

Skin, soft tissues, bones and joints infections

Case reports

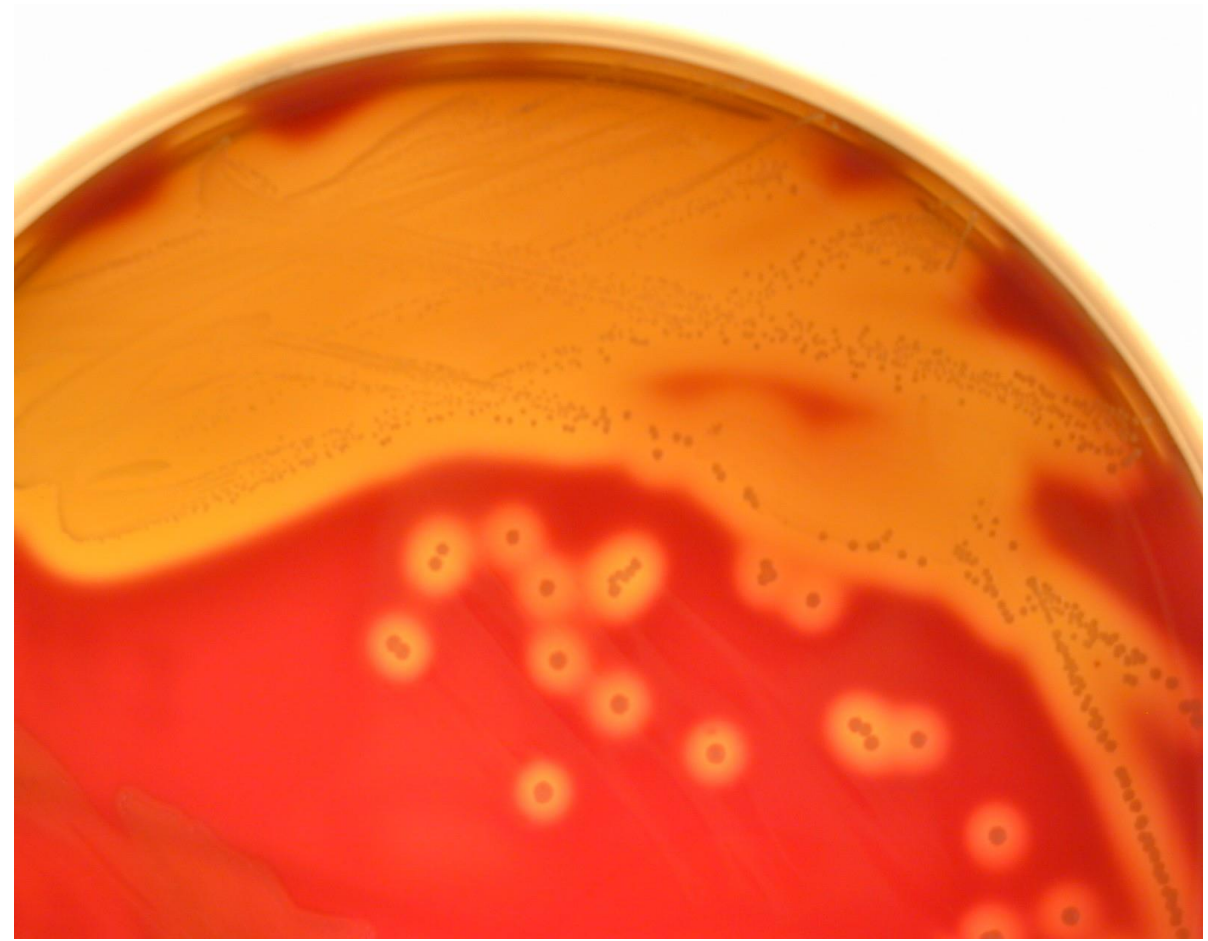
Case report 1

- 6 yrs. old girl attending kindergarten comes with her mother to the pediatrician with multiple focuses on her face. Swimming course in the anamnesis.
- Objective: afebrile, multiple focuses on the face in different stage – vesicles with pus contents to focuses covered with crust, submandibular lymphatic nodes enlarged
- Laboratory examinations:
Blood count: leucocytosis
- **Questions**:
 - 1. Which infections are suspected?
 - 2. Which microbiologic examinations will be performed?



Case report 1

- 3. What is the result of cultivation?
- 4. Which agent is most likely suspected and which tests may be used for its identification?
- 5. Which is the second most frequent agent causing impetigo?
- 6. Which antibiotics are the most appropriate for the therapy of isolated agent?



The result of cultivation after 24 hours of incubation

(Demonstration of pyrrolidonyl aminopeptidase – *Str. pyogenes*, gr. A
1. on paper with pyrrolidonylaminopeptidase one colony of streptococcus is applied
2. 1 drop of a reagent 3. evaluation in 1 minute
positive in *S. pyogenes* – red color

Case report 2

- 56-yrs. old man comes to the infectious clinic department for skin affect– circular reddening of skin progressively extending and disappearing in the centre. The man had a tick bite in the mentioned skin area. The tick was removed as late as the following day after walk in the forest. The reddening appeared after 4 days.
- Objective: afebrile, reddening of 7 cm with central paleness on the left calf, blood count normal



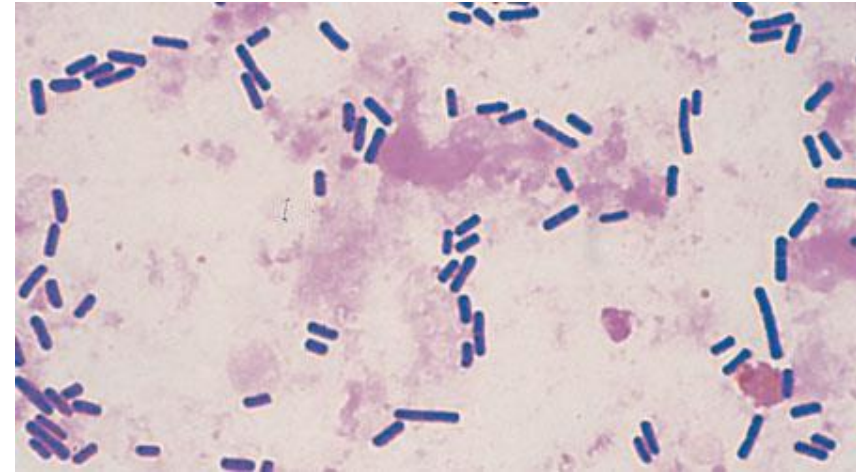
Case report 2

- **Questions:**
- 1. Which infection is suspected?
- 2. What is the etiologic agent? Which species of this pathogen do you know?
- 3. What are the possibilities of laboratory examination? What about cultivation?
- 4. Is the suspected infection primarily human or zoonosis?
- 5. What the term vector means (which other infection is transmitted by it) and what are the reservoir animals?
- 6. Indicate the suitable antibiotics for the therapy.

Case report 3

- 45-yrs. old man operated for acute appendicitis complicated with perforation. Within 48 hours after appendectomy enlarged painful swelling with brown exsudate secretion appears in the operation wound surroundings. Patient is exhausted, febrile with hypotension.
- Abdominal CT detects presence of gas in abdominal wall.
- **Questions:**
 - 1. Which biological specimens will be sent for microbiologic examination?
 - 2. Which infection is most likely suspected?
 - 3. Which agents are suspected? Which examinations of affected tissue will be performed?

Case report 3



- 4. Describe the microscopic findings in the wound exudate.
- 5. Which agent is suspected? List also the species names of microorganism causing described infection.
- 6. Which antibiotics with effect against anaerobic bacteria do you know?

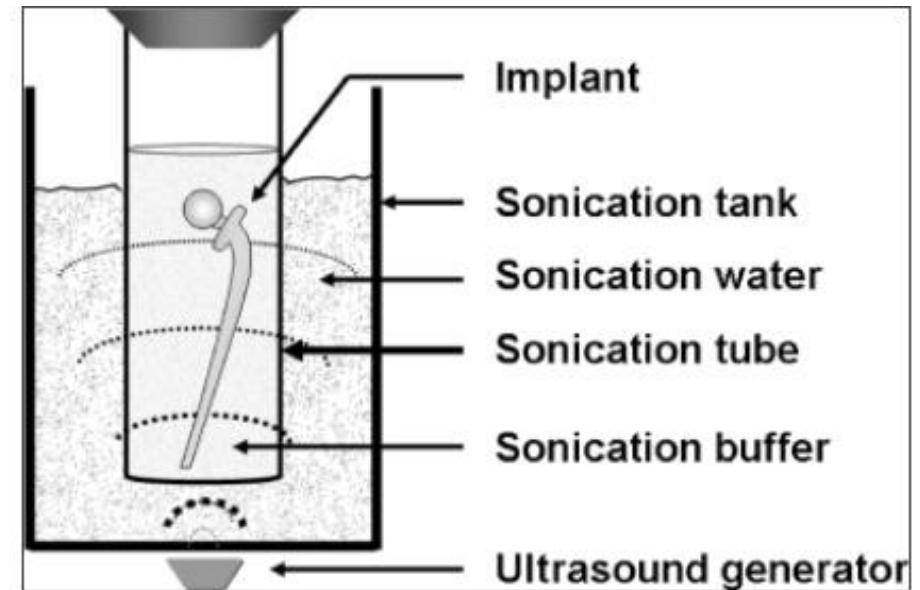
Case report 4

- 64-yrs. old man after hip endoprosthesis implantation for arthrosis 16 months ago. Since operation no relief from pain has been reached, occasionally subfebrile temperature.
- Objective: afebrile
- **Laboratory examinations**:
- CRP 24mg/l, blood count normal
- RTG of affected joint: lucidity surrounding endoprosthesis – endoprosthesis healing has not realized, most likely due to infection
- **Questions**:
- 1.What is the most common mechanism of infection?
- 2. Which specimens are suitable for bacteriological examination?
- 3. Which bacteria are the most frequent etiologic agents?



Case report 4

- 3 samples of the affected tissue from the prosthesis surroundings and extracted components of hip endoprosthesis are collected for cultivation.
- Extracted components are processed using sonication:
 - After 2 days of cultivation tiny grayish colonies are detected on blood agar
 - MALDI-TOF identification: *Staphylococcus epidermidis*



Case report 5

- 18-yrs. old man comes to his GP for redding focus above clavicle.
- Objective: afebrile, solitary focus with purulent contents and redding in the surroundings, no regional lymphadenopathy
- **Questions:**
 - Which disease is suspected?



Case report 5

- **Laboratory examinations:**

2nd day the spontaneous evacuation of focus appeared, swab from lesion sent for cultivation
Result of cultivation after 24 hours – on the slide



- **Questions:**

- 1. Which agent was cultured?
- 2. Is ATB therapy necessary? Indicate the suitable ATB.
- 3. What is the source of infection?

Case report 5

- 4. Which complications can *Staphylococcus aureus* cause when entering the blood circle?
- 5. Which ATB is the ATB of choice for therapy of staphylococcus sepsis?
- 6. Explain the term MRSA, what are the consequences for the patients with MRSA infection.

White/shadow colonies on blood agar with/without hemolysis

G + cocci

Catalase test

positive

Negative

Manitol-salt agar

growth, manitol +

growth, manitol -

no growth *

Plasma coagulase test

positive *

negative

negative

Staphylococcus aureus

* *St. intermedius*

Staphylococcus coagulase negative

St. epidermidie
St. haemolyticus
St. warnerii
St. saprophyticus
St. hominis

Streptococci

Enterococci

(* enterococci tolerate 7% of NaCl)

Beta hemolytic colonies on blood agar

G + cocci in pair or short chain



CAMP test

positive

negative



PYR test

negative

positive

negative

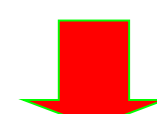
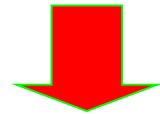


Bacitracin test

negative

positive

negative



Streptococcus
agalactiae (GBS)

Streptococcus
pyogenes (GAS)

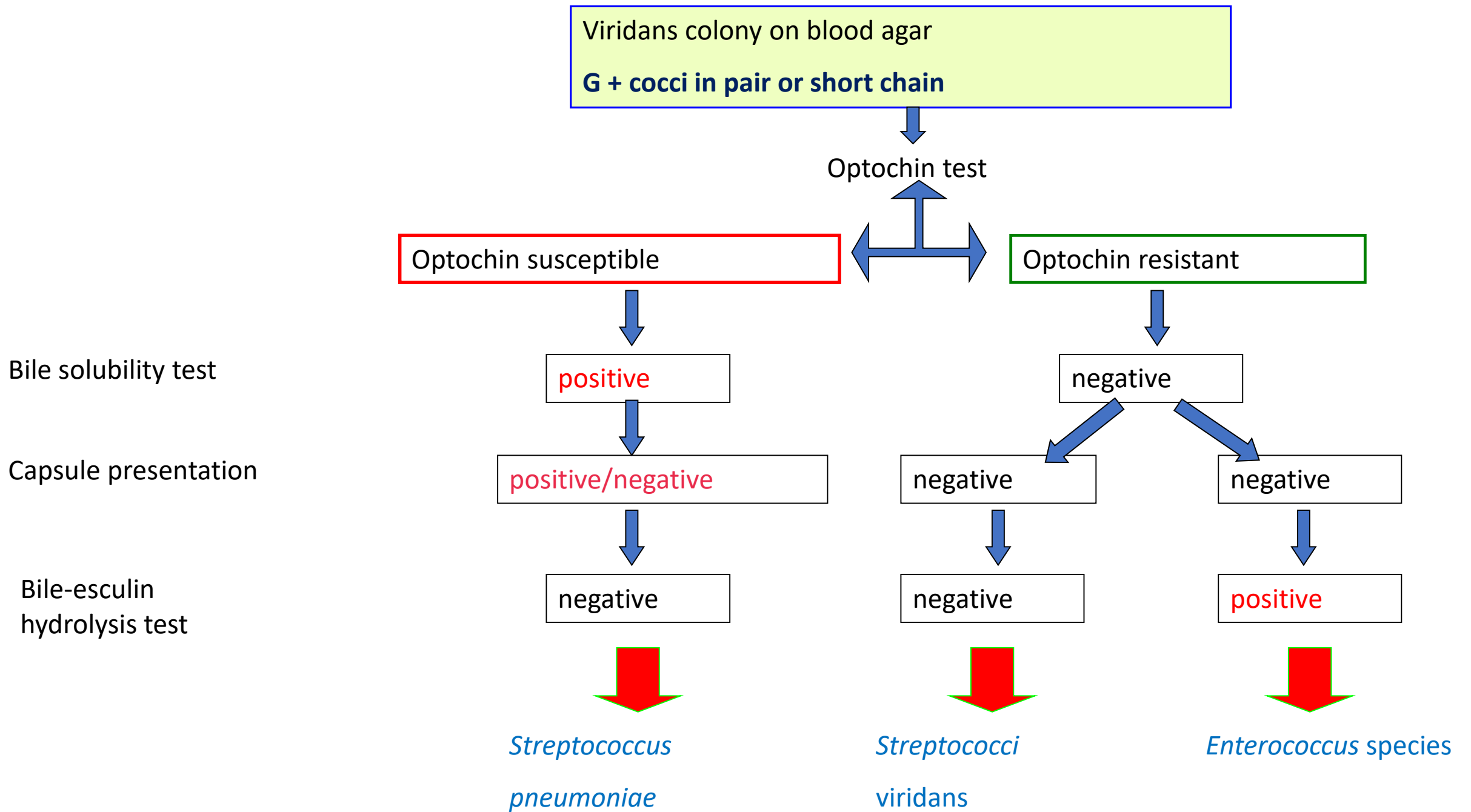
Other beta hemol
streptococci

agglutination

B

A

C, D, F, G



Case report 6

- 78-yrs. old woman with diabetes mellitus coming to her diabetologist for control visit complains about itching focuses under her breasts.
- Objective: afebrile, multiple tiny reddish focuses between and mostly under both breasts merging into large festering area
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- **Laboratory examination:**
- CRP 8 mg/l, glycaemia 12,8 mmol/l



Case report 6

- **Questions:**
- 1. Which infection is most likely suspected?
- 2. Which agent is detected most frequently, which examination may determine the agent?

Case report 6

- 3. Indicate at least 3 Candida species isolated from clinical specimens.
- 4. Which methods of Candida determination in clinical specimens are used?
- 5. What is the name of agar used for selective cultivation of Candidas?