

Elective No.2

Name of Block	Block 1
Name of Elective	Bone infections
Location of hospital Lab or research facility	IPD / EMERGENCY
Name of internal preceptor(s)	Dr. Harpal Singh Selhi
Name of external preceptor (if applicable)	
Learning objectives of elective	1. Osteomyelitis 2. Management 3. Modalities of treatment
Number of students that can be accommodated in this elective	3 – 5
Prerequisites for elective	--
Learning resources for students	Text Book of Orthopedics by Maheshwar Manual on clinical surgery by S. Das
List of activities of student participation	1. History taking 2. Clinical examination 3. Diagnosis 4. Classification 5. Management
Portfolio entries required	Yes
Log book entry required	Yes
Assessment	1. Case Discussion 2. MCQ's
Other comments	

Dr. Harpal Singh Selhi

BONE INFECTIONS

INDRODUCTION

Bone infection also known as osteomyelitis. is an acute or chronic inflammatory process involving the bone and its structures secondary to infection with pyogenic organisms, including bacteria, fungi, and mycobacteria. Various methods that cause spread such as through bloodstream, fractures, or surgery.

In children, hematogenous osteomyelitis predominates and affects mostly long bones. In younger adults, osteomyelitis is often related to trauma or surgery. In older adults, the most common clinical presentations are contiguous osteomyelitis related to joint arthroplasty, lower extremity osteomyelitis related to diabetes mellitus and vascular disease, and osteomyelitis related to decubitus ulceration.

Healthy intact bone is resistant to infection. The bone becomes susceptible to disease with the introduction of a large inoculum of bacteria, from trauma, ischemia, or the presence of foreign bodies because bone sites to which microorganisms can bind are exposed. Some bacteria create a protective biofilm coating around themselves and underlying surfaces. This characteristic of some bacteria to adhere to the bone and surgically implanted devices following which they express phenotypic resistance to antibiotic therapy and their ability to survive intracellularly may explain the persistence of bone infections and high failure rates of shorter courses of antimicrobial treatment

Hematogenous osteomyelitis of the long bones usually affects the metaphysis. Slowing of blood flow in vascular loops at the metaphysis near the epiphyseal plates leads to deposition of microbes and establishment of infection. An inflammatory response ensues, leading to increased pressure in the medullary bone. This pressure causes the infection to break through to the cortex and, if unchecked, ultimately through the periosteum. This can lead to decreased blood supply to the periosteum with bone necrosis

Diagnosis is made by a combination of clinical examination, supportive blood testing, and appropriate radiography. With these elements in place, patient presentation can be placed in the framework of a staging system, which often helps to suggest the appropriate mix of antimicrobial and surgical therapies.