Common Bacterial Infections

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Common bacterial infections includes:

- Impetigo and Ecthyma
- Cellulitis and Erysipelas
- Folliculitis
- Erythrasma
- Pitted keratolysis.

IMPETIGO:DEFINITION

- Impetigo is a highly contagious acute superficial bacterial skin infection (pyoderma) that primarily affects children, but can also occur in adults with low immunity.
- The clinical presentation of impetigo is characterized by the development of red, itchy sores that quickly turn into honey-colored crusts..
- The most common causative agents are Staphylococcus aureus and Streptococcus pyogenes(non-bullous).
- The term impetiginisation is used for superficial secondary infection of a wound or other skin condition.
- Ulcerated impetigo is called ecthyma.

CLASSIFICATION and SCARRING

- 1- nonbullous impetigo: staphylococci and streptococci invade a site of minor trauma where exposed proteins allow the bacteria to adhere , starts as a pink macule that evolves into a vesicle or pustule and then into crusted erosions ,Untreated impetigo usually resolves within 2 to 4 weeks without scarring.

- 2- Ecthyma: is usually due to *Streptococcus pyogenes*, but co-infection with *Staphylococcus aureus* may occur ,starts as nonbullous impetigo but develops into a punched-out necrotic ulcer that heals slowly, starts as nonbullous impetigo but develops into a punched-out necrotic ulcer that heals slowly leaving a scar.
- 3- 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. No trauma is required, as the bacteria can infect intact skin. presents with small vesicles that evolve into flaccid transparent bullae,it heals without leaving scaring.

EPIDEMIOLOGY

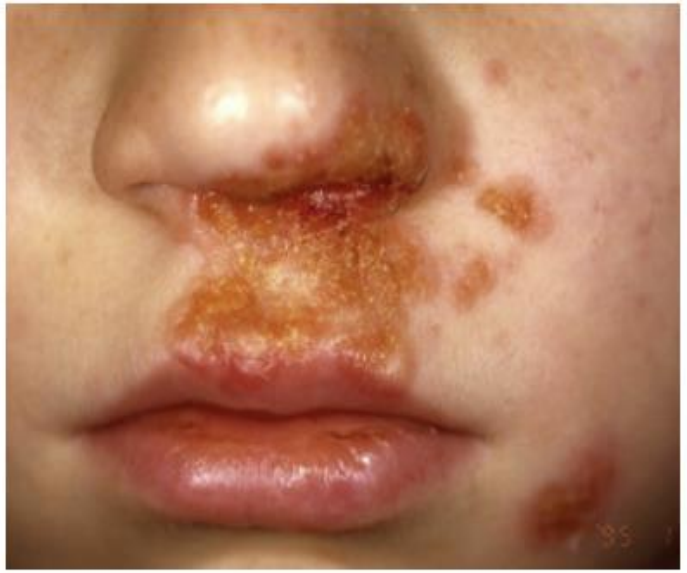
- most common incidence in children (especially boys), but may also affect adults if they have low immunity to the bacteria.
- It is prevalent worldwide.
- Peak onset is during summer, and it is more prevalent in developing countries.

PREDISPOSIING FACTORS

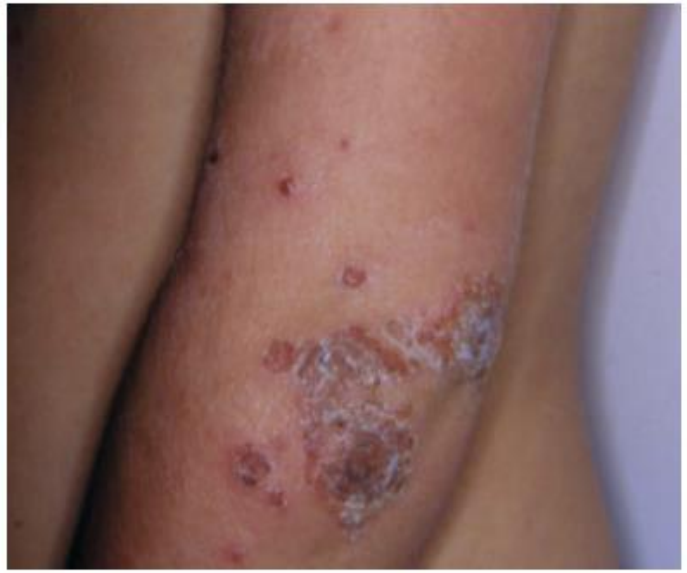
- 1-Atopic eczema
- 2-Scabies
- 3-Skin trauma: chickenpox, insect bite, abrasion, laceration, thermal burn, dermatitis, surgical wound

pictures

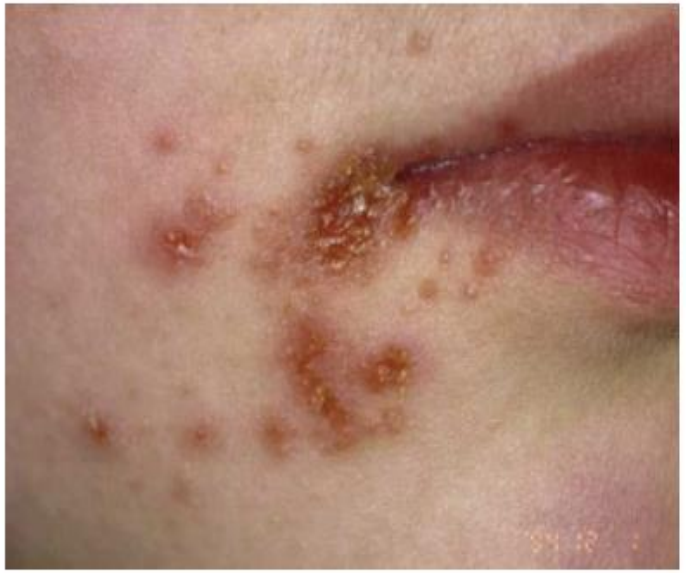
Impetigo



Impetigo



Impetigo



Impetigo

COMPLICATIONS

1. Soft tissue infection

The bacteria causing impetigo can become invasive, leading to cellulitis and lymphangitis; subsequent bacteraemia might result in osteomyelitis, septic arthritis or pneumonia.

2. Staphylococcal scalded skin syndrome

In infants under six years of age or adults with renal insufficiency, localised bullous impetigo due to specific staphylococcal serotypes can lead to a sick child with generalized staphylococcal scalded skin syndrome (SSSS). Superficial crusting then tender cutaneous denudation on the face, in flexures, and elsewhere is d to circulating exfoliatin/epidermolysin, rather than a direct skin infection. It does not scar.

3. Toxic shock syndrome

Toxic shock syndrome is rare and rarely preceded by impetigo. It causes fever, diffuse erythematous then desquamating rash, hypotension and involvement of other organs.

4. Post-streptococcal glomerulonephritis Group A streptococcal infection may rarely lead to acute post-streptococcal glomerulonephritis 3–6 weeks after the skin infection. It is associated with anti-DNase B and antistreptolysin O (ASO) antibodies.

5. Rheumatic fever Group A streptococcal skin infections have rarely been linked to cases of rheumatic fev and rheumatic heart disease. It is thought that this occurs because strains of group A streptococci usually found on the skin have moved to the throat (the more usual site for rheumatic fever-associated infection).

DIAGNOSIS

- Impetigo usually diagnosed clinically that show up as honey-colored scabs. Follow-up with bacterial swabs (swab of the liquid produced by the sores) can be taken for microscopy, culture and sensitivity.
- A complete blood count can indicate a high count of white blood cells(neutrophil.l leucocytosis) that fight infection when impetigo is present.

TREATEMENT

The following steps are used to treat impetigo:

- Before applying the medicine, soak the area in warm water or apply a wet cloth compress for a few minutes. Then pat dry and gently remove any scabs so the antibiotic can get into the skin. Place a nonstick bandage over the area to help prevent the sores from spreading.
- Apply antiseptic 2–3 times daily for five days (povidone-iodine, hydrogen peroxide 1% cream, chlorhexidine, superoxidised solution and others).
- Oral anti-biotics are recommended if:

  1-Symptoms are significant or severe (fever, malaise)

  2-There are more than three lesions

  3-There is a high risk of complications

  4-The infection is not resolving or is unlikely to resolve.
- Suitable oral antibiotics Topical anti-biotics

PREVENTION of getting impetigo again

- 1-Treat wounds right away. If you (or your child) get a cut, scrape, insect bite, or any other wound, immediately wash it with soap and water. Then apply an antibiotic ointment and a bandage.

- 2-Bath or shower after every sports workout, practice, and competition. Be sure to use a cleanser or soap and a clean towel to dry off.

- 3-Wash your hands after using the toilet and when they get dirty. Again, you want to use soap. You also want to use a clean towel or paper towel to dry your hands.

- 4-Stop sharing personal items like sports equipment, towels, and clothes. These can spread impetigo.

- 5-If someone has impetigo:

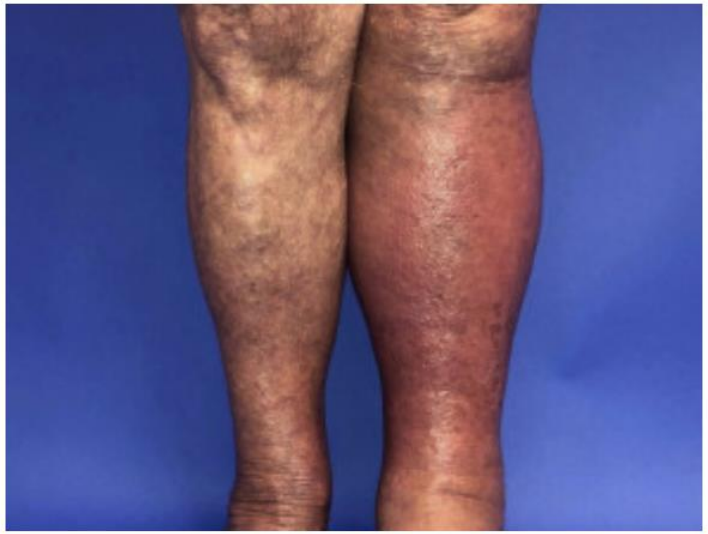
- Avoid touching the person's skin.
- Avoid touching everything that person has touched, including towels, sheets, toys, and sporting equipment.
- Wear clean clothes. Avoid pulling dirty clothes out of the laundry hamper, especially dirty workout clothes.

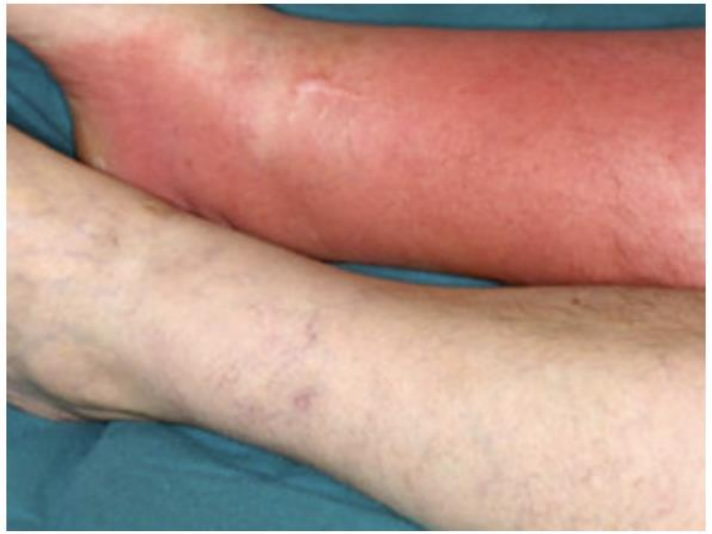
CELLULITIS:DEFINITION

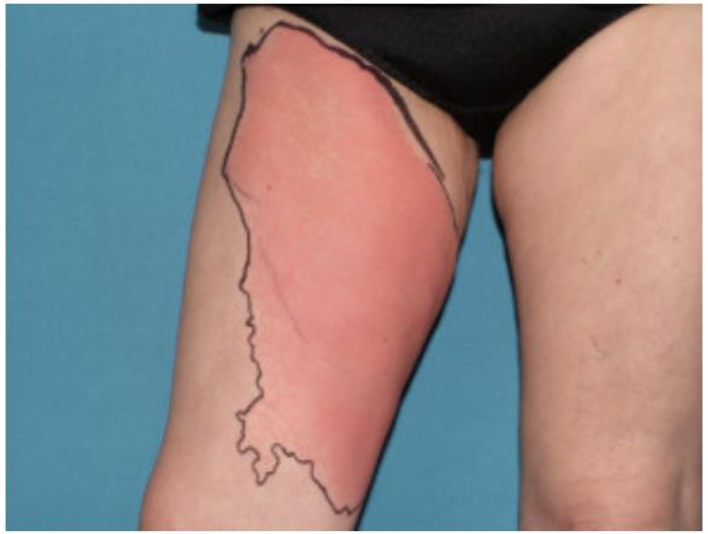
- Cellulitis An acute, spreading common bacterial infection of the deep tissues (lower dermis and SC tissue)
- that causes the skin to become warm and tender and may also cause fever, chills, swollen lymph nodes, and blisters.
- Similar symptoms are experienced with the more superficial infection, erysipelas, so cellulitis and erysipelas are often considered together.
- The most common bacteria that cause cellulitis is streptococcus pyogens

PICTURES

Cellulitis



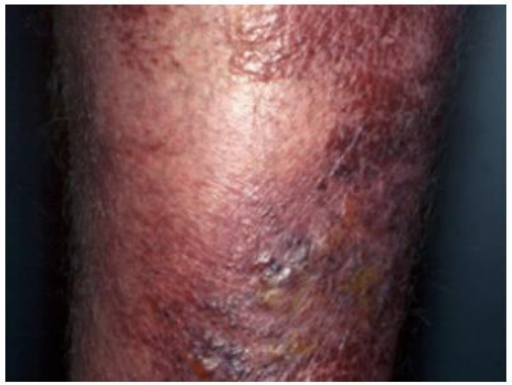
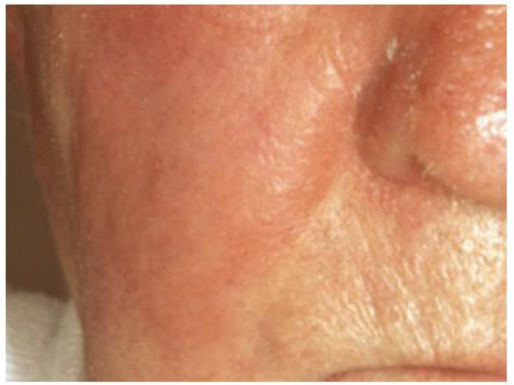
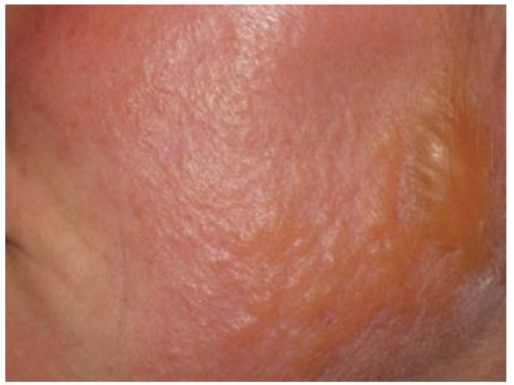
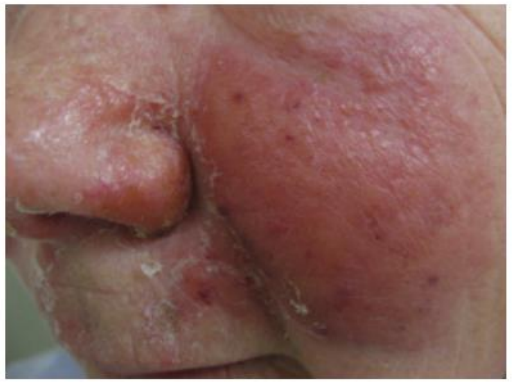




Cellulitis of the left leg

PICTURES

Erysipelas

predisposing factors

Cellulitis affects people of all ages and races. Predispositions to cellulitis include:

- Previous episode(s) of cellulitis
- Fissuring of toes or heels, eg due to tinea pedia, cracked heels.
- Venous disease, eg lymphodema, gravitational eczema,
- Current or prior injury, eg trauma, surgical wounds,
- Immunodeficiency,
- Immune suppressive medications
- Diabetes
- Chronic kidney disease
- Chronic liver disease
- Obesity
- pregnancy

clinical presentation

- Cellulitis can affect any site, most often a limb
- It is usually unilateral; a bilateral disease is more often due to another condition
- It can occur by itself or complicate an underlying skin condition or wound.
- The first sign of the illness is often feeling unwell, with fever, chills and shakes (rigors). This is due to bacteraemia.
- Systemic symptoms are soon followed by the development of a localized area of painful, red, swollen skin.
- Other signs include:
- Dimpled skin (peau d’orange), Warmth, Blistering, Erosions and ulceration, Abscess formation, petechiae, ecchymoses, or haemorrhagic bullae.

treatement

- if there are no signs of systemic illness or extensive 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.

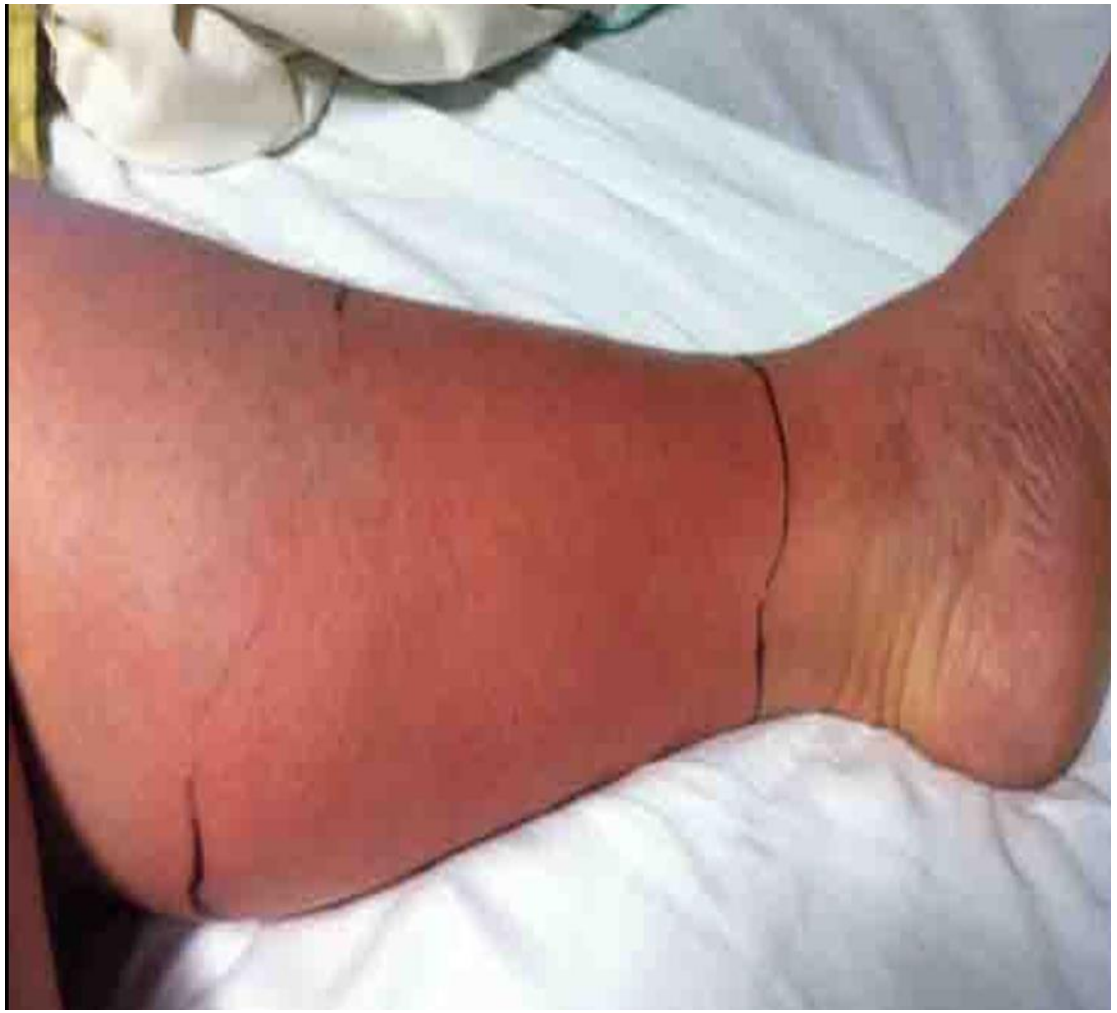
prevention

1-Use good personal hygiene.
2-Wash hands often.
3-Apply lotion to dry, cracked skin.
4-Use gloves when cuts and scrapes may happen.
5-Wear protective footwear.

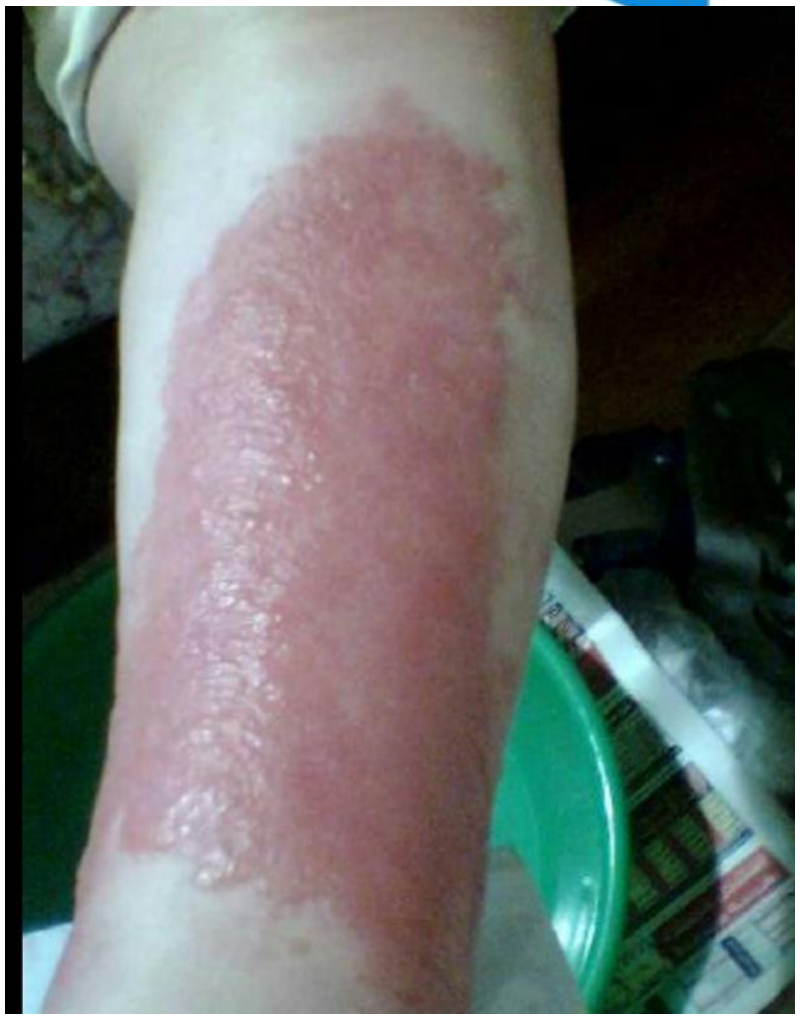
diffrences

erysipelas	cellulitis
Caused by strep.pyogenes	Caused by strep.pyogenes and rarely by staph.aureus.
Involves upper subcutaneous tissue and lymphatic vessels	Involves deeper subcutaneous tissue
History antecedent throat infection	An intertrigo or deep fissures(definite portal of entry)
Common site: face with bridge of nose and cheeks	Common site: legs
Well defined margins(peau d orange appearance)	Indistinct margins
vesicle or bulla formation	bulla formation in severe
Self limiting	If untreated necrosis can supervene

pictures



Cellulitis



Erysiples

Folliculitis:DEFINITION and CAUSES

- Folliculitis is the inflammation of hair follicles due to an infection, injury, or irritation. It is characterized by tender, swollen areas that form around hair follicles, 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. Bacterial folliculitis is the most common form of folliculitis.
- Bacterial folliculitis is usually due to *Staphylococcus aureus*. Less often, coagulase-negative staphylococci and gram-negative organisms are responsible including anaerobes. Sap pool folliculitis is caused by Pseudomonas.

- **. Gram-negative folliculitis**

develops in individuals using long term antibiotics for acne. The infection with Gram-negative organisms causes pustules in acne sites of the face, neck and upper trunk.

- **. Hot tub folliculitis**

presents with painful papules and pustules on the trunk some hours after soaking in hot water, mainly in sites that were covered by bathing costume. It may be accompanied by mild systemic symptoms including fever. Untreated, it settles within about 10 days without scarring.

predisposing factors

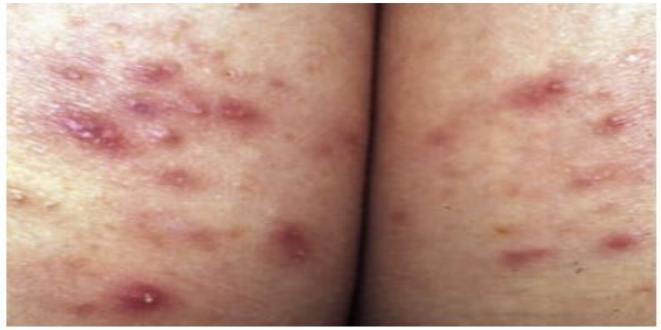
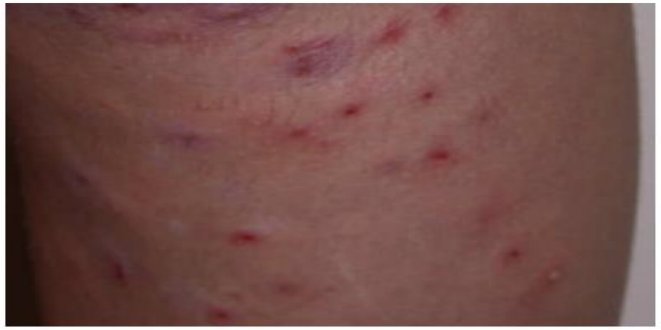
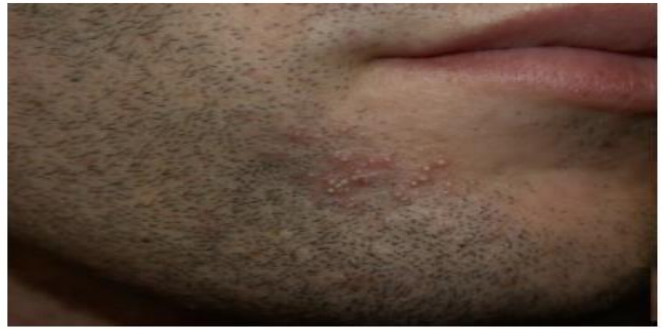
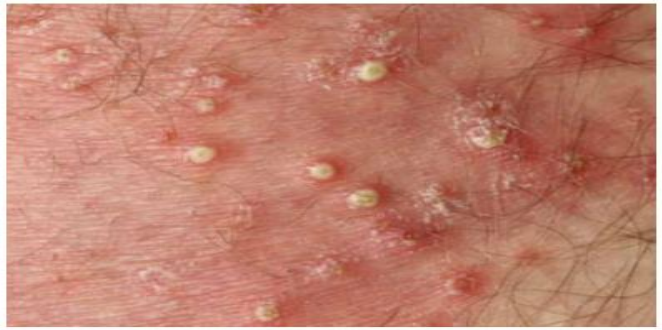
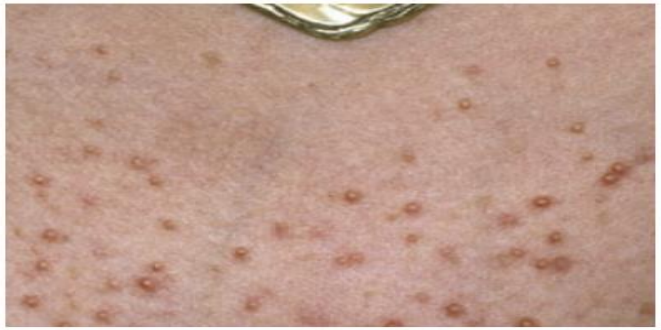
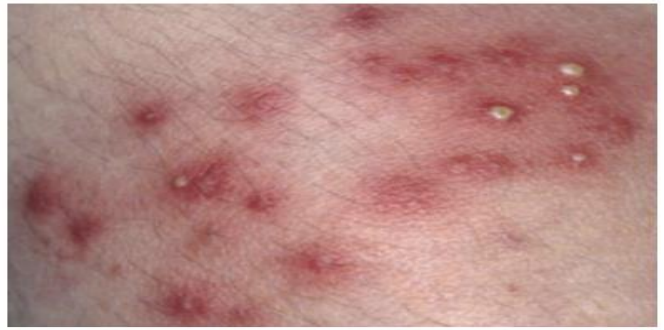
- Bacterial folliculitis affects children and adults, with adolescents and young adult males most often infected. It is prevalent worldwide.

➢ predisposing factors of bacterial folliculitis:

- Maceration and occlusion (clothing, dressings, ointments)
- Frequent shaving, waxing or other forms of depilation
- Friction from tight clothing
- Atopic eczema
- Use of topical steroids
- Previous long-term use of antibiotics
- Anaemia, diabetes, obesity, (HIV)/AIDS, cancer and other chronic illness

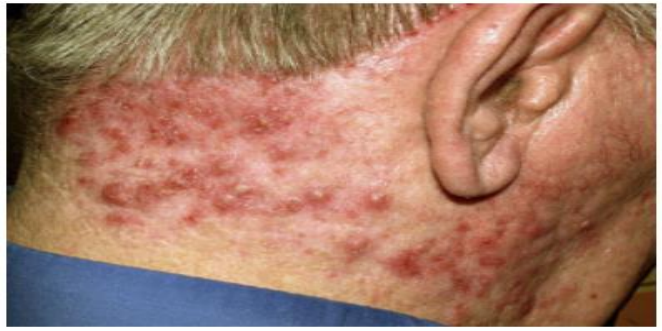
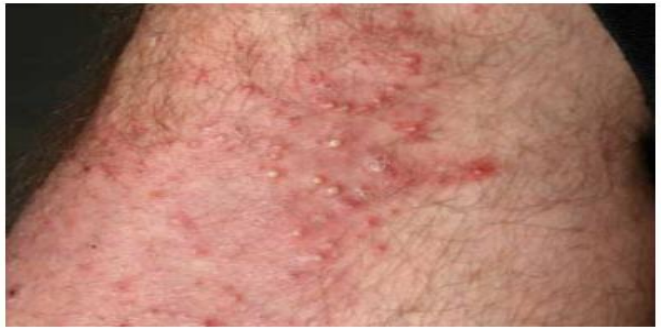
pictures

Folliculitis

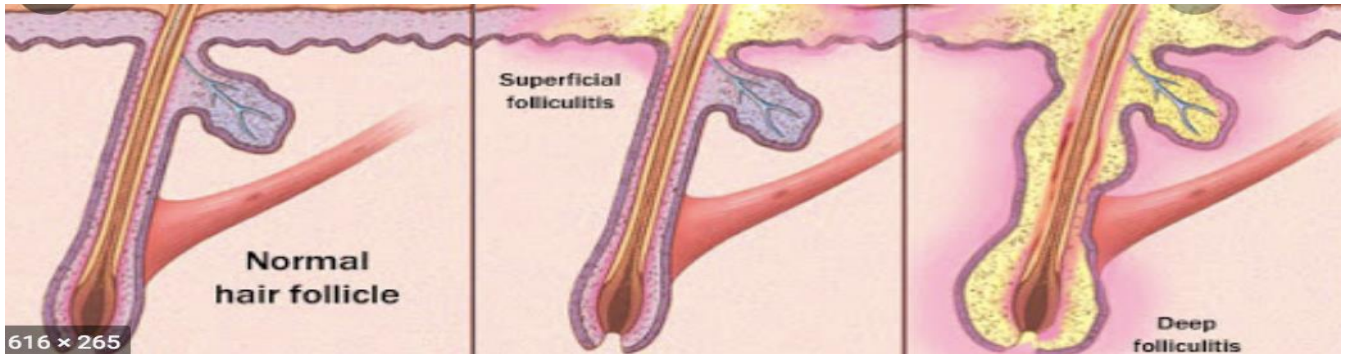
Superficial bacterial folliculitis

Superficial bacterial folliculitis

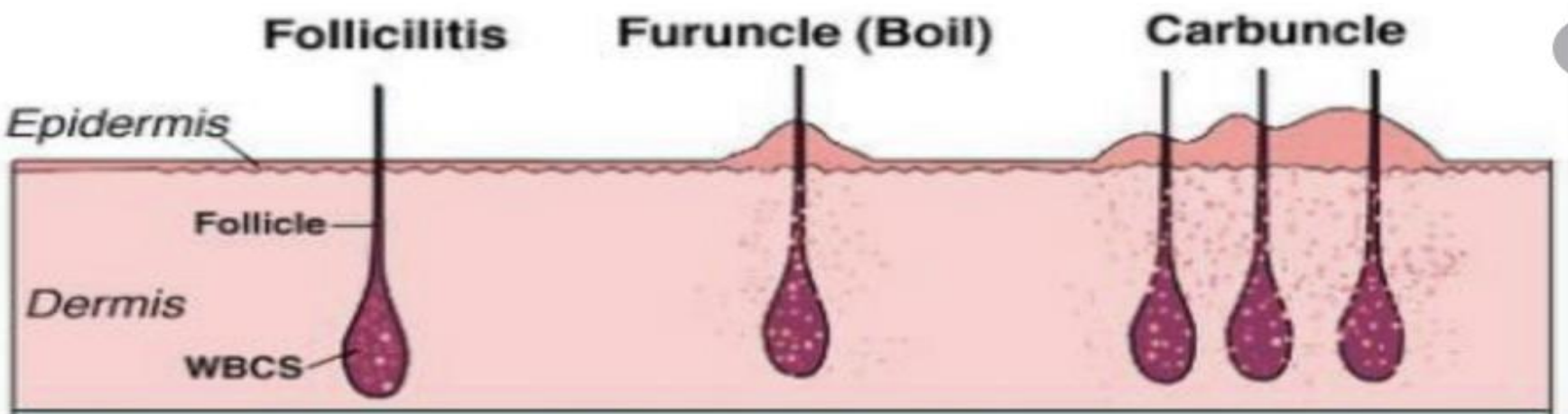
Folliculitis

- Bacterial folliculitis may be superficial or involve the whole hair follicle (a boil). It may arise on any body site but is most often diagnosed in the scalp, beard area, axilla, buttocks and extremities.
- Systemic symptoms are uncommon.



complications and diagnosis

- Bacterial folliculitis can lead to cellulitis and lymphangitis; subsequent bacteremia might result in osteomyelitis, septic arthritis or pneumonia.
- Bacterial folliculitis is usually diagnosed clinically but can be confirmed by bacterial swabs sent for microscopy, culture and sensitivity.
- Blood count may reveal neutrophil leukocytosis when folliculitis is widespread.



Folliculitis	Furuncle (Boil)	Carbuncle
1mm perifollicular red papule or pustule	About 1cm tender red papule or fluctuant nodule	Several cm diam red plaque
Areas of sweat & abrasion	Areas of sweat & abrasion	Nape of neck
Rx: Tetracycline or erythromycin 500 mg 2x/day	1. Incise & curettage. 2. Dicloxicillin 250mg 4x/d for 10 days, or Augmentin 500mg 2x/day for 10+ days	1. Incise and curettage or excise 2. Dicloxicillin 250mg 4x/day for 10+ days or rampin 300mg 2x/day for 10+ days (Orange body fluids)

452 × 399

types of folliculitis

1. Superficial folliculitis

- Superficial staphylococcal folliculitis presents with one or more follicular pustules. They may be itchy or mildly sore. Superficial folliculitis heals without scarring.
- A hordeolum or stye is bacterial folliculitis affecting an eyelash.

2. Furunculosis/boils

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

3. **A carbuncl**e

is the name used when a focus of infection involves several follicles and has multiple draining sinuses.

Recovery leaves a scar.

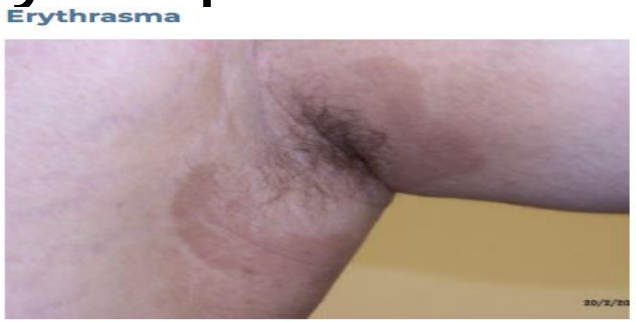
treatement

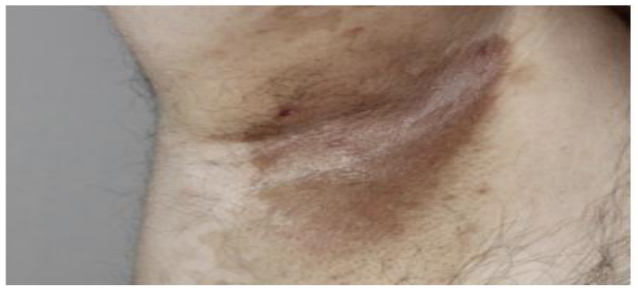
The treatment for bacterial folliculitis?

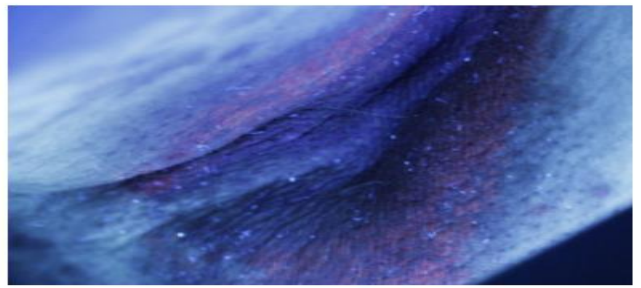
- Warm compresses to relieve itch and pain
- Analgesics and anti-inflammatories to relieve pain
- Antiseptic cleansers (eg, hydrogen peroxide, chlorhexidine, triclosan)
- Incision and drainage of fluctuant lesions
- Topical antibiotics such as erythromycin, mupirocin, Fucidic acid.
- Oral or intravenous antibiotics for more extensive or severe infections

Erythrasma :definition

- 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.
- Erythrasma presents as well-defined pink or brown patches with fine scaling and superficial fissures. Mild itching may be present.







Wood's light fluorescence

- The bacteria responsible for erythrasma are gram-positive, non-spore-forming, aerobic or facultative bacilli called *Corynebacterium minutissimum*.
- Erythrasma may coexist with or be confused with other causes of intertrigo including fungal infection such as tinea candida albicans.
- The common sites for erythrasma are armpits, groin and between the toes. The intergluteal fold, submammary, and periumbilical skin may also be affected. Widespread infections are most often associated with diabetes mellitus.

predisposing factors

- It is reported to be more prevalent in the following circumstances:

➢ Warm climate
➢ Excessive sweating
➢ Diabetes
➢ Obesity
➢ Poor hygiene
➢ Advanced age
➢ Other immunocompromised states.

complications and diagnosis

- Erythrasma is usually self-limiting. It can be complicated by contact dermatitis, lichenification, post inflammatory hyperpigmentation , and coinfection with other yeast and bacteria.
- Serious complications are very rare.
- Erythrasma has a typical clinical appearance.
- 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.

treatement

- Erythrasma can be treated with antiseptic or topical antibiotic such as fucidic acid creams, clindamycin solution, erythromycin creams.
- Extensive infection can be treated with oral antibiotic and usually responds promptly.

prevention

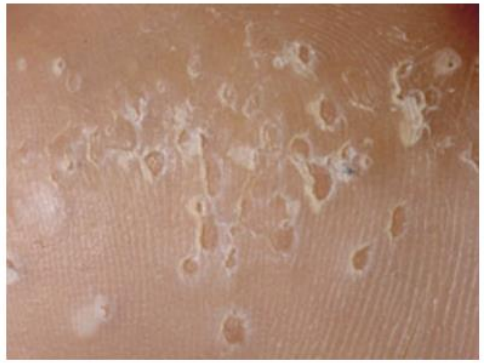
- Recurrence of erythrasma is common. Antibacterial soap can be used to prevent recurrence. Treatment can be repeated if necessary.

Pitted keratolysis: definition

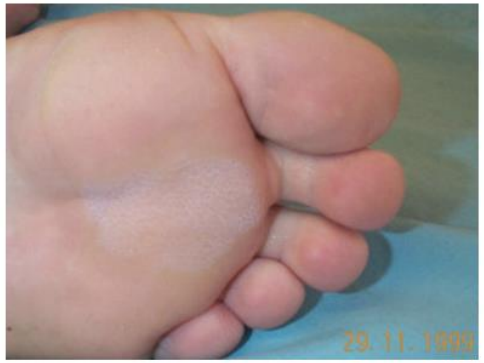
- Pitted keratolysis is a descriptive title for a superficial bacterial skin infection characterised by crater-like pits and malodour.
- It typically affects pressure-bearing areas on the soles of the feet, although the palms are rarely affected..
- It is one of the causes of smelly feet.
- It is characterized by whitish skin and clusters of punched-out pits.

pictures

Pitted keratolysis



Pitted keratolysis



Pitted keratolysis

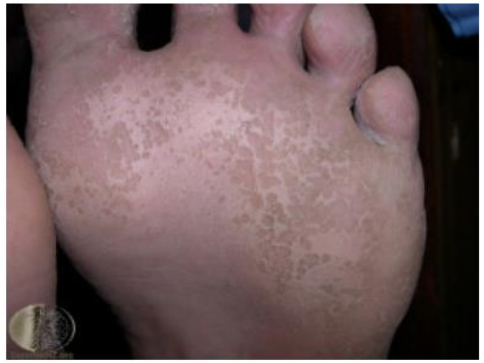
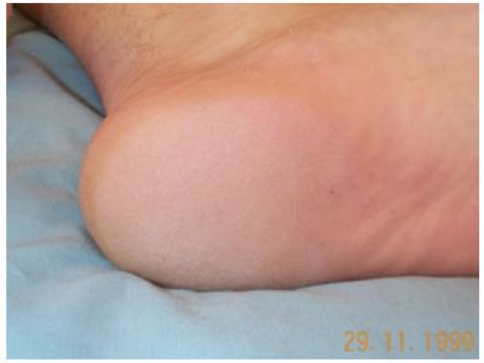
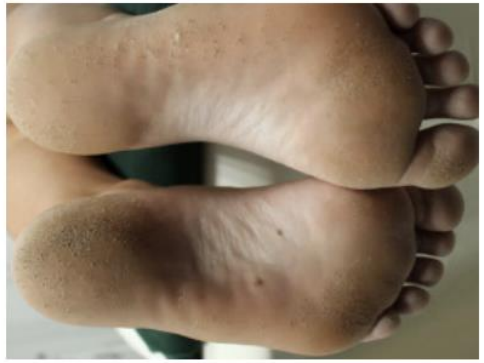


Image provided by Dr S Janjua



Pitted keratolysis

Pitted keratolysis



Pitted keratolysis

- Pitted keratolysis is caused by several bacterial species, including corynebacteria, *Dermatophilus congolensis*, *Kytococcus sedentarius*, actinomyces and streptomyces.
- The bacteria proliferate in moist conditions.
  The pitting is due to destruction of the horny cells (stratum corneum) by protease enzymes produced by the bacteria.
- The bad smell is due to sulfur compounds produced by the bacteria: thiols, sulfides and thioesters.

- Pitted keratolysis is much more common in males than in females.
- Occupations at risk include: (Athletes, Sailors or fishermen, Industrial workers, Military personnel , Females offering pedicure and foot care in a spa salon may also be affected by pitted keratolysis).

- 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. Swabs are rarely required.
- Wood light examination displays a characteristic coral red fluorescence in some cases.
- Pitted keratolysis can be successfully treated with topical antibiotics and antiseptics


اللهم ألطف بإخواننا
المسلمين المستضعفين
في فلسطين
اللهم كن لهم مؤيداً ونصيراً ومعيناً وظهيراً
اللهم اجعل لهم من كل هم فرجاً
ومن كل ضيق مخرجاً ومن كل بلاء عافية