

BACTERIAL INFECTIONS

The resident flora of the skin

Propionobacterium acnes

(An anaerobic dyphteroid)

Aerobic dyphteroids

(c.minutissimum,c.tenuis,brevibacterium)

Stafilococci

(S. epidermidis, S. aureus)

Anaerobic streptococci

Gram negative bacteria

Pityrosporum

BACTERIAL INFECTIONS

Primary bacterial infections

- **Primary infections have a characteristic course and morphologic features**
- **Usually arise on normal, intact skin**
- **The causative agent is most frequently coagulase-positive staphylococci or beta-hemolytic streptococci**

BACTERIAL INFECTIONS

Secondary infections

- **Originate in areas of already damaged skin**
- **The bacterial agent multiplies and invades the surrounding areas; thus aggravating and prolonging the underlying skin damage**
- **The underlying event can be any type of physical damage, fungal infestation, parasitic infestation or a noninfectious skin disease (eczema)**
- **Secondary infections tend to recur until the underlying disorder is healed**

BACTERIAL INFECTIONS

- **Impetigo contagiosa**
- **Ecthyma**
- **Staphylococcal scalded skin syndrome**
- **Folliculitis**
- **Furunculosis / Carbunclosis**
- **Erysipelas / Cellulitis**
- **Erythrasma**
- **Anthrax**

IMPETIGO CONTAGIOSA

Etiology

Initiated by

- **Staphylococcus aureus**
 - **Beta-hemolytic streptococci**
 - **or both the above agents**
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- **Superficial (common) impetigo or bullous forms**

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Superficial Impetigo-Characteristics

- **Mostly streptococcal origin**
- **Initially papulopustular lesions**
- **Superficial erosions**
- **Honey colored crusts**
- **Mostly in childhood**
- **Lesions particularly on the face and extremities**

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Superficial impetigo-Clinical course

- **Erythematous papules**
- **Small transient vesicles or pustules**
- **Rapidly evolving to erosions**
- **Seropurulent exudates**
- **Honey colored crusts**
- **Satellite lesions**
- **General status is well**
- **Healing is without any scarring**

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Superficial impetigo-Differential diagnosis

- **Insect bite**
- **Eczematous dermatitis**
- **Bullous diseases**
- **Herpes simplex**
- **Varicella**

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Bullous Impetigo-Characteristics

- **Thin walled, flaccid bullae
(0.5-3 cm in diameter)**
- **Thin crusts**
- **Erosions**
- **Usually Staphylococcus aureus**
- **General status is usually well**

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Treatment

- **Antiseptic solutions**
- **Removal of the crusts**
- **Topical antibacterial agents**
- **Oral antibiotics (penicillin, cephalosporin, erythromycin)**
- **Avoid close contact with other children**
- **% 2 poststreptococcal glomerulonephritis**

ECHTYMA

General considerations

Synonym : Ulcerative impetigo

- **Group A streptococci**
- **Punched out ulcerations**
- **Hard thick crusts**
- **Especially lower extremities**

ECHTYMA

Clinical course and features

- **Children or young adults**
- **Insect bite or minor trauma**
- **Erythema**
- **Superficial vesicopustules**
- **Punched out ulcerations (2-3 mm deep, 2-3 cm in diameter)**
- **Hard, thick, dark colored crusts**
- **Only about 8-10 lesions**
- **Healing in 2-3 weeks with scarring**

ECHTYMA Treatment

- **Penicillines / Erythromycin / Ofloxacin / Dicloxacillin**
- **Antiseptic solutions**
- **Removal of crusts**
- **Topical antibiotics**

STAPHYLOCOCCAL SCALDED SKIN SYNDROME (LYELL)

Etiology

- Dermatopathic strains of *S. aureus*
- The cause is an epidermolytic exotoxin
- Source is usually impetigo, tonsillitis or conjunctivitis
- Infants and children

STAPHYLOCOCCAL SCALDED SKIN SYNDROME (LYELL)

Clinical features

- Red and tender skin (sudden onset)
- The skin loosens and scaling begins within hours
- The outer layer can be pushed out (Nikolsky)
- Cleft formation in str. granulosum
- Perioral region, genitalia, trunk most commonly affected
- General health is usually good

STAPHYLOCOCCAL SCALDED SKIN SYNDROME (LYELL)

Treatment

- **Penicillinase resistant penicillins**
- **Dicloxacillin 50 mg/kg/day (4 divided doses)**
- **Oxacillin or nafcillin (IV) 75-100 mg/kg/gün (4 divided doses)**
- **Corticosteroids should be avoided**

FOLLICULITIS

General considerations

- **All the inflamatur conditions concerning the hair follicle**
- **Itching and burning**
- **Pustules in hair follicles**
- **Etiologic agents**
- **Staphylococcus / Streptococcus / Pseudomonas**

STREPTOCOCCAL- STAPHYLOCOCCAL FOLLICULITIS

General considerations

- Synonym : Bockhart's impetigo)
- Painful, yellowish pustules
- Surrounding erythema
- Hair arising from the center
- Usually localized on extremities
- Often secondary to the use of ointments (especially topical corticosteroids)

STREPTOCOCCAL- STAPHYLOCOCCAL FOLLICULITIS

Treatment

- Erythromycin/Tetracyclin/Doxicyclin
- Local antiseptic solutions
- Stop any occlusive therapy or ointment usage

PSEUDOMONAS FOLLICULITIS

General considerations

- *Pseudomonas aeruginosa*
- Acute infection of the follicles
- Usually from common baths or pools
- Usually trunk and extremities
- Typical greenish follicular pustule
- Surrounding erythema
- Sometimes fever
- Antiseptics usually sufficient

FURUNCLES

General considerations

- **Definition : Acute cutaneous and subcutaneous localized follicular abscesses showing central necrosis and suppuration**
- **Tender, round subcutaneous nodules**
- **Usually fluctuant or capped with a small pustule**

FURUNCLES

Etiology - epidemiology

- Staphylococcus aureus
- Pruritic dermatoses, obesity, seborrhea, oil contact, alcoholism, immune suppression, bad hygiene, diabetes are predisposing
- Especially in diabetics frequent recurrence and furunculosis

FURUNCLES

Clinical features

- Neck, face, axillary, gluteal and femoral regions
- Tender nodules around the follicle (5cm or larger)
- Fluctuant after one week and suppuration
- Discharge of a core of necrotic tissue and pus
- Healing with scarring

FURUNCLES

Complications

- Premature surgical drainage or brutal procedures may cause
 - Sepsis
 - Metastatic abscesses
 - Cavernous sinus thrombosis (occipital and nasolabial lesions)
 - Osteomyelitis

FURUNCLES

Treatment

- In opened small lesions treatment not necessary
- Large / multipl lesions must be effectively treated
- Systemic antibiotics (oksasilin, dikloksasilin, sefalosporin, eritromisin)
- Wet compresses and antiseptics
- Pomad Ichtyolee
- Fluctuating lesions : surgical incision and drainage

CARBUNCLES

General considerations

- **Extremely painful infections of a group of contiguous follicles**
- **Much more larger than furuncles (5-10 cm)**
- **Many follicular pustules on the lesion**
- **The course is much more longer and debilitating**

CARBUNCLES

Clinical features

- Preferred sites : Neck, shoulders, back and gluteal region
- Fever, chills, general status is not well
- Red, rigid, infiltrated lesion
- Takes dark, red or purple colour and the pustules appear
- Pustules open with purulent discharge
- Necrosis and a crater like ulceration
- Healing in 2-3 weeks with scarring

ERYSIPELAS

General considerations

- **Usually group A beta hemolytic streptococci**
- **Superficial acute cellulitis of the skin and the subcutaneous tissues**
- **Malnutrition, alcoholism, disgammaglobulinemias predisposing**
- **Innoculation via minor trauma, lesions of herpes simpleks or tinea pedis, sometimes the umbilical cord in the newborn**

ERYSIPELAS

Clinical features

- **An incubation period of 5-7 days**
- **Sudden fever, malaise, headache**
- **Face, dorsum of the feet, legs**
- **Pain, well demarcated tense erythema and edema**
- **Sometimes vesicles on the margin or bullae formation**
- **Healing in 2-3 weeks with desquamation**

ERYSIPELAS

Treatment

- **Good response to penicillins (penicillin G is the drug of choice)**
- **In case of penicillin allergy erythromycin**
- **Antipyretic analgesics**
- **Duration of treatment must be one week. Bed rest and elevation of the extremity**
- **Wet compresses in bullous cases**

ACUTE DEEP CELLULITIS

General considerations

- Etiology : Streptococcus pyogenes, Staphylococcus aureus
- Acute infection of the deep subcutaneous tissues, tending to disseminate
- Less definite margins compared with erysipelas

ACUTE DEEP CELLULITIS

Clinical features

- Sudden onset, often severe systemic symptoms and signs
- Often the lower extremities and the gluteal region
- Not well demarcated inflammatory lesion, and tense edema
- Often deep local abscess formation
- Leucocytosis of about 15000-40000

ERYTHRASMA

General considerations

- Etiology : *Corynebacterium minutissimum*
- Bacterial intertrigo of the axillae, groin and the toe webs
- Red-brown lesions with well defined margins in the axillary and inguinal regions
- Erythema and masseration resembling tinea pedis in the toe webs
- Thin scaling on the surface
- Little or no local symptoms, sometimes mild itching
- Coral red fluorescence with Wood's light examination

ERYTHRASMA

Treatment

- **Extremely sensitive to many antimicrobials**
- **Specific antimicrobial is erythromycin (250 mg x 4 / day, for a week)**
- **Usually topical imidazoles are also effective**
- **Recurrences are common**

HIDRADENITIS SUPPURATIVA

General considerations

- Etiology : Staphylococci, streptococci and Proteus species in chronic cases
- Chronic, suppurating and scarring infection of the apocrine glands
- Begins with obstruction of the ducts
- Axillary, inguinal, pubic, peranal involvement
- Painful, erythematous, cystlike abscesses
- Obesity, acne, follicular keratinizing disorders are predisposing
- Familial cases in certain patients
- Axillary comedon formation in some cases

HIDRADENITIS SUPPURATIVA

Clinical features

- **Most frequently in the axillary region**
- **In 20% of the cases bilateral involvement**
- **Periodic abscess formation**
- **Intermittant drainage of fibrotic sinus tracts**
- **Painful, red, protruding swellings**
- **Pustules appearing after weeks and suppuration later on**
- **Scarring and anogenital fistulas**

HIDRADENITIS SUPPURATIVA

Treatment

- **Long term antibiotics (tetracyclin, doxicyclin, cephalosporins)**
- **Regular antiseptic cleansing and topical antibacterials**
- **Antiperspirants and deodorants must be avoided**
- **Tight clothing and friction precipitates acute episodes**
- **Surgical drainage of fluctuating lesions**

ANTHRAX

Etiology

- **Zoonotic disease caused by *Bacillus anthracis***
- **Usually transmitted through broken skin or mucosa (sometimes via ingestion or inhalation of the spores)**
- **Farmers, shepherds, butchers, veterinarians, leather or wool workers and their close contacts mostly affected**

ANTHRAX

Diagnostic criteria

- **Occupational or social relation**
- **Suddenly arising high fever**
- **A red papule with dark red peripheric swelling, hemorrhagic blister formation, necrosis and hard, black crust formation**

ANTHRAX

Clinical features - 1

- **Cutaneous lesions mostly on the hands and face**
- **Incubation period 1-7 days (average 2 days)**
- **An erythematous papule, burning, itching and high fever**
- **Local edema, a purple or brown inflammation zone around the papule**

ANTHRAX

Clinical features - 1

- **After 5-6 days blister formation on the papule which becomes hemorrhagic later on**
- **Rupture of the blister, hard, black crust formation and necrosis (malign pustule)**
- **Cutaneous cases have a good prognosis with prompt treatment**
- **Severe edema and toxemia (20% of the cases) has a poor prognosis**

ANTHRAX

Treatment

- **Declaration obligatory in Turkey**
- **Hospitalisation and search for systemic involvement or signs of toxemia**
- **IM or IV high dose penicilin therapy for at least one week**
- **After the edema subsides maintenance therapy**
- **In case of penicillin allergy tetracyclins**