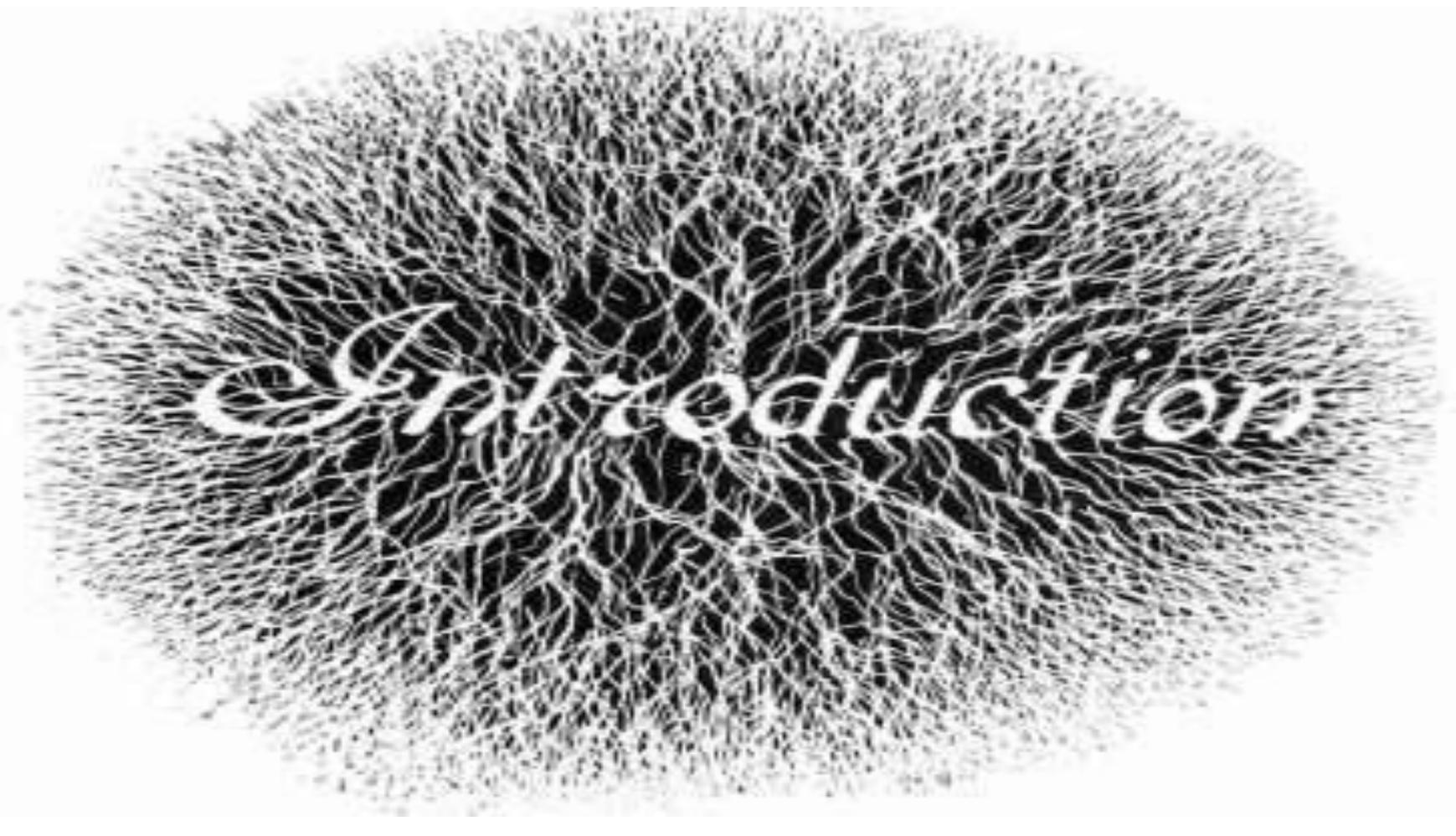


DESIGNERS CREATIONS

# Good Afternoon!

*Created by  
Lorriel*

**MyScraps.co.in**



*Introduction*

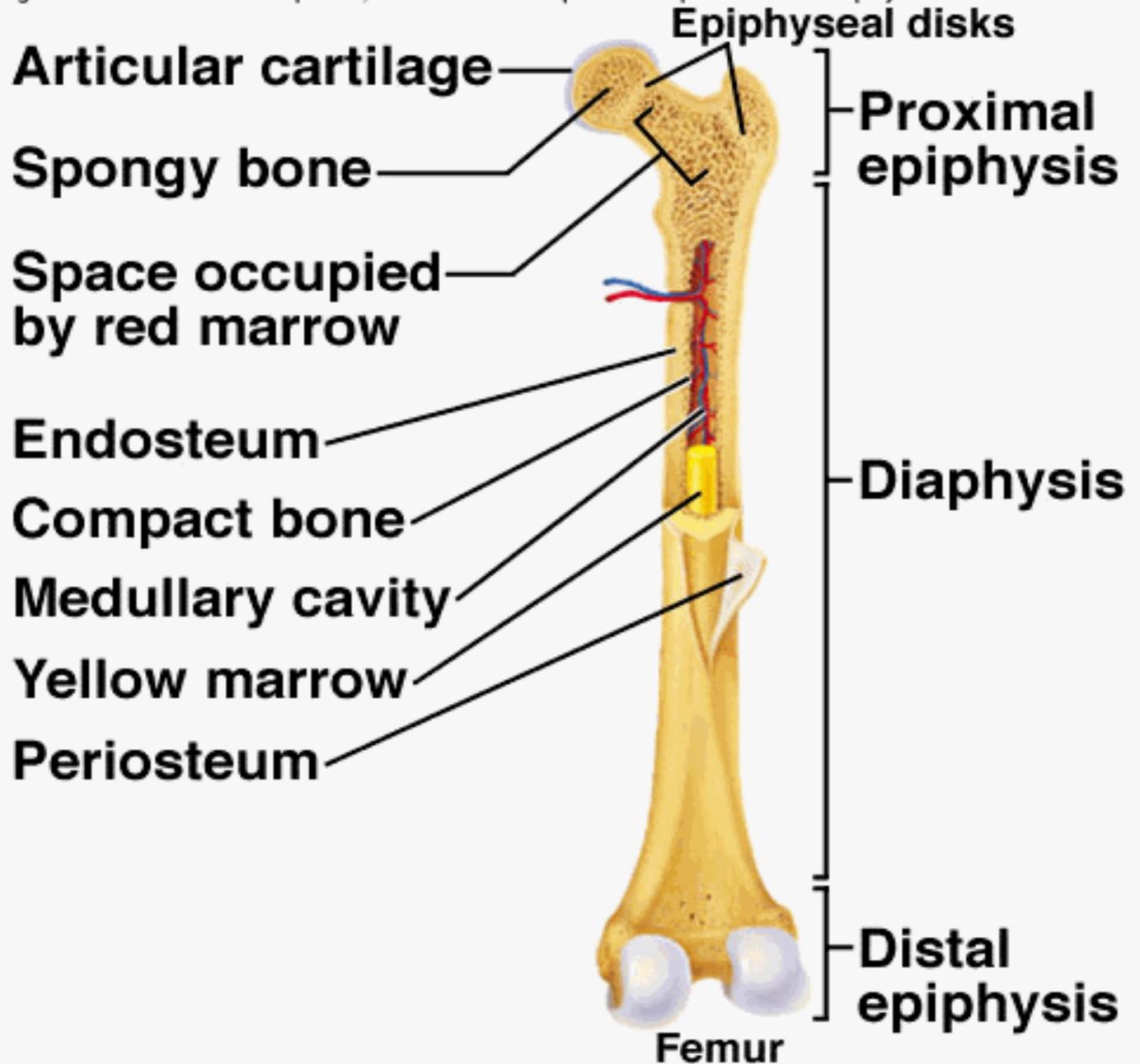
The word Osteomyelitis is derived from Greek Words

Osteo :- Bone

Myelo :- Marrow

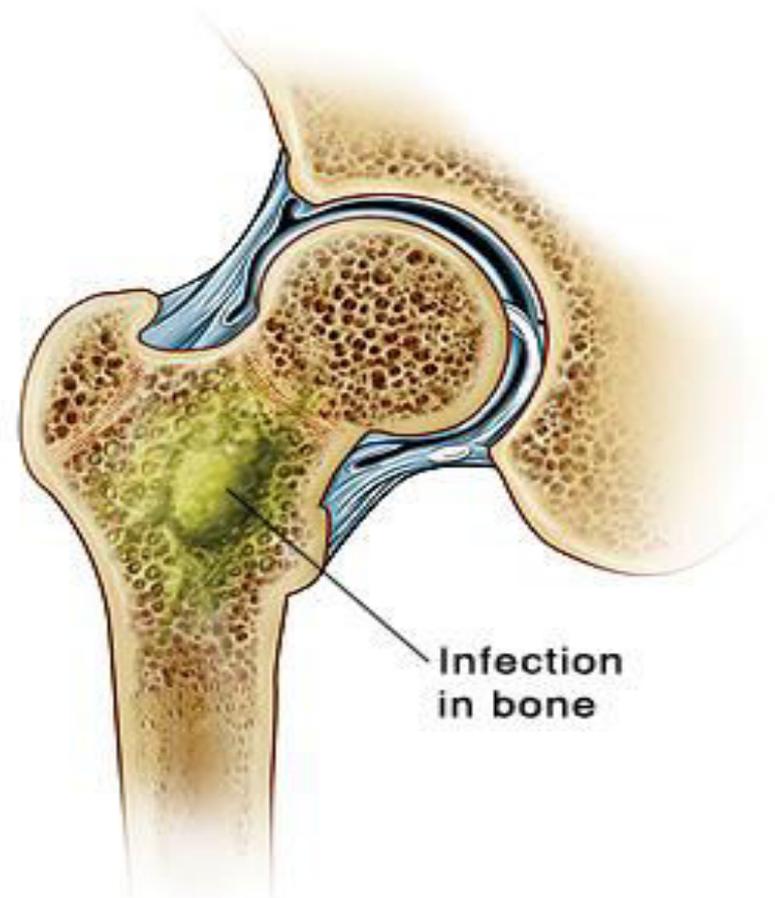
Itis :- Inflammation

# Long Bone



# Definition

“Osteomyelitis is a severe infection of the bone , bone marrow and surrounding tissue.”



# **Incidence**

**Overall prevalence :-**

- **1 case / 5000 children**
- **1 case / 1000 neonates**
- **2.4 cases / 1,00,000 population**

**Patient with**

- **Sickle cell anemia – 0.36 %**
- **Diabetes mellitus - 30 - 40 %**
- **After punctures - 16%**

# Etiology

Organism	Possible Predisposing Problems
Staphylococcus Aureus	Pressure ulcer , penetrating wound , Open fracture , Orthopedic surgery.
Staphylococcus Epidermidis	Indwelling prosthetic devices like Joint replacement, fracture fixation devices .
Streptococcus Viridans	Abscessed tooth , Gingival disease
Escherichia Coli	Urinary tract infection

# Cont....

<b>Organism</b>	<b>Possible Predisposing Problems</b>
Mycobacterium Tuberculosis	Tuberculosis
Neisseria Gonorrhoeae	Gonorrhoea
Pseudomonas	Puncture wound , Intravenous drug use
Salmonella	Sickle cell disease
Fungi , Mycobacteria	Immunocompromised host

# **Types**

- ❖ **Acute Osteomyelitis**
- ❖ **Chronic Osteomyelitis**

# PATHOPHYSIOLOGY

Due to any etiological Factors



Microorganisms enter bone (Phagocytosis).



Phagocyte contains the infection



Leukocytes enters the infected area and attempt to engulf with the micro-organism



Release enzymes



Lyse bone

Pus spreads into vascular channels



Raising intraosseous pressure



Impairing blood flow



Chronic ischemic necrosis



Separation of large devascularized fragment and  
form Sequestra



New bone formation  
(involucrum )

## Sequestrum serves as an island of infection



Sequestrum some times move out of the bone to the soft tissues & Micro-organisms can spread to other sites



The sequestrum may be revascularize and undergo normal immune process or can be surgically removed by debridement



If not removed , develop a sinus tract resulting in purulent continuous drainage.



Avascular scar tissue formation in chronic cases which is impenetrable by antibiotics

# **Clinical Manifestations**

## **Acute Osteomyelitis**

- **Systemic Manifestations**
  - **Fever , chills**
  - **Night sweats , Restlessness**
  - **Nausea , malaise**
- **Local Manifestations**
  - **Pain , swelling , tenderness ,warmth**
  - **Drainage from sinus**

# Chronic Osteomyelitis

- Systemic infestations may be diminished.
- Local manifestations include
  - Pain
  - swelling
  - tenderness
  - warmth

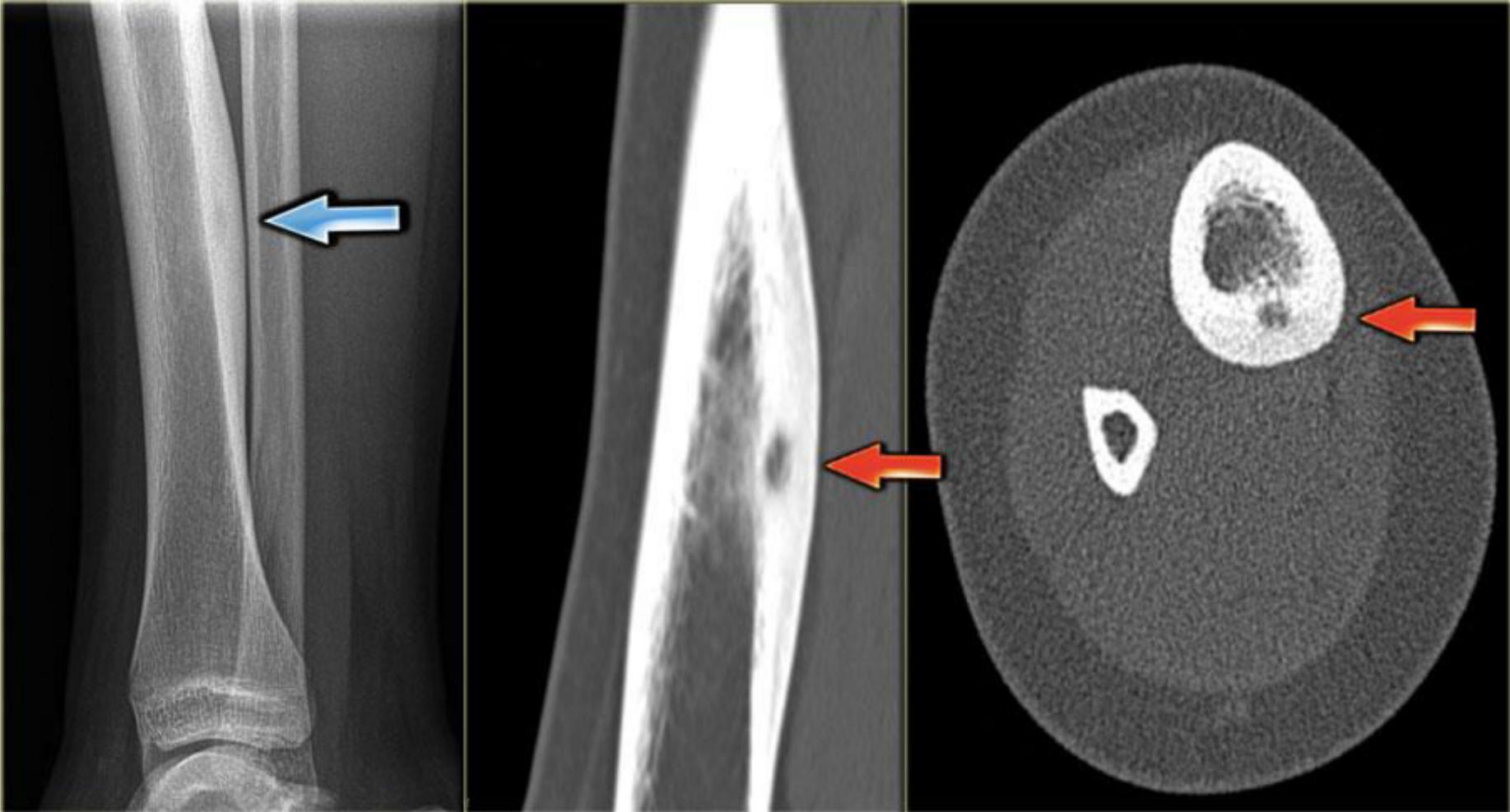
# Diagnostic Evaluation

- History collection
- Physical examination
- X-ray
- Ultrasound Scans
- Computed Tomography & Magnetic Resonance Imaging
- Complete blood count
- Blood culture and sensitivity
- Biopsy

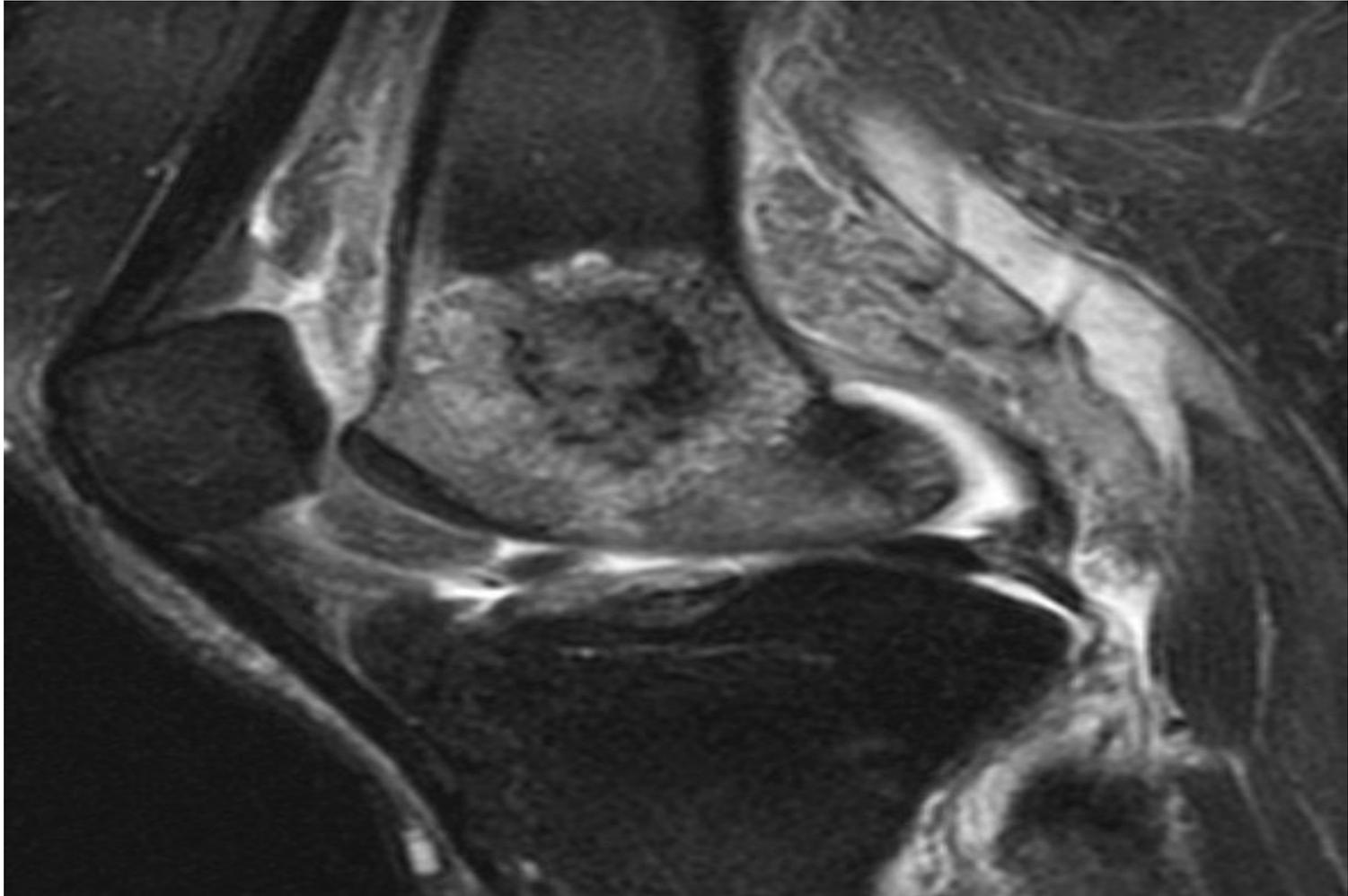
# X-ray



# C.T. Scan



# M.R.I.



# Management

## Pharmacological management

### ➤ Antibiotics

- Penicillin , Naficillin , Neomycin , Vancomycin , Cefazolin , Gentamycin , Tobramycine

### ➤ Analgesics

### ➤ Diabetic control

### ➤ Blood supply management

### ➤ Symptomatic treatment

# Surgical Management

- **Bone debridement**

Removal of devascularated or dead bone tissue and the space left is filled with ' bone graft ' or packing material that promotes new bone tissue like antibiotic impregnated polymethylmethacrylate bead chains.

- Infection of any artificial prosthesis may need surgery to remove the prosthesis and surrounding affected area. New prosthesis may be implanted at the same surgery itself

# COMPLICATIONS

- Abscess
- Need for Amputation
- Reduced limbs and joint function
- Spread of infection to surrounding tissues or blood stream.

# PROGNOSIS

Prognosis is good for acute osteomyelitis but worse for chronic cases.

Prognosis depends upon

- Health of the Patient
- Type of infection
- Whether the infectious part can be safely removed

# **Nursing Management**

## **ASSESSMENT**

### **Nursing Diagnosis**

- **Acute pain related to inflammation and swelling**
- **Activity intolerance related to impaired physical mobility secondary to pain , immobilization devices**
- **Risk for further infection : bone abscess formation**
- **Knowledge deficit regarding disease condition**



CONCLUSION

# **Assignment**

“ Write an assignment on nursing management of osteomyelitis. ”

# **Reference**

**Suddarth and Brunner , Text book of medical and surgical nursing , 10<sup>th</sup> Edition , Lippincott Williams and Wilkins , Philadelphia , 2008 ,**

**Page no:- 2059 – 2062.**

