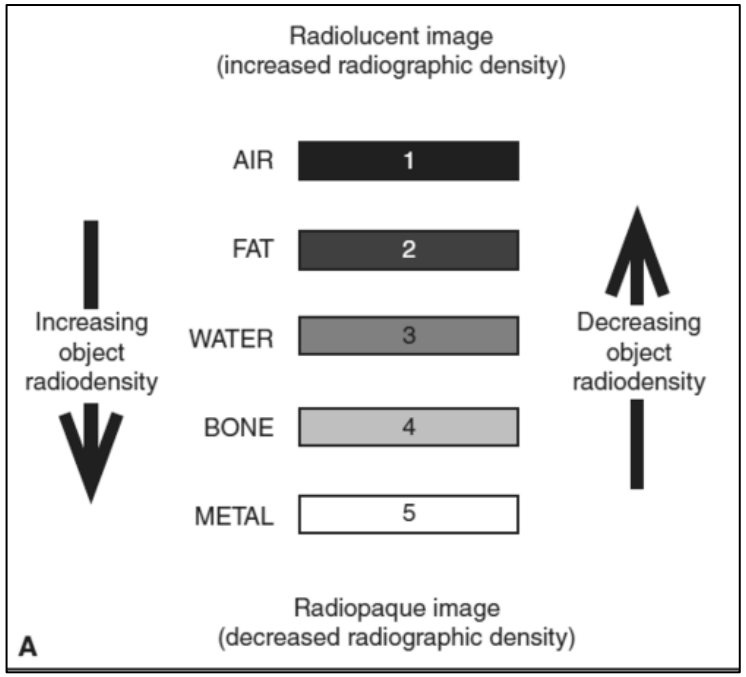
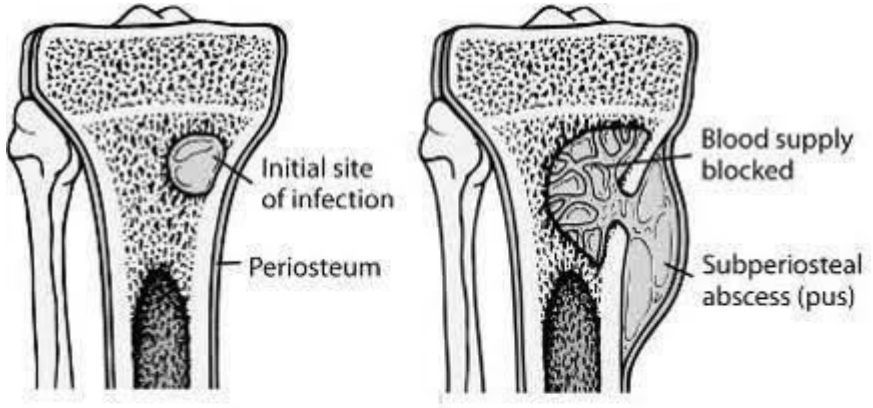
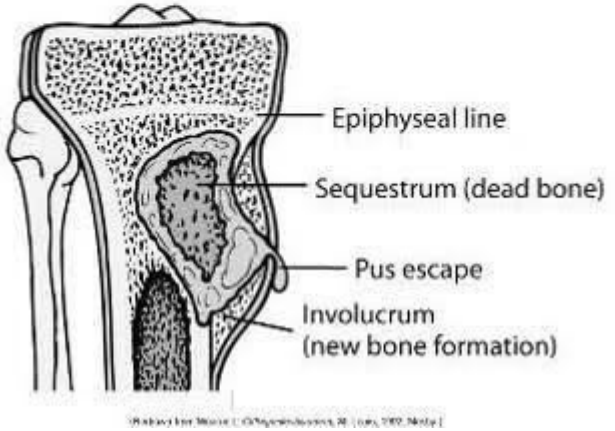
Osteomyelitis/ Introduction

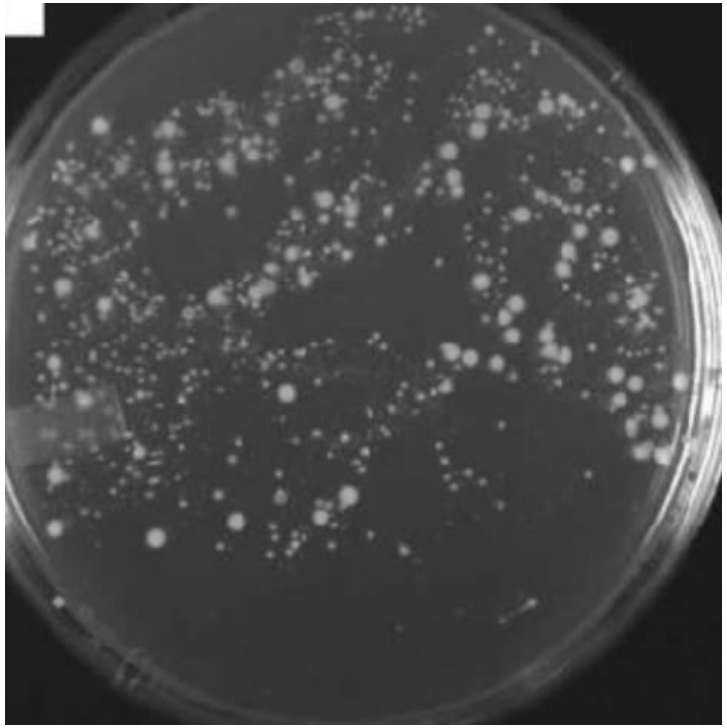






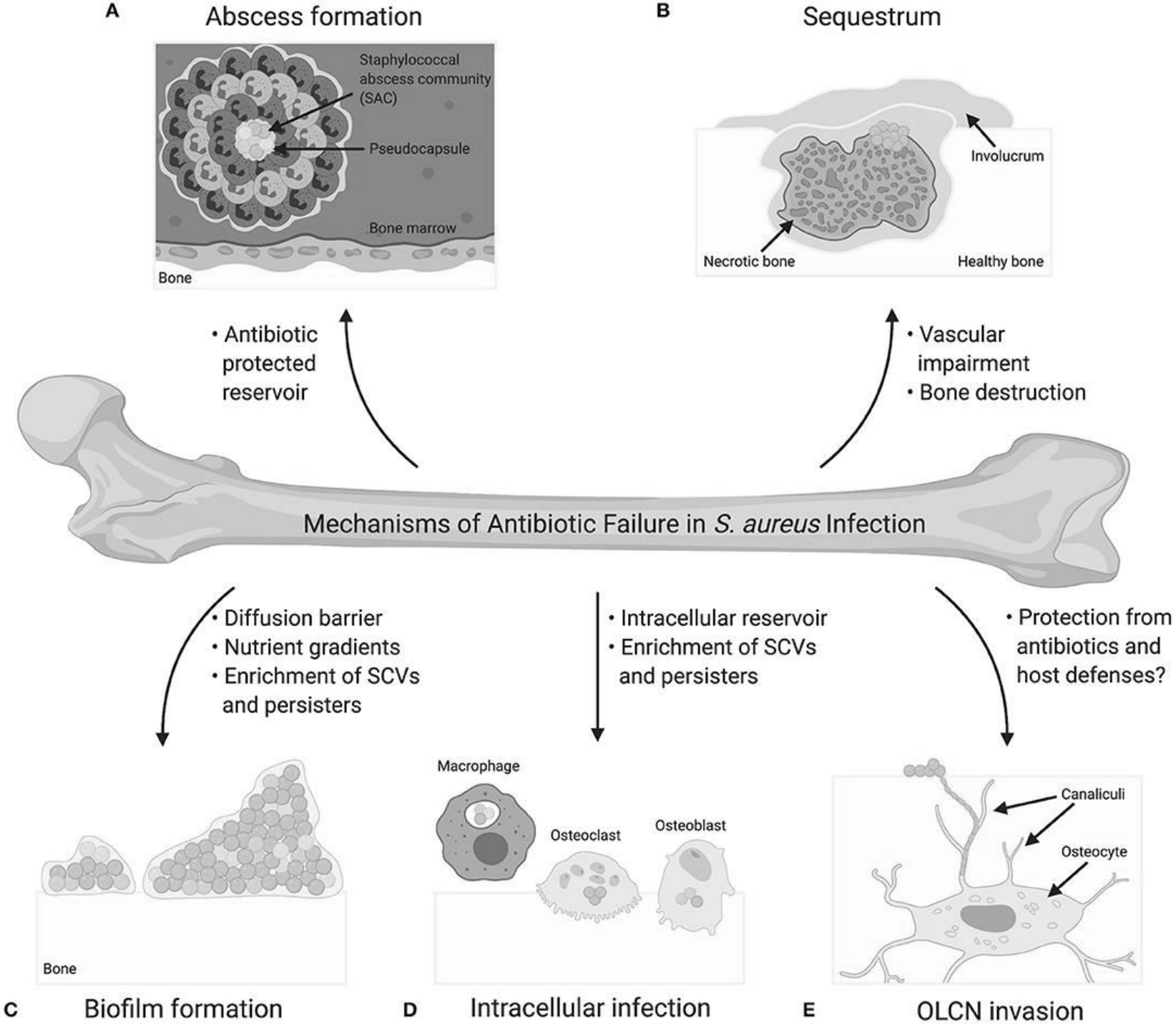
Sequestra are usually present; they form as a result of bone ischemia and necrosis in the context of blood vessel compression due to elevated medullary pressure associated with bone marrow inflammation.
Sequestra can be seen radiographically. The presence of a sinus tract is pathognomonic of chronic osteomyelitis.

Osteomyelitis/ PATHOGENESIS

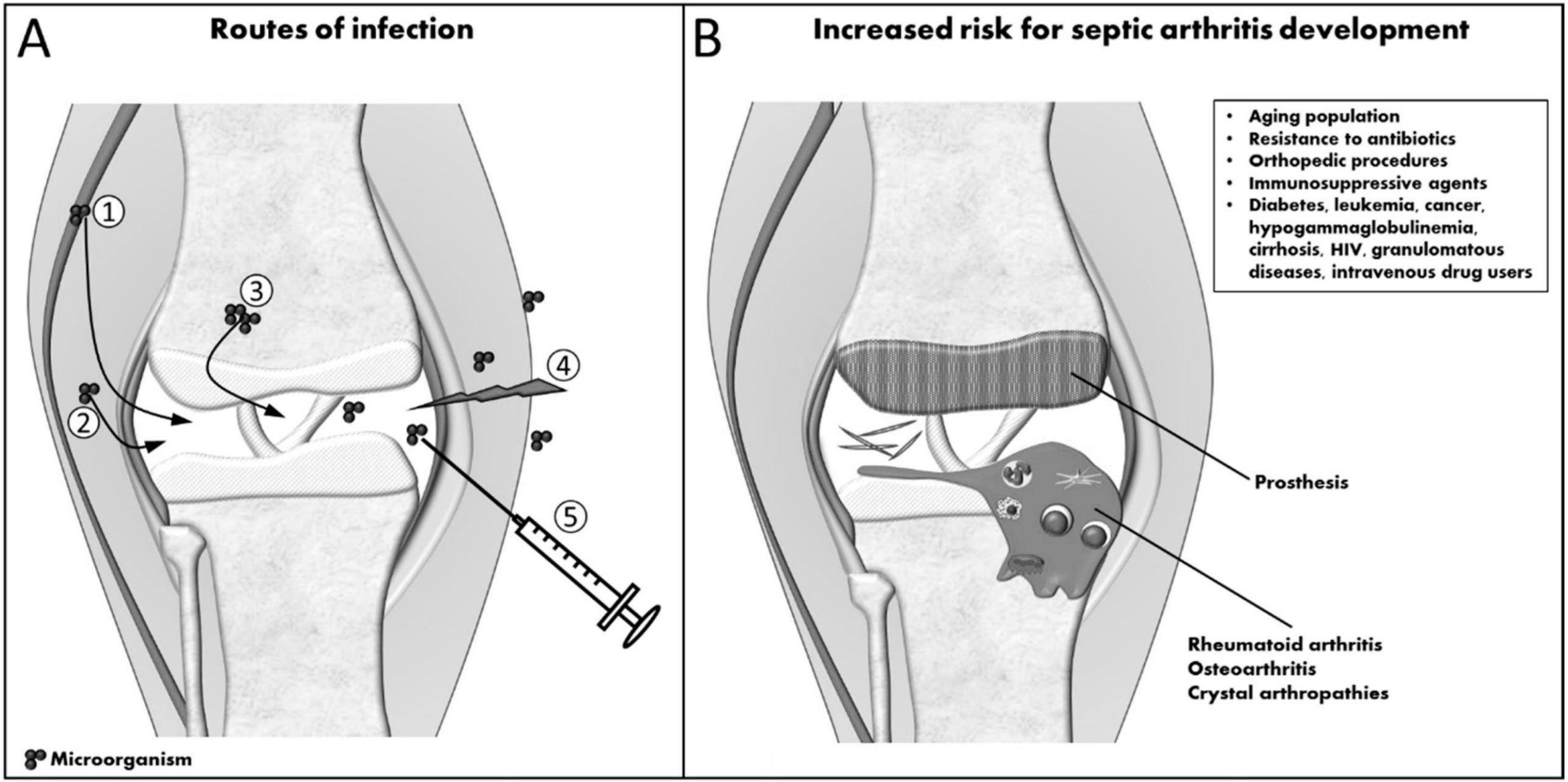


S. aureus.

small colony variants



Septic arthritis / overview



Septic arthritis / CLINICAL MANIFESTATIONS

- Patients with septic arthritis usually present acutely with a **single swollen and painful joint** (ie, **monoarticular arthritis**). Joint pain, swelling, warmth, and restricted movement occur in 80 percent of patients with septic arthritis. Most patients with septic arthritis are **febrile**; however, older patients with septic arthritis may be afebrile.
- **The knee is involved in more than 50 percent of cases**; wrists, ankles, and hips are also affected commonly

Animal bites (dogs, cats, and other animals): Evaluation and management

- **Dog bites** account for approximately **90 percent of animal bites** and occur most often in children. Cat bites account for approximately 10 percent of animal bite wounds and happen most often in adult women. Infections **are much more common after cat bites (up to 50 percent of wounds) than dog bites**.

- In children, dog bites usually involve the head and neck; in adolescents and adults, dog bites usually involve the extremities. Dog bites may be associated with a range of injuries, from minor to major wounds. **Cat bites usually occur on the extremities and tend to penetrate deeply**, **with higher risk of deep infection** (abscess, septic arthritis, osteomyelitis, tenosynovitis, bacteremia, or necrotizing soft tissue infection) **than dog bites**.

Animal Bites.

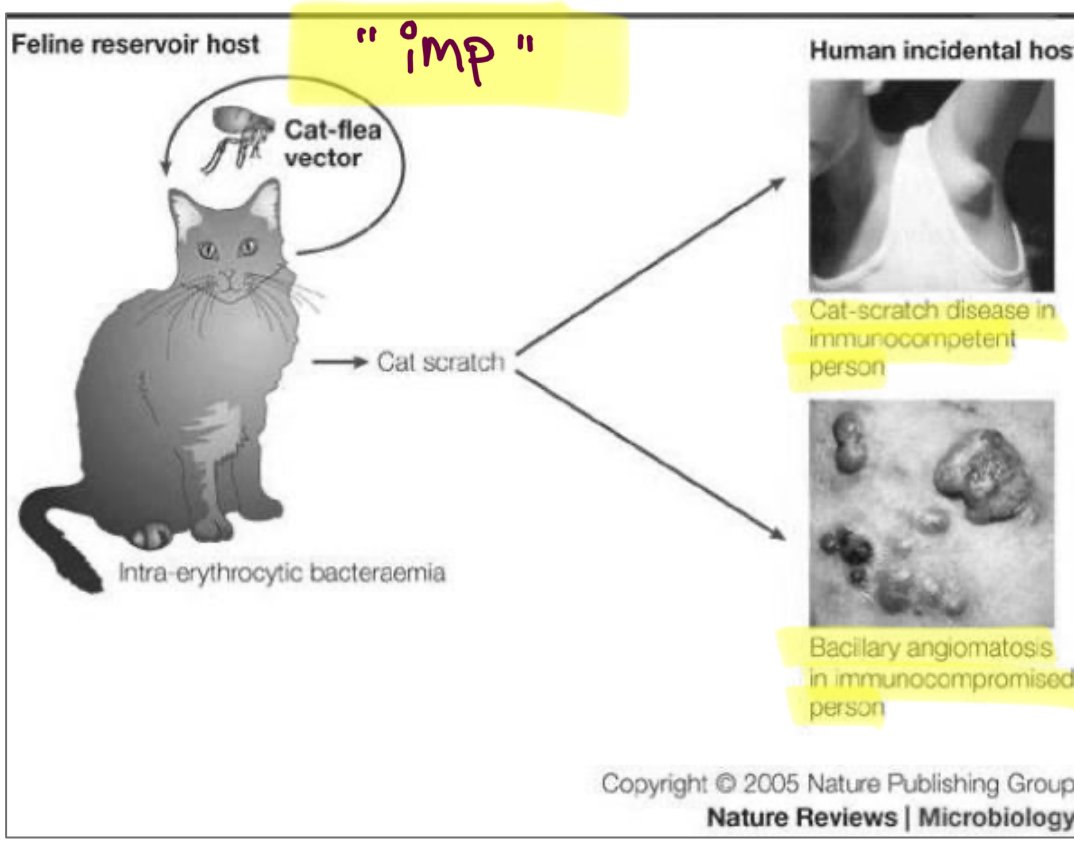
Bartonella

- *Bartonella* are **gram-negative, coccobacillary** or bacillary rods with **fastidious** growth requirements, requiring prolonged incubation (2 to 6 weeks). usually **facultative intracellular bacteria.**

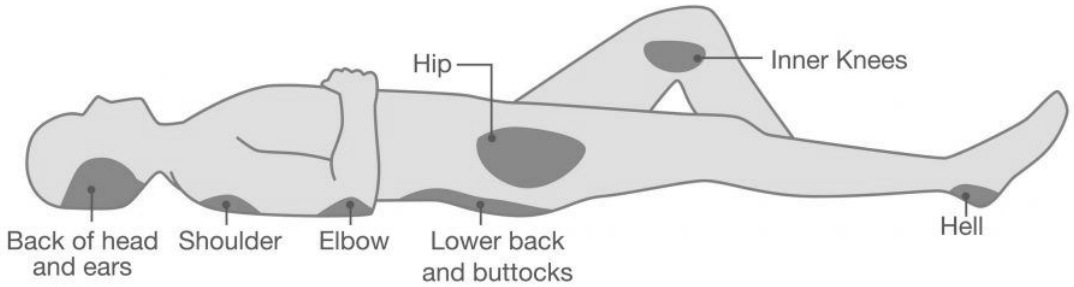
- Bartonella species are **transmitted by vectors** such as ticks, fleas, sand flies, and mosquitoes

- ***B. henselae*** is responsible for a disease acquired after exposure to cats (e.g., scratches, bites, contact with the contaminated feces of cat fleas): **cat-scratch disease,** 1–3 weeks after inoculation**.**

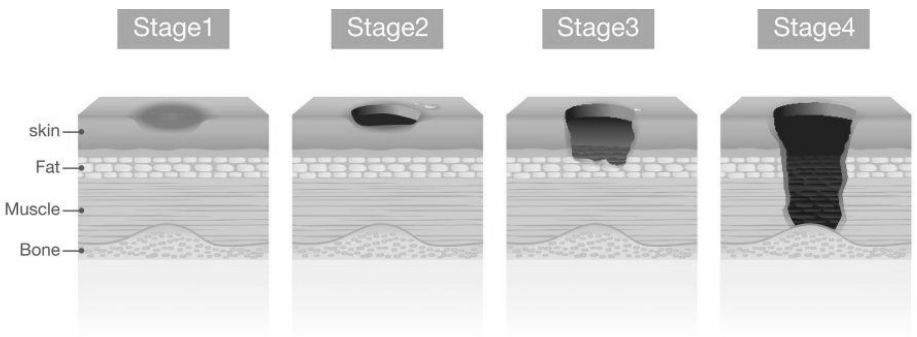
- Symptoms typically include a **non-painful bump or blister at the site of injury** and painful and **swollen lymph nodes**



Infectious complications of pressure-induced skin and soft tissue injury



PRESSURE SORES



PRESSURE SORES

Pressure ulcer.

Figure 3: Slough covered pressure ulcer, unstageable

Infectious complications of pressure-induced skin and soft tissue injury

Pressure ulcer.

Case study : Pressure ulcer on patient's right heel, with signs of sub-epidermal abscess and infection tracking down the foot (a); heel at first assessment, following surgical debridement as an inpatient, care continuing in nursing home with Octenilin, topical antibiotics, padding and elevation (b); wound 6 months after initial presentation, post surgical debridement, healing with continuing care (c); 9 months after the original presentation, the wound healed (d).

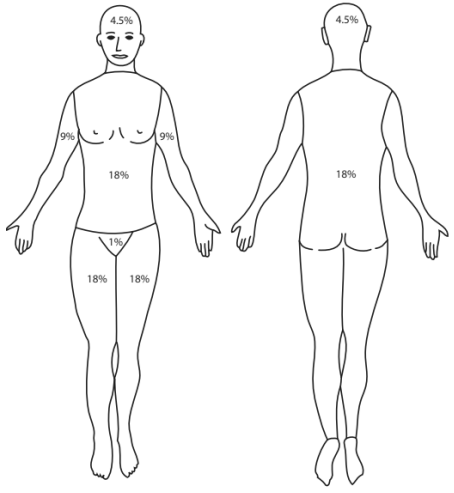
Burn wound infection and sepsis

Burn wound

- Infection remains the most common cause of morbidity and mortality in burn patients. The diagnosis and management of burn wound infection remains challenging due to the many physiologic features unique to burn injury.

- A variety of factors increase the risk of developing invasive burn wound infection (burn wound sepsis). Individuals who sustain a **TBSA burn >20 percent** are at particularly high risk; however, burn wound infection and sepsis can occur in smaller burns. Other risk factors include **delays in burn wound excision**, **extremes in age** (very old, very young), and **impaired immunity**. **Microbial factors**, such as type and number of organisms, enzyme and toxin production, and motility, also contribute

Figure 2. Infection of the hand caused by methicillin-resistant *Staphylococcus aureus*. Photo Credit: Gregory Moran, M.D., from the Center for Disease Control and Prevention.



Burn wound infection and sepsis/ Staphylococcal scalded skin syndrome caused by burn wound infection in an infant: A case report

- An 8-month-old boy burned by hot water had partial thickness burns on 10% of his total body surface area. He was admitted to hospital and received fluid therapy and wound care treatment. During hospitalization, he developed a high fever and exfoliation of the skin, except for the burns. He then received antibiotic infusion treatment daily. Three days after initiating antibiotic therapy, he had epithelization of the raw surface, except for his burns. Skin exfoliation affected 36% of the total body surface area.

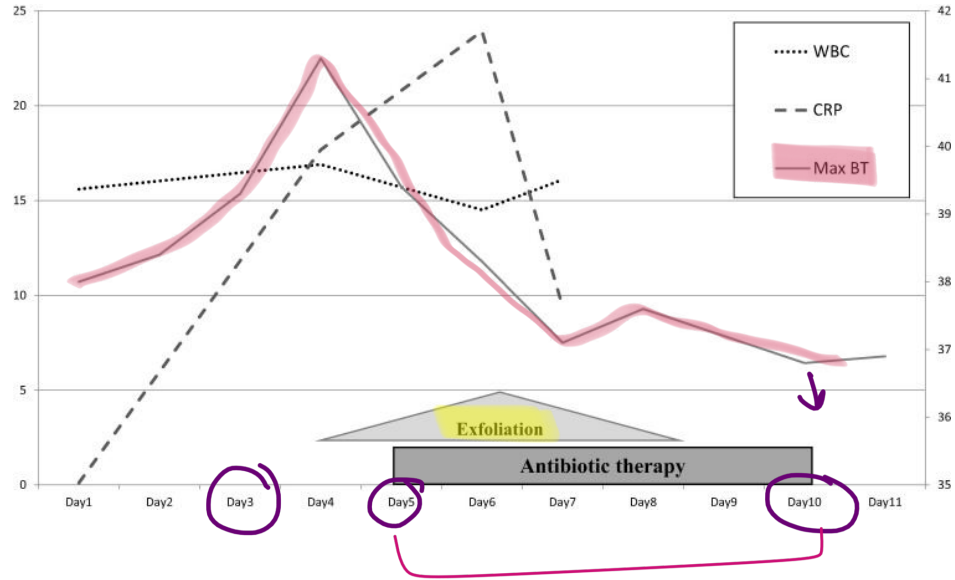
On Day 3, the patient's burn wounds show no infection.

By Day 5, the patient had sudden enlargement of the exfoliation.

By Day 7, the exfoliated area, excluding the burn wound, has formed scabs.

Burn wound infection and sepsis/ Staphylococcal scalded skin syndrome caused by burn wound infection in an infant: A case report

- Staphylococcal scalded skin syndrome developed 3 days after his being scalded.
- His exfoliative areas involved up to 36% total body surface area.
- His wounds without burns epithelized on day 10.
- Only burn wound swabs revealed **exfoliative toxin-positive Staphylococcus aureus.**



Tokyo, Japan) and covered with silver-containing polyurethane foam (Mepilex Ag; Mölnlycke Health Care AB, Götenborg, Sweden) on alternate days. On Day 2, he drank 600 mL water. Therefore, we decided to end fluid therapy on Day 2. On Day 3, his wound began to epithelize without infection (Fig. 2).

On Day 4, sudden epidermal exfoliation occurred on the abdomen and his body temperature rose to 39.3 °C. On Day 5, the exfoliation was larger (Fig. 3) and his body temperature further increased to 41.3 °C. Nikolsky's sign was positive around his chest. His blood examination showed his WBC was 16,900/μL and CRP level was 17.68 mg/dL. We suspected that he had SSSS.

We obtained culture swabs from his throat, arms, and chest, and we collected a blood sample. We started antibiotic therapy, which consisted of an intravenous drip injection of cefazolin and vancomycin. We also initiated fluid therapy because he had dehydration. The fluid therapy (800 mL/day; Ringer's solution) was restarted. On Day 6, all exfoliated areas were on the head and neck, chest, abdomen, both arms, and affected up to 36%TBSA. His blood examination showed his WBC was 14,500/μL and CRP level was 23.93 mg/dL. The CRP level was at its peak during this time. On Day 7, his epidermal exfoliation had become scabs (Fig. 4). The blood examination showed his WBC was 16,100/μL and CRP level was 9.40 mg/dL. On Day 10, his wounds were mostly epithelized (Fig. 5). We finished his antibiotic therapy and fluid therapy. While on fluid therapy, we were able to maintain his urinary volume over 1.5 mL/h. On Day 12, all of his wounds were healed. *Staphylococcus aureus* (ET^+) was cultured from a swab of the chest. *Staphylococcus aureus* (ET^-) and *Streptococcus* species were cultured from the swabs of both arms. No pathogen was cultured from the swabs of the throat or blood sample. We diagnosed SSSS.

All wounds are mostly epithelized (Day 10).