Bacterial skin infections

Impetigo contagiosa

Impetigo is a common contagious superficial skin infection. There are two different clinical forms: bullous impetigo and non-bullous impetigo. Both begin as vesicles with a very thin fragile roof consisting only of stratum corneum. The lesions are generally asymptomatic. Bullous impetigo is caused by *Staphylococcus aureus*. Non-bullous impetigo in majority is caused by *Staphylococcus aureus* but occasionally caused by group A beta hemolytic *streptococci*. Children in close physical contact with each other have a higher rate of infection than do adults.

Bullous impetigo is most common in infants and children but may occur in adults. The common site of involvement is the face but may infect anybody surface. One or more vesicles enlarge rapidly to form bullae. Then the center of the thin roofed bulla collapses to form a thin flat honey-yellow colored crust appear in the center.

Non-bullous impetigo the small vesicle or pustule ruptures to expose a red moist base (erosion). A honey-yellow to white-brown firmly adherent crust accumulates as the lesions extend radially. The skin around the nose and mouth and the limbs are the sites most commonly affected. Children aged 2-5 years commonly have streptococcal impetigo.

The complications of impetigo:

1. Post-streptococcal glomerulonephritis usually develops 1-3 weeks following acute infection with specific nephritogenic strains of group A beta hemolytic streptococci.
2. Lymphadenitis is common with streptococcal infections.
3. Urticaria.
4. Erythema multiforme.

Treatment

When the area is solitary and small the treatment is topical fusidic acid cream or ointment. Crusts should be removed because they block the penetration of antibacterial topical applications. To facilitate removal, soften crusts by soaking with a wet cloth compress. A 5- to 10-day course of oral antistaphylococcal antibiotics such as flucloxacillin or cephalosporins (e.g. cephalexin, cefadroxil) induces rapid healing. Lesions heal without scarring.

Ecthyma

Ecthyma is characterized by ulceration that is covered by adherent crust. Removing the crusts reveal punched-out ulcer. Poor hygiene, immunosuppression and malnutrition are a predisposing factors. Common site is the leg. Lesions heal with scarring. Ecthyma is initiated by streptococci but quickly contaminated by staphylococci. Treatment is by systemic antibiotics as for impetigo.

Cellulitis and erysipelas

Both are skin infections characterized by erythema, edema and pain. In most instances there is fever. Both may be accompanied by lymphangitis and lymphadenitis. Pathogens enter at the site of local trauma or abrasions and psoriatic, eczematous, or tinea lesions.

Table shows the differences between erysipelas and cellulitis.

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| --- | --- | --- |
|  | Erysipelas | Cellulitis |
| Site of  Pathology | Dermis | Dermis and subcutaneous tissues |
| Cause | Usually streptococci | Streptococci, S. aureus Hemophilus influenzae and others. |
| Margin between involved and uninvolved skin | Distinct | Indistinct |
| Common sites | Lower legs, face and ear | Any site |
| Lymphatic involvement (streaking) | Prominent | Not prominent |

Treatment:

Flucloxacillin 500 mg orally every 6 hours or a cephalosporin.

Folliculitis

Folliculitis is inflammation of the hair follicle caused by infection, chemical irritation, or physical injury. In superficial folliculitis, the inflammation is confined to the upper part of the hair follicle. It manifested as a painless or tender pustule that eventually heals without scarring. In deep folliculitis, the inflammation involves the deeper portion of the hair follicle or the entire follicle. The lesions are painful and may heal with scarring.

Diseases initially manifesting in folliculitis

|  |  |
| --- | --- |
| Superficial folliculitis | Deep folliculitis |
| Staphylococcal folliculitis | Furuncle and carbuncle |
| Pseudofolliculitis barbae  (from shaving) | Sycosis barbae |

Staphylococcal folliculitis

It may occur because of injury, abrasion, or nearby surgical wounds or draining abscesses. It may also be a complication of occlusive topical steroid therapy. Oral antistaphylococcal antibiotics are used in the treatment.

Pseudofolliculitis barbae

It is a foreign body reaction to hair. The condition occurs on the cheeks and neck in individuals who are genetically inclined to have tightly curled spiral hair, which can become ingrown. Secondary bacterial infection may supervene.

Treatment:

1. Stop shaving.
2. Dislodge imbedded hair shafts by inserting a firm pointed instrument such as syringe needle under the hair loop and firmly elevating it.
3. A short course of antibiotic may hasten resolution.
4. Corticosteroids (prednisone at 40 to 60 mg/day for 5 to 10 days) may be used in moderate to severe cases to reduce inflammation around the hair follicles until the hair grows and is no longer an aggravating factor.

Furuncles and carbuncles

A furuncle (boil) is a walled-off collection of pus that is a painful, firm, or fluctuant mass. S. aureus is the most common pathogen. Lesions favor areas prone to friction or minor trauma such as underneath a belt, buttocks or axillae.

Carbuncle is an aggregate of infected follicles. The infection originates deep in the dermis and the subcutaneous tissue forming a broad red swollen deep painful mass that points and drains through multiple openings.

Treatment: Many furuncles are self-limited and respond well to frequent applications of a moist warm compress. The primary management of cutaneous abscesses should be incision and drainage. The abscess is not ready for drainage until the skin has thinned and the underlying mass becomes soft and fluctuant. Anti-staphylococcal antibiotics for 5-10 days.

Sycosis barbae

It implies follicular inflammation of the entire depth of the hair follicle in the beard area. S. aureus is the most common pathogen. It begins with appearance of papules or pustules and rapidly becomes more diffuse as shaving continues. The condition should be differentiated form tinea barbae which is a dermatophyte fungal infection. Fungal infections tend to be more severe, producing deeper and wider areas of inflammation while bacterial infections usually present with discrete pustules. Hair pulling is easy in fungal infection while difficult and painful in bacterial infection. Hairs should be removed and examined for fungi and the purulent material should be cultured.

Treatment: Localized inflammation is treated with topical fusidic acid. Extensive disease treated with oral antibiotics (e.g. cephalexin) for at least 2 weeks.

Erythrasma

It is a mild, chronic, localized superficial infection of the skin caused by bacteria known as Corynebacterium minutissimum. It affects mainly toe clefts, groins, axillae, intergluteal and submammary flexures. There are irregular sharply marginated red-brown patches. Either smooth in new lesions or finely creased or scaly in older ones. Usually the lesions are symptomless or with occasional itching. Best diagnostic approach is coral-red fluorescence under Wood’s light examination. Treatment: Topical erythromycin for 2 weeks. For extensive lesions erythromycin orally 250mg 6 hourly for 10 days.

Erysipeloid

It is an acute infection of skin with Erysipelothrix rusiopathiae. The disease is transmitted from animals like saltwater fish and poultry so it is common in butchers, cooks, fishermen, farmers and veterinary surgeons. In the localized cutaneous type, there is violaceous and tender erythema on the inoculation site with extending irregular sharp border. Hands, fingers and forearm are common sites.

Treatment: It is self-limited disease heals without sequels within 2 weeks, or can give erythromycin.