



Bacterial skin infections

1. **Suppurative** infections – pyoderma



a) affecting free skin

epidermal (impetigo, ecthyma)

dermal (erysipelas, cellulitis)

b) affecting skin appendages

folliculitis


furuncle, carbuncle



2) **Other bacterial** infections



Predisposing factors

- Alteration of the normal skin flora
 - Skin trauma
 - Chronic dermatoses
 - Immunodeficiency
 - Corticosteroid therapy
 - Malnutrition
 - Peripheral vascular disease
 - Systemic disease (diabetes)
- 

Causative agents

• Normal flora:

- St. Epidermidis
- St.saprophyticus
- Micrococcus
- Corynebacterium
- Propionibacterium acnes.

Common pathogens:

- St.aureus
- β hemol.streptoc.
- Escherichia coli
- Proteus mirabilis
- Pseudomonas aerug.

Uncommon p.:

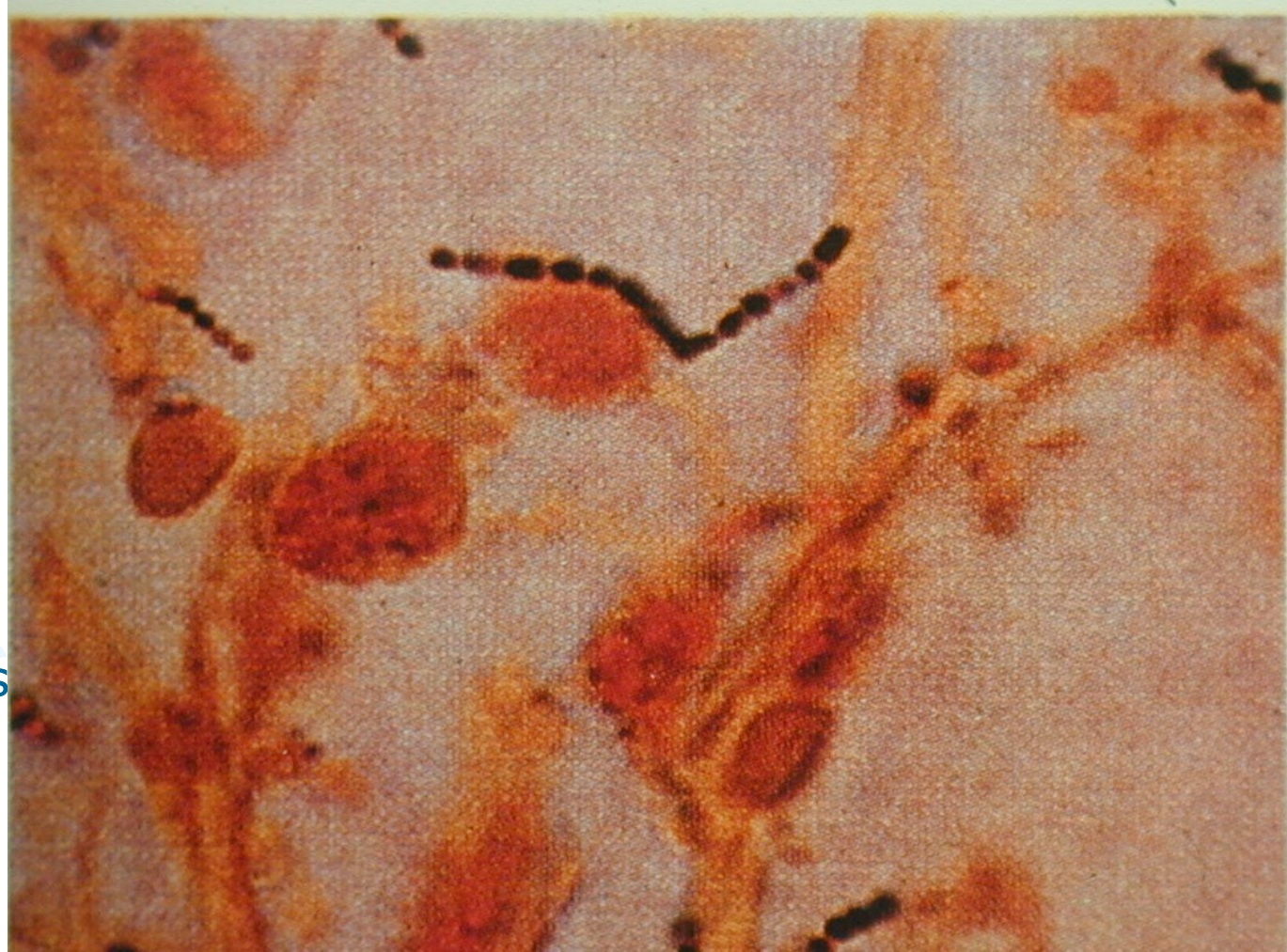
- Enterobacter sp.
- Str.faecalis
- Providencia sp.
- Serratia sp.
- Bacteroides
- Clostridium

Streptococcus pyogenes

- Group (A-D,G) G+ cocci

- toxins
- DNase
- Strepto
- kinase

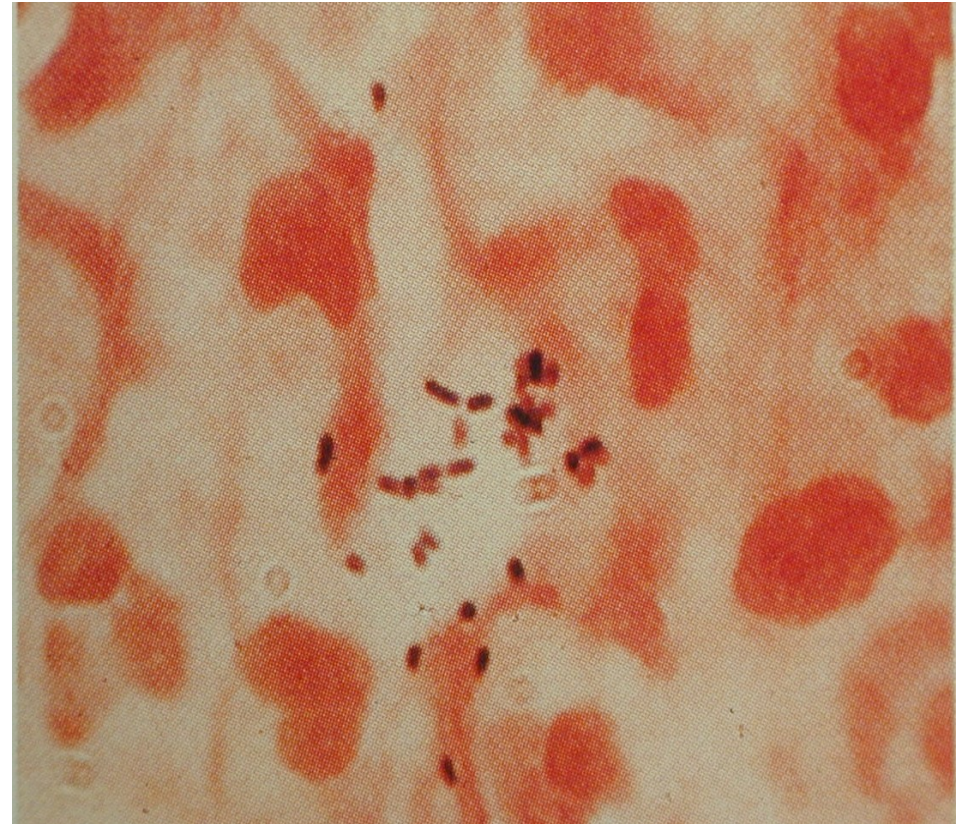
can trigger
guttate psoriasis



Staphylococcus aureus

- G+, spherical cocci
- destructive enzymes
coagulase
proteases ...
- toxins: TSS toxin
enterotoxins –
SEA,SEB

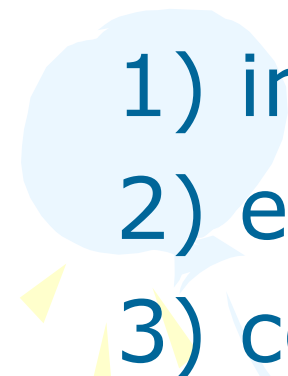
MRSA major problem in
hospitals





Pyoderma

A) affecting free skin

- 
- 
- 1) impetigo
 - 2) erysipelas
 - 3) cellulitis
 - 4) necrotising fasciitis
 - 5) chronic ulcerating pyoderma



Pyoderma

B) affecting skin appendages



1) folliculitis

a) superficial folliculitis

b) folliculitis simplex

c) folliculitis barbae

(sycosis barbae)

d) G- folliculitis



e) non infectious folliculitis



Pyoderma

2) furuncle/furunculosis

3) carbuncle

4) sweat gland infections

hidradenitis suppurativa

(5) nail fold infections paronychium

(6) eyelid infections – hordeolum

- blepharitis

- chalazion



1) impetigo

- Non bullous: caused by str. pyogenes
- Most common among children
- Transferred by direct contact or subjects
- Clinics: initially small vesicles, easily rupture, erosions covered with honey colored crusts
- Treatment: wet coating, topical ATB: mupirocin, fusidic acid, rapamulin
- Large areas, fever: systemic PNC, CFSP

impetigo

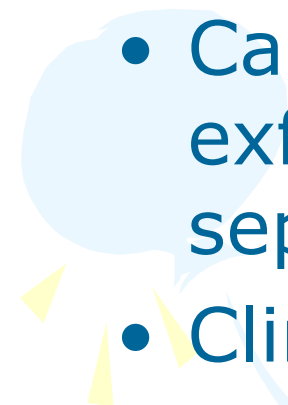



impetigo





- Bullous impetigo:

- Caused by Staph. aureus producing exfoliatin A & B causing superficial separation in epidermis /str. granulosum/
 - Clinics: flaccid blisters containing pus
face, groins, acral regions
 - Treatment: topical or systemic ATBs
- 
- 

Bullous impetigo



impetiginisation

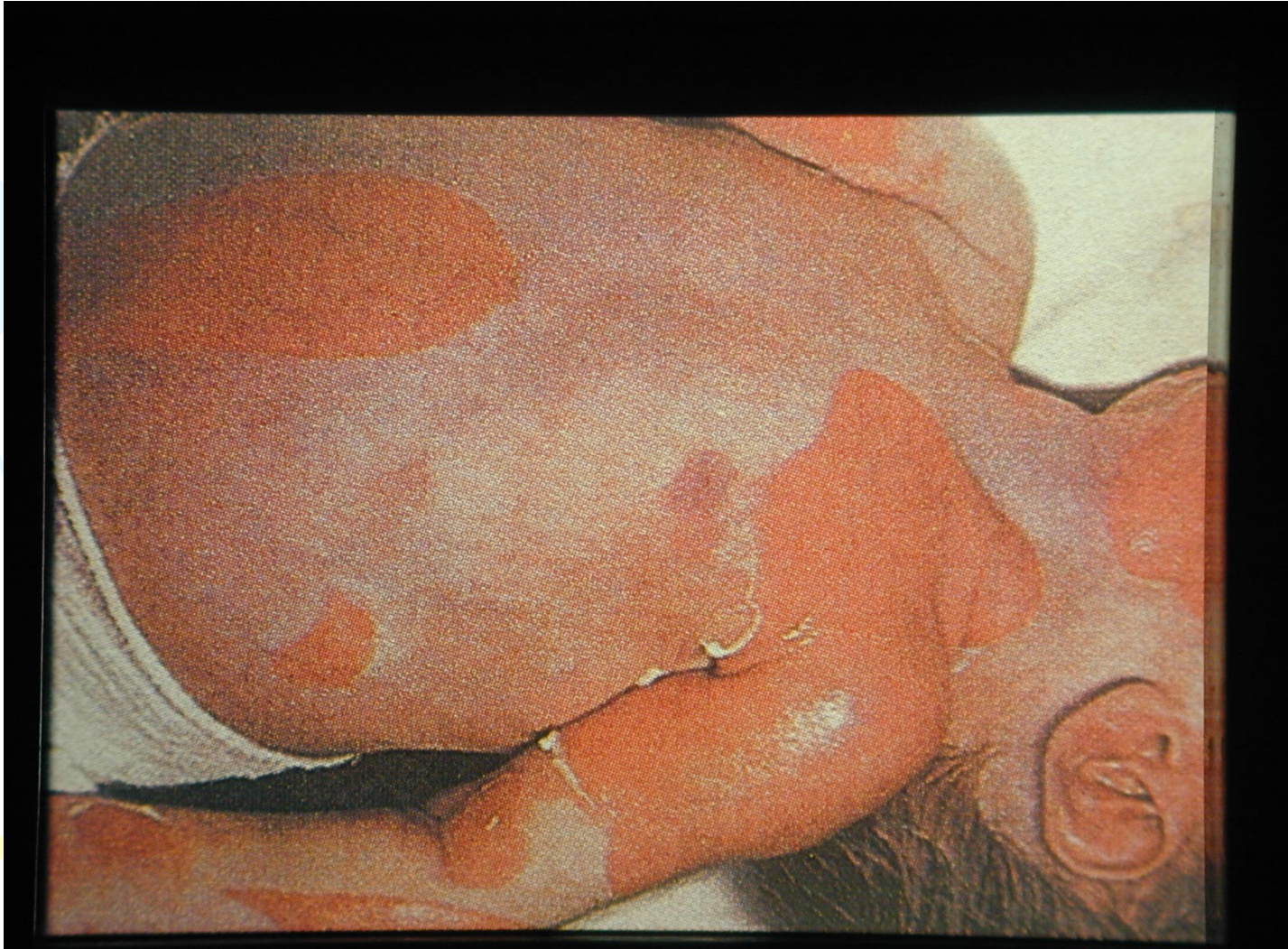




Staphylococcal scalded skin syndrome (Ritter)

- widespread superficial skin loss caused by staphylococcal exfoliatin
- scarlatiniform rash around mouth, diaper area,
- fever
- flaccid blisters, easily rupture
- Th: ATB, repl. of fluids, temp. control

Staphylococcal scalded skin syndrome



2) erysipelas

- Causative organism: Str. pyogenes (β hemolytic group A streptococci), less often other streptococci
- Entry: minor injury, interdig. fissure, leg ulcers ...
- Clinics: prodromes (fever, chills)

warm painful red area with tongue like extensions mostly leg, less often face

Variants: blistering erysipelas, haemorrhagic e., abscessing e., necrotising e.

Complications: endocarditis, glomerulonephritis

Treatment : procain G PNC i.m. 1,5 mil U 2 x d

alternatives: cephalosporins, macrolides
lincomycin

erysipelas



erysipelas





3) cellulitis

- Agents: Strept. pyogenes, St. aureus
- deeper infection than erysipelas
- After minor injury, surgical wound erythema, with spared regions swelling, pitting edema
- Regional lymphadenitis
- Fever
- Th: PNC, cephalosporins

cellulitis



4) necrotising fasciitis

- Agents: streptococcus pyogenes
- If more agents: Synergistic necrotising fasciitis/cellulitis
- Older, IS patients
- Erythema --> necrotic eschar
- crepitation
- Fever, extensive pain,
- Th: surgical debridement
- PNC+clindamycin or according to culture, iv Ig ! POOR PROGNOSIS !

necrotising fasciitis



5) chronic ulcerating pyodermas

- Pyoderma ulcerosa, vegetans ...



Pyoderma aff. skin appendages: a) superficial folliculitis (ostiofolliculitis)

Superficial
inflammation
of the
hair follicle
(opening of the
hair follicle)

Staph. aureus

Triggers: hot and
humid weather
sweating

Trt: disinfectant so
topical ATB: Ery,
clindamycin



b) folliculitis simplex



inflammation
of the whole
hair follicle

Typical locations:

Back, buttocks

Scalp, axillae

Itching

Trt: disinfectant sol

topical ATB: Ery,

Clindamycin

Large areas, fever:

Systemic ATB:

PNC, CFSP

folliculitis simplex disseminata



c) folliculitis barbae (sycosis barbae)



Most common variant
of ordinary folliculitis
Pustules
Nodules, abscesses
Involving beard region
and sides of the neck
Starts with minor trauma
Spreads by shaving
Trt: disinfectant sol
topical ATB: Ery,
Clindamycin
Large areas, fever:
Systemic ATB: PNC, CFSP



d) G- folliculitis

- Chronic recurrent folliculitis of the mid-face region
- Caused by G-bacteria
- Enterobacter, E.coli, Klebsiella
- Complication of acne, rosacea
- Th: quinolones: ciprofloxacin
+ isotretinoin

e) non infectious folliculitis

- Folliculitis decalvans
- Perifolliculitis capitis abscondens et suffodiens





Furuncle (boil)



Deep inflammatory nodule
with central pus
Develops from hair follicle
infection
Causative agent: St. Aureus
Poor hygiene, diabetes,
immunosuppression
Areas of friction
Clinics: pustule -->
nodule, central plug
--> discharge of pus
Healing with scar
Trt: top. drawing ointments
(ichtamol – saloxyl ung.)
topical ATB: mup., fusidic a.
Systemic ATB: PNC, CFSP
Surgery: incision

Furunculosis



Multiple recurrent
boils
Predisposing
factors: DM
poor hygiene,
immunosuppression
Atopic dermatitis
nasal or perianal
carriage of *St. aureus*

Carbuncle



Fusion of several boils
Most common on the
neck and trunk
Inflamed swollen area
Often with necrosis
Treatment: systemic ATB
surgery

Carbuncle



sweat gland infections

- hidradenitis suppurativa



(5) nail fold infections - paronychia

Minor trauma of cuticle

St.aureus

Purulent secretion
from the nail fold

Ddg: candidal paron.
herpetic whitlow

Th: drainage
topical ATB



(6) eyelid infections –





2. Other bacterial infections

- Cutaneous diphtheria - *rare*
- Listeriosis - *rare*
- Actinomycosis
- Nocardiosis - *mostly in immunosuppressed pat.*
- Cat scratch disease (bartonella)
- Clostridial infections
- Zoonoses –
erysipeloid, anthrax, tularemia

Actinomycosis

Causative organism:

G+ anaerobic bacteria

Actinomyces israelii

Clinical types:

CERVICOFACIAL ACTINOMYCOSIS

the commonest form, initially a red indurated nodule on the cheek or submaxillary region.

Multiple sinuses, scarring and the formation of new nodules produce an uneven lumpy surface. Fistulas or even small ulcerations arise.

Characteristic sulphur granules may be found in the discharging pus.



THORACIC ACTINOMYCOSIS

and **ABDOMINAL ACTINOMYCOSIS** cause general symptoms such as fever, chills, night sweats and weight loss TH: PNC, lincomycin

Erysipeloid

- Causative agent: *Erysipelothrix rhusiopathiae*
- persons who in their occupation handle infected fish, shellfish, poultry, or meat.
- Three forms of this condition exist:
 - a mild localized form manifested by local swelling and redness of the skin;
 - a diffuse form that might present with fever;
 - and a rare systemic form associated with endocarditis
- Th: PNC



Anthrax

- woolsorter's disease,
- gram positive *Bacillus Anthracis*
- exposure to infected animals or handling of hides or other animal products
- Th: PNC, TTC



Tularemia

Rabbit fever (rabbits, hare, foxes..)

Francisella tularensis

Forms: ulceroglandular
mucosal
ocular
typhoid

Th: macrolides



The image features three stylized balloons on the left side. The top balloon is light green, the middle one is light blue, and the bottom one is light purple. Each balloon has a thin, curved line representing a string and several small, yellow, triangular shapes radiating from its base, suggesting light or movement. The balloons are positioned vertically along the left edge of the page.

TEST



TEST

- What would you treat gonorrhoea with?
 - a/ penicilin
 - b/ tetracycline
 - c/ PUVA

- Mycosis fungoides originates from...
 - a/ T- lymphocytes
 - b/ B –lymphocytes
 - c/ NK cells

TEST

- What causes pemphigus vulgaris?
 - a/ AB against desmosomes
 - b/ AB against hemidesmosomes
 - c/ AB against gluten
- Most biologicals used for the treatment of severe psoriasis are directed against...
 - a/ IL-12/23
 - b/ IFN γ
 - c/ TNF α



TEST

- The two main subtypes of atopic dermatitis are....
 - a/ young and adult
 - b/ cutaneous and systemic
 - c/ extrinsic and intrinsic
- The cause of erysipelas is...
 - a/ Hemophilus Ducreyi
 - b/ β hemolytic Streptococcus
 - c/ Staphylococcus aureus