Marjolin's ulcers are the malignant transformation of chronic wounds

History contd

- Pain (i.e. is the ulcer painful?)
  - Painful: ulcers associated with inflammation
  - Slight painful: tuberculous ulcer
  - Painless eg syphilitic, neurogenic, malignant ulcers
- Discharge (i.e. does the ulcer discharge or not?)
  - If YES: note the nature of discharge- pus, bloody, serous

Physical examination

- Local examination
- General examination
- Systemic examination

Local examination

- Inspection
- Palpation
- Examination of lymph node
- Examination of vascular insufficiency

Inspection

- Site: gives clue to the diagnosis
  - Varicose ulcer- lower limb on the medial malleolus
  - Rodent ulcer-face
  - Tuberculus ulcer-cervical
  - Trophic ulcer – heal
  - Malignant ulcer- anywhere

Inspection……..

- Shape:
  - Tuberculus ulcer- oval in shape
  - Syphilitic ulcer– circular in shape
  - Varicose ulcer – vertically oval in shape
  - Malignant – irregular in shape
- Size:
  - May determine the time of healing
  - E.g. the smaller the ulcer the shorter the time it will take to heal

Inspection……..

- Surrounding skin
  - E.g. red and edematous- acute inflammation
- Floor/surface

  Eg red granulation – healing ulcer
  - Black floor- malignant melanoma
  - Wash leather slough: pathognomonic of Gummatous ulcer
- Number: more than one
  - Tuberculous ulcer
  - Gummatous ulcer
  - Varicose ulcer

Inspection……..

Edge: five types:-

- *Sloping edge* e.g. healing ulcer
- *Punched out edge* e.g. Gummatous ulcer, deep trophic ulcer
- *Undermined edge* e.g. tuberculous ulcer-destroy subcutaneous faster the skin
- *Raised edge* e.g. Rodent ulcer
- *Rolled out (everted)*- e.g. Squamous Cell Carcinoma

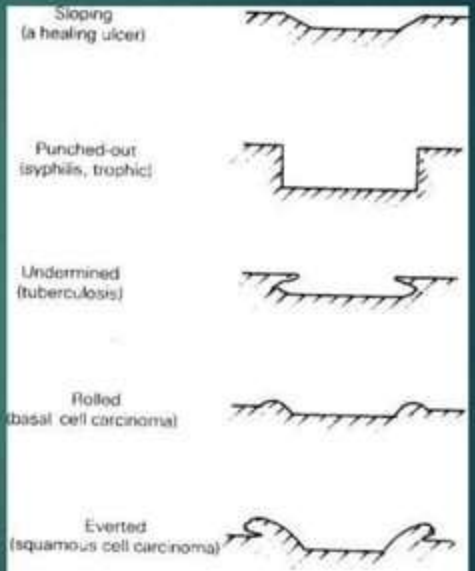


Figure 1.15 The varieties of ulcer edge.

Inspection.....

Discharge:

Different discharges in an ulcer (as well as from a sinus)

a. *Serous:* In healing ulcer
b. *Purulent:* In infected ulcer
   Staphylococci: Yellowish and creamy
   Streptococci: Bloody and opalescent
   Pseudomonas: Greenish colour due to pseudocyanin
c. *Bloody:* Malignant ulcer, healing ulcer from healthy granulation tissue
d. *Seropurulent*
e. *Serosanguinous:* Serous and blood
f. *Serous with sulphur granules:* Actinomycosis
g. *Yellowish:* Tuberculous ulcer

Palpation

- Tenderness:-
  - Tender- acutely inflamed ulcer
  - Slightly tender- tuberculous ulcer, syphilitic ulcer
  - Non-tender- malignant ulcer, chronic ulcer, neurogenic ulcer
- Edge and surrounding skin:-
  - Hard induration- malignant ulcer
  - Firm induration- chronic ulcer, syphilitic ulcer

Palpation.....

- Base (i.e. on which the ulcer rest)
  - Slightly induration- syphilitic ulcer
  - Marked induration- malignant ulcer
- Depth:
  - eg trophic ulcer may be deep to reach the bones
- Bleeding
  - easy bleed on touch is a feature of malignant
- Fixity to the deep structures
  - Eg malignant ulcers are usually fixed to deep structures

Examination of lymph node

- enlarged , tender: infected
- enlarged , stony hard , fixed: CA
- firm & shotty: hunterian chancre
- Not affected: Rodent ulcer

Examination of vascular insufficiency

- When located in lower part of leg:
  Look for varicose vein in Upper part of leg or thigh
- If no varicose found, look for arterial condition proximal to ulcer.
- Causes of Ulcer from poor circulation:
  Atherosclerosis
  Buerger's Dz
  Raynoud's Dz

Neurological Examination

- Sensory
- Motor
- Reflexes

General Examination

- Look for Malnutrition, Anemia , Diabetes

Investigations

- Haematological
- LFT / Protein
- Blood sugar -- fasting & post prandial
- Montoux test
- Serological tests for Syphilis
- Biopsy (wedge/ Excision) / scraping – histopath
- Swab -- culture / sensitivity
- Discharge – gm. staining, ZN staining for AFB, PCR for Koch.
- FNAC of enlarged LNs
- X-ray of affected part

Management of Ulcer

- Cause found and treated.
- Correction of Anaemia, protein & vitamin deficiency
- Blood transfusion if required
- Control of pain & infection
- Rest, immobilization, elevation & avoidance of repeated trauma
- Debridement
- Ulcer cleaning & dressing: NS – Ideal for ulcer cleaning

- Topical Antibiotics: Silver sulphadiazine, Mupirocin, Framycetin
- Vaccum Assisted Closure
- Once ulcer degranulates, defect is closed with secondary suturing, skin grafting or flaps.

Ulcer -- treatment

treatment

local

local applications (lotions / ointments)

- to separate slough
-- hasten granulation
-- stimulate epithelisation

Na hypochlorite
0.5% AgNo3 — early phase
Zinc Sulphate

Ointments (mupirocin, soframycin , povidon iodine)

Vinegar (1: 6) for pseudomonas

Amnion (fresh & cleaned with sodium hypochlorite stored at 4*C

Silver Foil / SWD / Infra red

Hydrocolloids , Alginates ,Tegaderm

Recombinant epidermal growth factor

general

-- treatment of cause
-- correct Aneamia
-- treat metabolic disorders.
-- Antibiotics
-- treatment of DM

Thank you