COMMON BACTERIAL INFECTIONS

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IMPETIGO

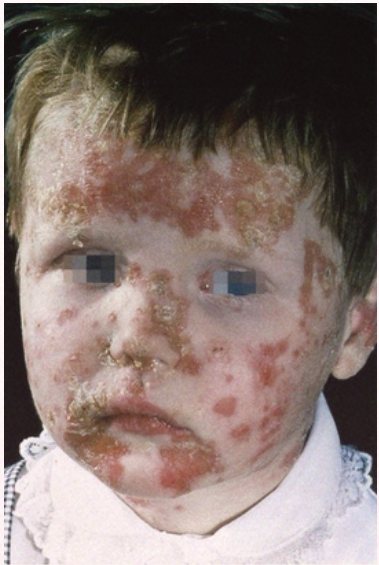
Impetigo is a common acute superficial bacterial skin infection (pyoderma).

- It is **characterized by**
- **pustules and honey-coloured crusted erosions.**
- **Types: Non-bullous ,bullous impetigo and ecthyma**

■ **Define:**

Impetiginisation: a superficial secondary in fection of a wound or other skin condition

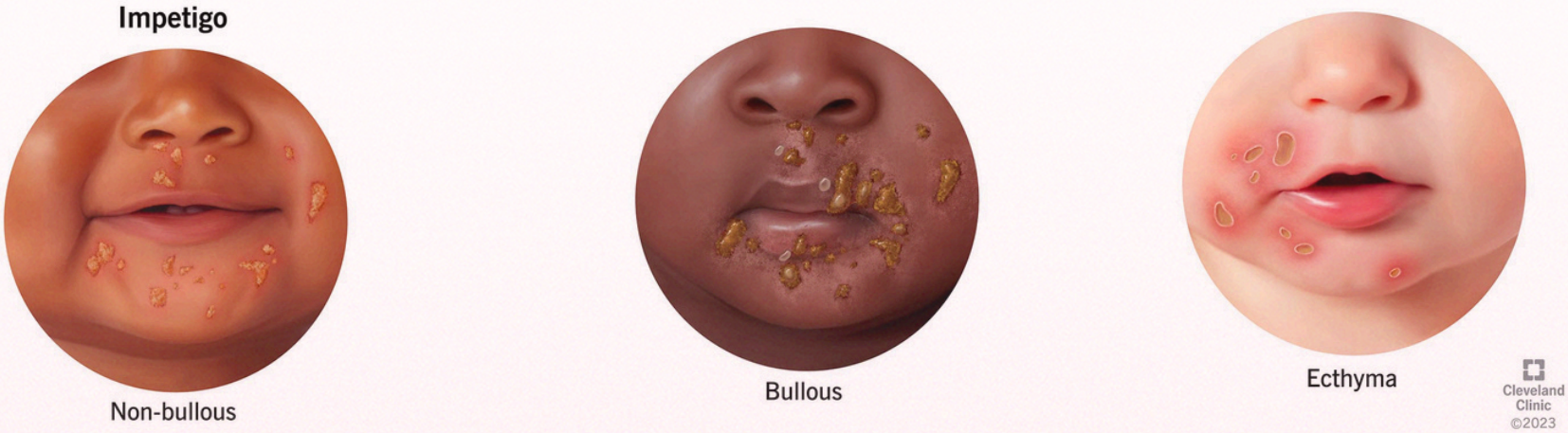
Ecthyma: An ulcerated impetigo



IMPETIGO – PATHOGENESIS

■**Non-bullous impetigo**: **S.aureus** and **S.pyogens** invade a site of minor trauma where exposed proteins allow the bacteria to adhere.

■**Bullous impetigo**: is due to **staphylococcal** exfoliative toxins (exfoliatin A-D), which **target desmoglein 1** (desmosomal adhesion glycoprotein) and cleave off the superficial epidermis through the granular layer



Primary impetigo mainly affects exposed areas such as the face and hands, but may also affect trunk, perineum and other body sites.

It presents with **single or multiple, irregular crops of irritable superficial plaques.**

These extend as they heal, forming annular or arcuate lesions

infect healthy skin without site of injury

Secondary: need skin break to enter the body (**Impetiginisation)**

The following factors predispose to impetigo:
- **Atopic eczema**
- **Scabies**
- **Skin trauma: chickenpox, insect bite, abrasion, laceration, thermal burn, dermatitis, surgical wound**

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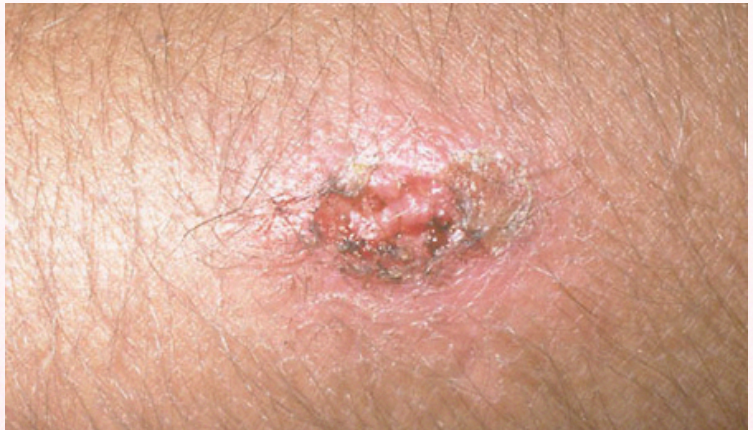
causative agent :

Bullous impetigo: S.aureus

Non-bullous impetigo: S.aureus and S.pyogens

Ecthyma: is usually duo to S.pyogens ,but S.aureus co-infection with may occur.

Impetigo is most common in children (especially boys),
but may also affect adults if they have
low immunity to the bacteria.
*peak onset is during summer .



IMPETIGO DISEASE COURSE

Most commonly affecte face and hands

Non-bullous impetigo: 70%

- Starts as a pink macule ➡ Vesicle or pustule (1ry lesion) ➡ crusted erosions (2ry lesion)

- Untreated impetigo usually resolves within 2 to 4 weeks without scarring.

Ecthyma:

starts as a nonbullous impetigo but develops into a punched-out necrotic ulcer that heals slowly, leaving a scar (more deep)

Bullous impetigo:

- Small vesicles ➡ flaccid transparent bullae (1ry lesion)

- It heals without scarring

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the possible complications of impetigo

1. **Soft tissue infection (cellulitis & lymphangitis) ;** subsequent bacteraemia might result in osteomyelitis, septic arthritis or pneumonia

2.Staphylococcal scalded skin syndrome (SSSS); in infants under 6 months or adults with renal insufficiency , localised bullous impetigo due to specific staphylococcal serotypes can lead to a sick child with generalised SSSS.

3.Toxic shock syndrome (S.aureus) & Toxic shock like syndrome (S.pyogens): fever

erythematous then desquamating rash , hypotension and involvement of other organ

Complications

4.Post-streptococcal glomerulonephritis (S.pyogens) : 3_6 weeks after the skin infection. it is associated with anti-DNase and ASO antibodies

5-Rheumatic fever:

Group A streptococcal skin infections have moved to the throat

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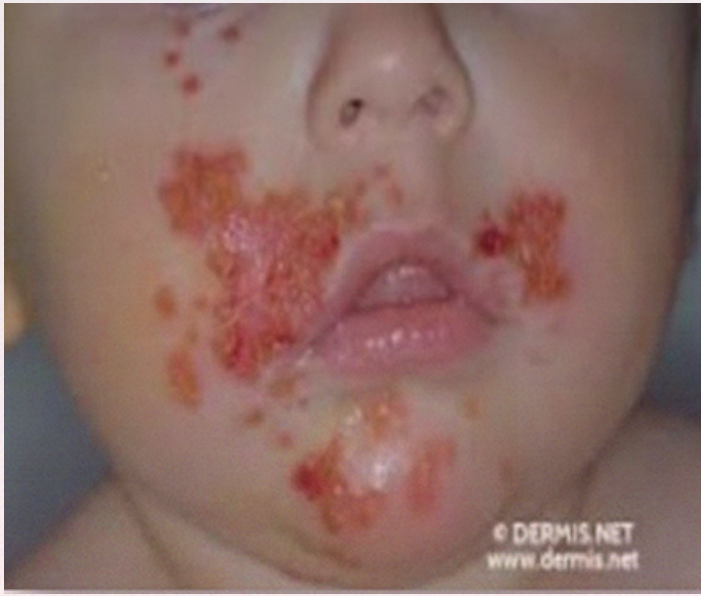
impetigo is usually diagnosed clinically but can be confirmed by bacterial swabs.

■ Management:

1.Cleanse the wound ; use moist soaks to remove crusts gently

2.Apply antiseptic 2-3 times daily for five days (hydrogen peroxide 1% cream, chlorhexidine)

3.Suitable oral antibiotics
+ Topical anti-biotics such as : bacitracin, mupirocin, retapamulin



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Oral anti-biotics are recommended if:

- **Symptoms are significant or severe (fever, malaise)**
- **There are more than three lesions**
- **There is a high risk of complications**
- **The infection is not resolving or is unlikely to resolve.**

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■To prevent recurrence:

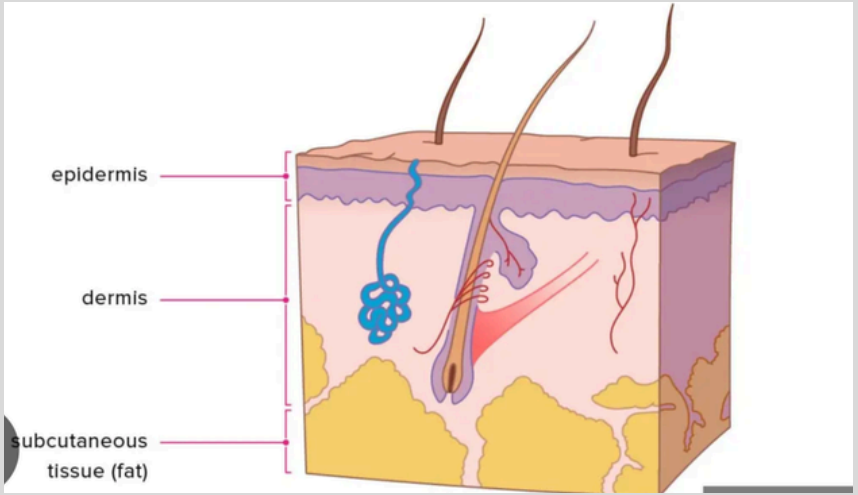
- Treat carrier sites: apply antiseptic ointment to nostrils
- Wash daily with anti-bacterial soap
- Cut nails and k eep hands clean
- Identify and treat the source of re-infection, usually another infected person or carrier in the household.
- Children must stay away from school until crusts have dried out or for 24 hours after starting oral antibiotics
- Use separate towels and flannels
- Change and launder clothes and linen daily.

CELLULITIS & ERYSIPELAS

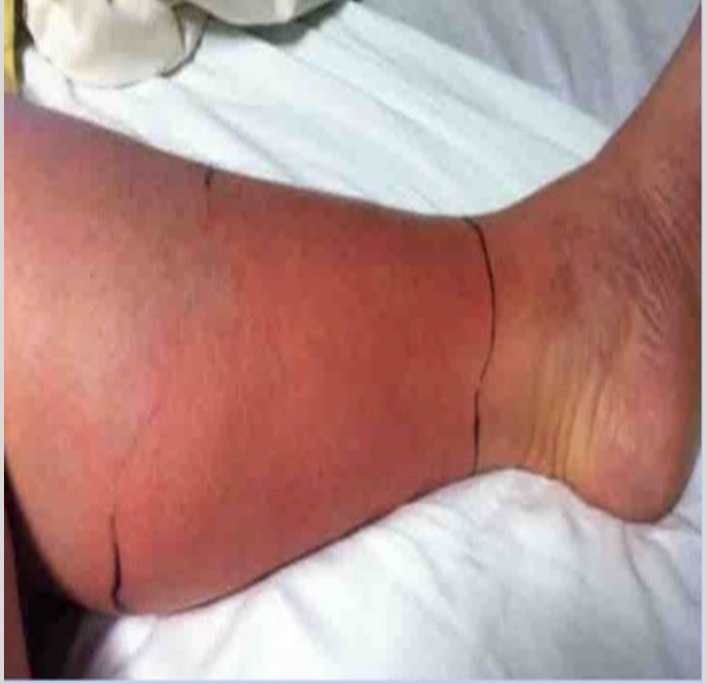
■ **Define**:

o **Erysipelas**: superficial skin infection involving the upper dermis

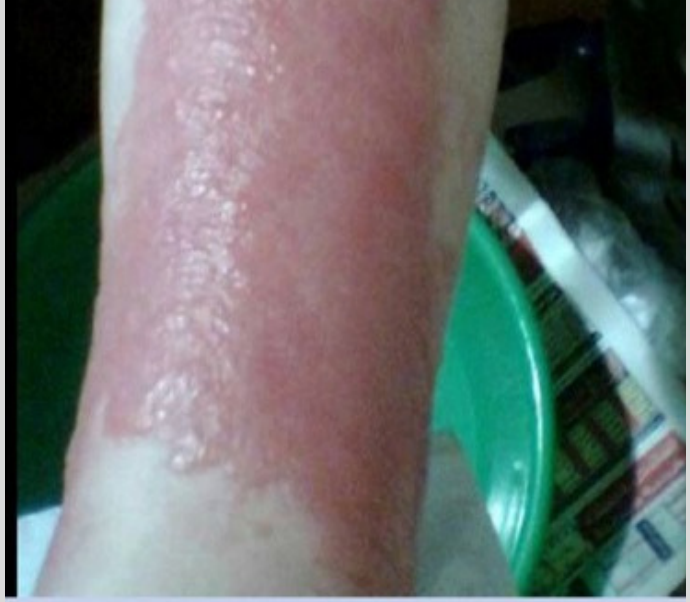
o **Cellulitis**:a common bacterial infection of the lower dermis and subcutaneous tissue.



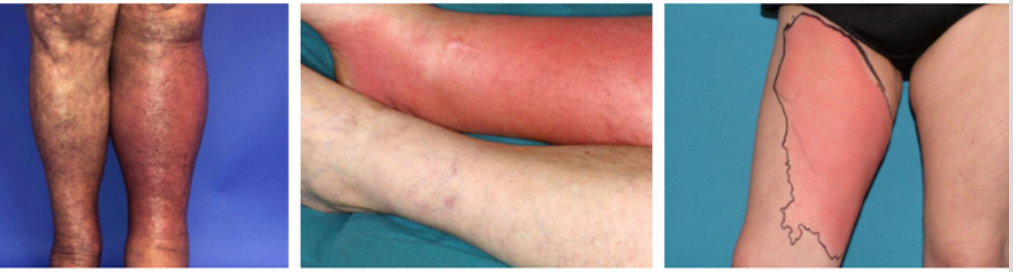
Cellulitis	Erysiples
Suppurative inflammation of lower dermis and SC tissue	Suppurative inflammation of upper dermis
Deeper infection	More superficial (btwn subcutaneous and dermis)
Without blisters	With blisters and visecles
Mainly by strept	Mainly by staph

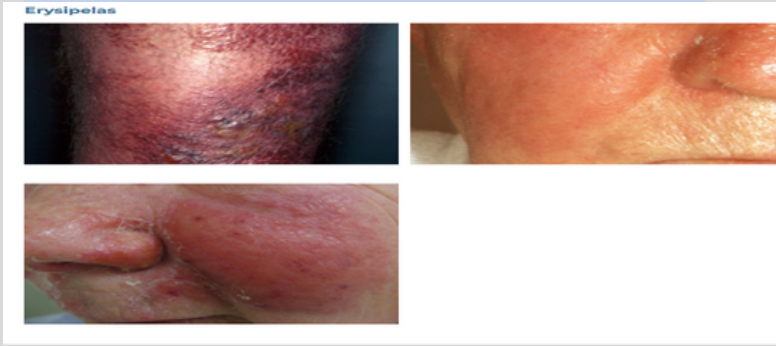


Cellulitis



Erysiples





CELLULITIS:

▪The most common bacteria causing cellulitis are **Streptococcus pyogenes** (two-thirds of cases) and **Staphylococcus aureus** (one third).

•It results in a localized area of red, painful, swollen skin, and systemic symptoms.

- •the most common site affected by cellulitis " **limbs and face It is usually unilateral.**"
- •It can occur by itself or complicate an underlying skin condition or wound.

CELLULITIS

- **The first sign of the illness is often feeling unwell, with fever, chills and shakes (rigors). This is due to bacteria in the bloodstream (bacteraemia).**

■Systemic symptoms are soon followed by the development of a localized area of painful, red , swollen skin.

■Similar symptoms are experienced with the more superficial infection, erysipelas, so cellulitis and erysipelas are often considered together.

CELLULITIS

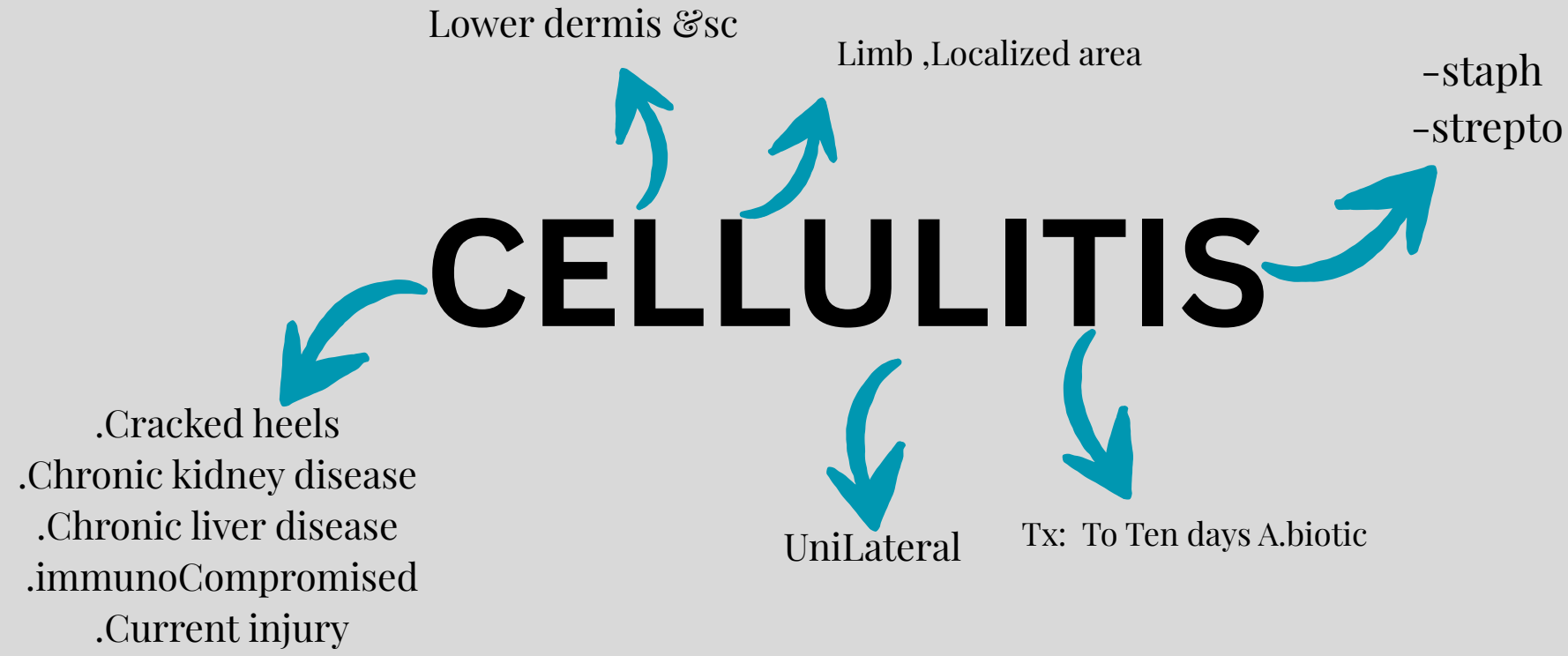
What are the factors that predispose to cellulitis ?

1.Previous episode(s) of cellulitis.
2.Fissuring of toes or heels, e.g., due to tinea pedia, cracked heels.
3.Current or prior injury, e.g., trauma, surgical wounds,
4.Venous disease e.g., lymphedema, gravitational eczema.
5.Immunodeficien
6.Immune suppressive medications.
7. Diabetes.
8.Chronic kidney disease.
9.Chronic liver disease.
10. Obesity.
11. Pregnancy.

CELLULITIS

- patients can be treated with oral antibiotics at home, for a minimum of 5–10 days. In some cases, antibiotics are continued until all signs of infection have cleared (redness, pain and swelling), sometimes for several months.

•Treatment should also include:Analgesia to reduce pain, Adequate water/fluid intake. Management of co-existing skin conditions like eczema or tinea pedis.


Lower dermis &sc
Limb ,Localized area
-staph
-strepto
CELLULITIS
.Cracked heels
.Chronic kidney disease
.Chronic liver disease
.immunoCompromised
.Current injury
UniLateral
Tx: To Ten days A.biotic

ERYTHRASMA

- Erythrasma is a common skin condition affecting the skin folds under the arms, in the groin and between the toes.

- Erythrasma affects males and females, but it is thought to be more common in the groin of males and between the toes of females.

- causative agent: **CORYNEBACTERIUM MINUTISSIMUM****

- LESION DESCRIPTION: ERYTHRASMA PRESENTS AS WELL-DEFINED PINK OR BROWN PATCHES WITH FINE SCALING AND SUPERFICIAL FISSURES. MILD ITCHING MAY BE PRESENT.

■IS MORE PREVALENT IN THE FOLLOWING CIRCUMSTANCES:

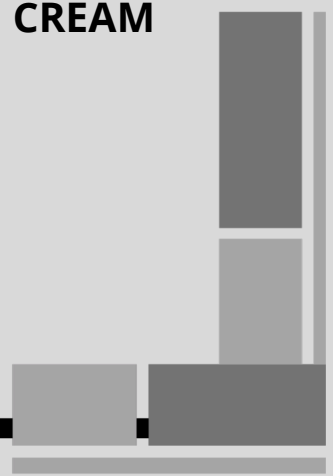
1.WARM CLIMATE
2.EXCESSIVE SWEATING
3. DIABETES
4. OBESITY
5.POOR HYGIENE
6.ADVANCED AGE
7.OTHER IMMUNOCOMPROMISED STATES ** WIDESPREAD INFECTIONS ARE MOST OFTEN ASSOCIATED WITH DIABETES

■ERYTHRASMA IS USUALLY SELF-LIMITING. BUT IT CAN BE COMPLICATED BY: CONTACT DERMATITIS, LICHENIFICATION, POST INFLAMMATORY HYPERPIGMENTATION, AND COINFECTION WITH OTHER YEAST AND BACTERIA

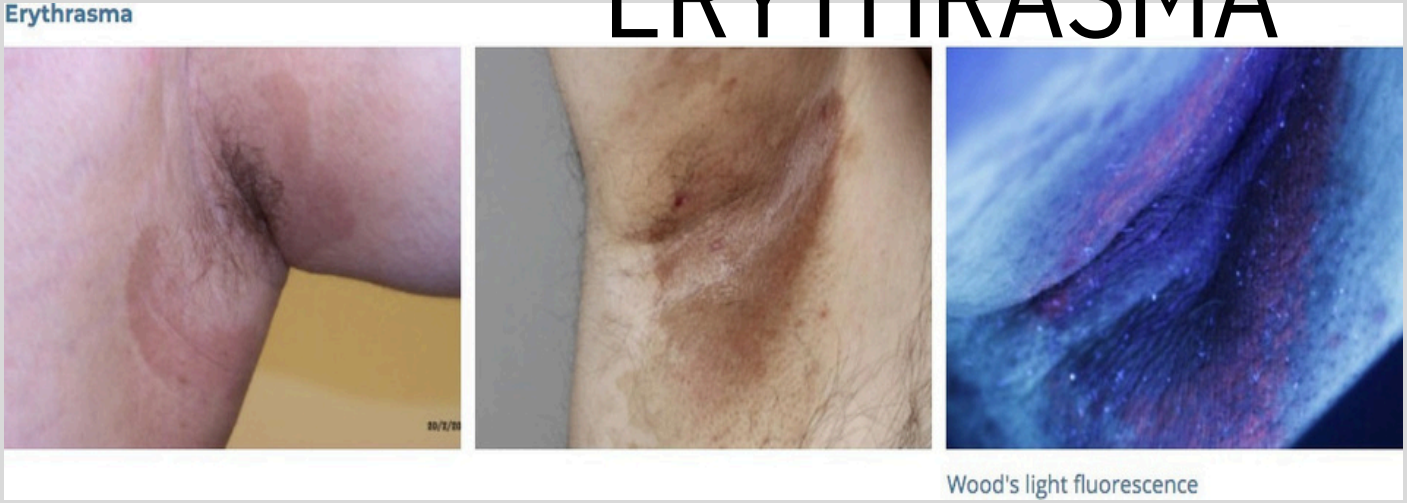
•**Diagnosis** may be supported by **wood lamp skin examination** (fluoresce a **coral-pink colour** due to **coproporphyrin III** released by the bacteria).
The fluorescence is not seen if the skin has recently been washed because the responsible porphyrin is water soluble.

■ **TREATMENT**: ANTISEPTIC OR TOPICAL ANTIBIOTIC SUCH AS **FUCIDIC ACID CREAM ,CLINDAMYCIN SOLUTION,ERYTHROMYCIN CREAMS**

** EXTENSIVE INFECTION CAN BE TREATED WITH ORAL ANTIBIOTIC AND USUALLY RESPONDS PROMPTLY



ERYTHRASMA



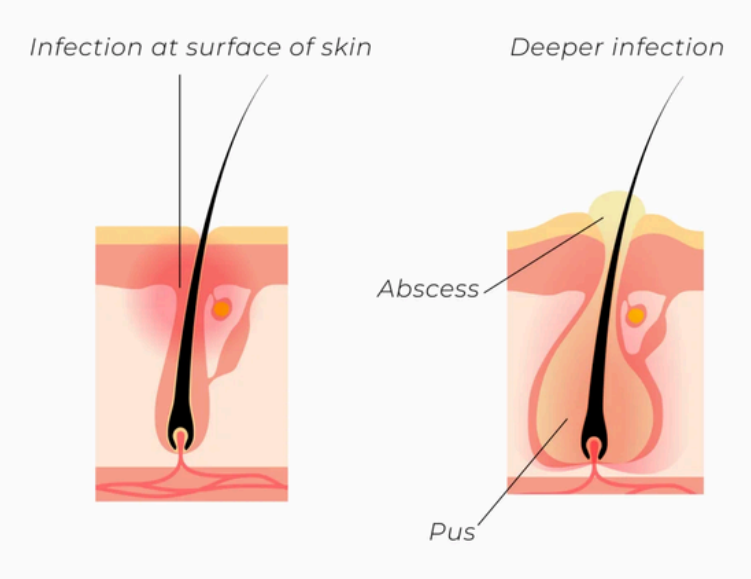
FOLLICULITIS

folliculitis is the name given to a group of skin conditions in which there are inflamed hair follicles. **the result is a tender red spot, often with a surface pustule**

folliculitis may be **superficial or deep**. it can affect anywhere there are hairs, including chest, back, buttocks, arms and legs.

folliculitis can be due to infection, occlusion (blockage), irritation and various skin diseases.

folliculitis is inflammation of the hair follicle due to infection, chemical irritation or physical injury.



FOLLICULITIS

the most common type of folliculitis is bacterial folliculitis

the causative agent of bacterial folliculitis is most common due to s.aureus and less often due to coagulase-negative staphylococci and gram negative organisms including anaerobes . **spa pool folliculitis is caused by pseudomonas**

folliculitis is most common in which demographic ?
oadolescents and young adult males most often infected

what are the factors that predispose to folliculitis ?

1. maceration and occlusion (clothing, dressings, ointments, casts of broken bones)

2. frequent shaving, waxing or other forms of depilation

3. friction from tight clothing (physical folliculitis)

4. atopic eczema

5. use of topical steroids

6. previous long-term use of antibiotics

7. chronic illness that leads to recurrent furunculosis

❖superficial folliculitis

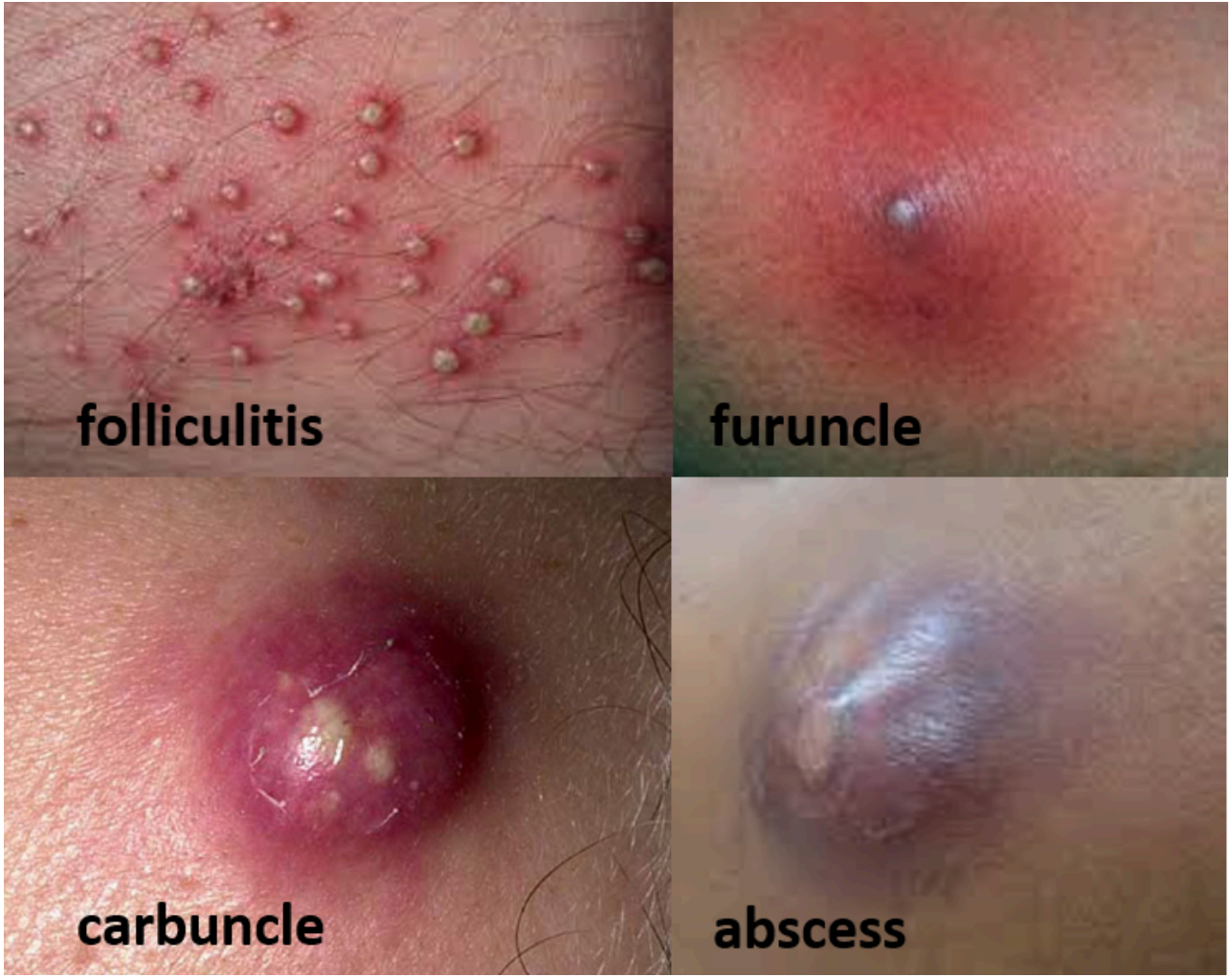
superficial staphylococcal folliculitis presents with one or more follicular pustules.
they may be itchy or mildly sore.
superficial folliculitis heals without scarring.

❖furunculosis/boils

presents as one or more painful, hot, firm or fluctuant, red nodules or walledoff abscesses (collections of pus).

❖carbuncle

is the name used when a focus of infection involves several follicles and has multiple draining sinuses, usually diabetic patients. ocausative agent: s.aureus
recovery leaves a scar.


folliculitis
furuncle
carbuncle
abscess

❖gram-negative folliculitis develops in individuals using long term antibiotics (doxycycline) for acne

❖hot tub folliculitis it settles without treatment within about 10 days without scarring

❖pseudofollicultis hair re-entry after shaving

❖ bacterial folliculitis can lead to cellulitis, erysipelas and lymphangitis; subsequent bacteremia might result in osteomyelitis, septic arthritis or pneumonia

❖how is folliculitis diagnosed ? clinically

FOLLICULITIS – TREATMENT

1.warm compresses to relieve itch and pain.

2. analgesics and anti-inflammatories to relieve pain

3. antiseptic cleansers (e.g., hydrogen peroxide, chlorhexidine, triclosan).

4. incision and drainage of fluctuant lesions.

5.topical antibiotics such as erythromycin, mupirocin, fucidic acid.

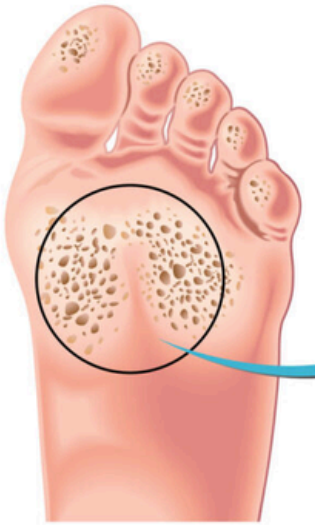
6. oral or intravenous antibiotics for more extensive or severe infections.

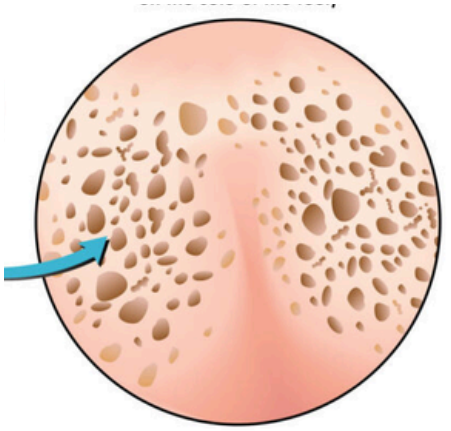
PITTED KERATOLYSIS

❖pitted keratolysis is a descriptive title for a superficial bacterial skin infection that affects the soles of the feet, and less often, the palms of the hands.

❖it is one of the causes of smelly feet. the bad smell is due to sulfur compounds produced by the bacteria

❖lesion description :
**whitish skin and clusters of punched-out pits
**the pitting is due to destruction of the horny cells (stratum corneum) by protease enzymes produced by the bacteria.





❖causative agents:
corynebacteria, dermatophilus congolensis, kytococcus sedentarius, actinomyces and streptomyces

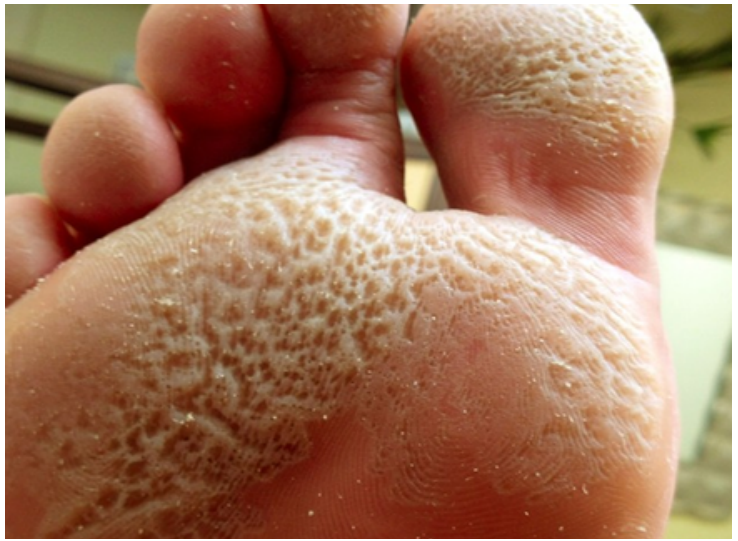
❖much more common in males than in females

❖factors that lead to the development of pitted keratolysis include:
(hot, humid weather, occlusive footwear, excessive sweating of hands and feet, thickened skin of palms and soles, diabetes, advanced age)

❖pitted keratolysis is usually diagnosed clinically.

❖❖appearance on woods light :
coral- red color fluorescence in some cases

❖❖treatment: topical antiseptics and antibiotics :
(erythromycin + clindamycin)



Disease :	Impetigo	cellulitis	Folliculitis	Erythrasma	Pitted keratolysis
Characterized :	Pustule and honey-colored crusted erosion .	localized area of red, painful, swollen skin, and systemic sym ptoms.	a tender red spot, often with a surface pustule.	well-defined pink or brown patches with fine scaling and superficial fissure	whitish skin and clusters of punched-out pits.
Organism :	Staphylococcus aureus and streptococcus pyogen	Streptococcus pyogen	Staphylococcus aureus	*Corynebacterium minutissimum*.	corynebacteria, *D ermatophilus congolensis*
Types :	Nonbollus Bollus ecthyma	Cellulitis vs erysipelas	Superficial Furuncle carbuncle		
Predisposing factors :	Atopic eczema Scabies Skin trauma	DM Pregnancy Obesity	DM Obesity Frequent shaving	DM Obesity Poor hygine	Hot, humid weath er, DM
Treatment :	Topical Ab. Oral Ab.	Oral Ab.	Topical Ab. Oral Ab.	Topical Ab Oral Ab.	Topical Ab.

Thank You