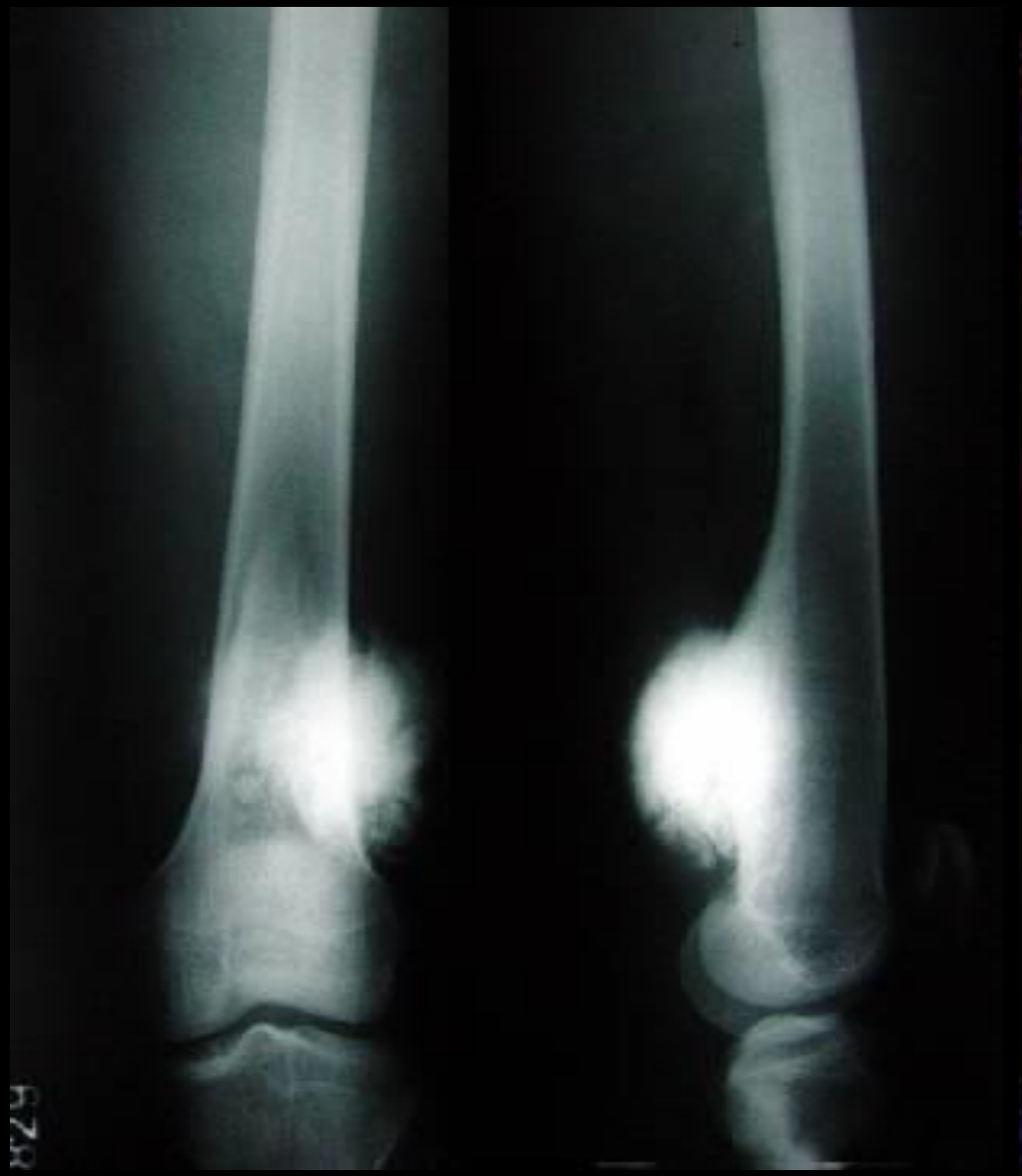
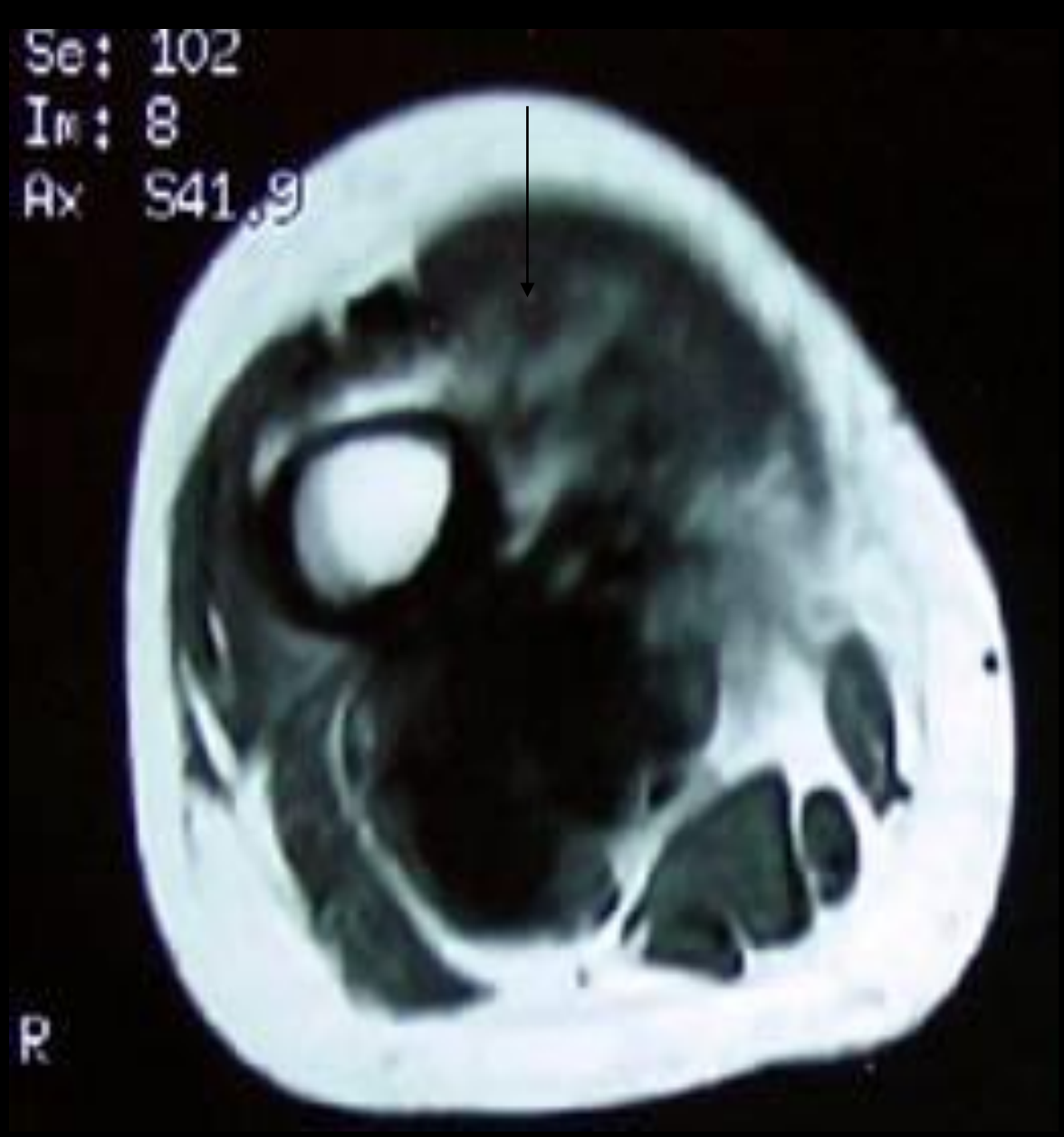
# MICOD – 24/06/2024
# Case contributor – Dr. Nirmala Jambhekar

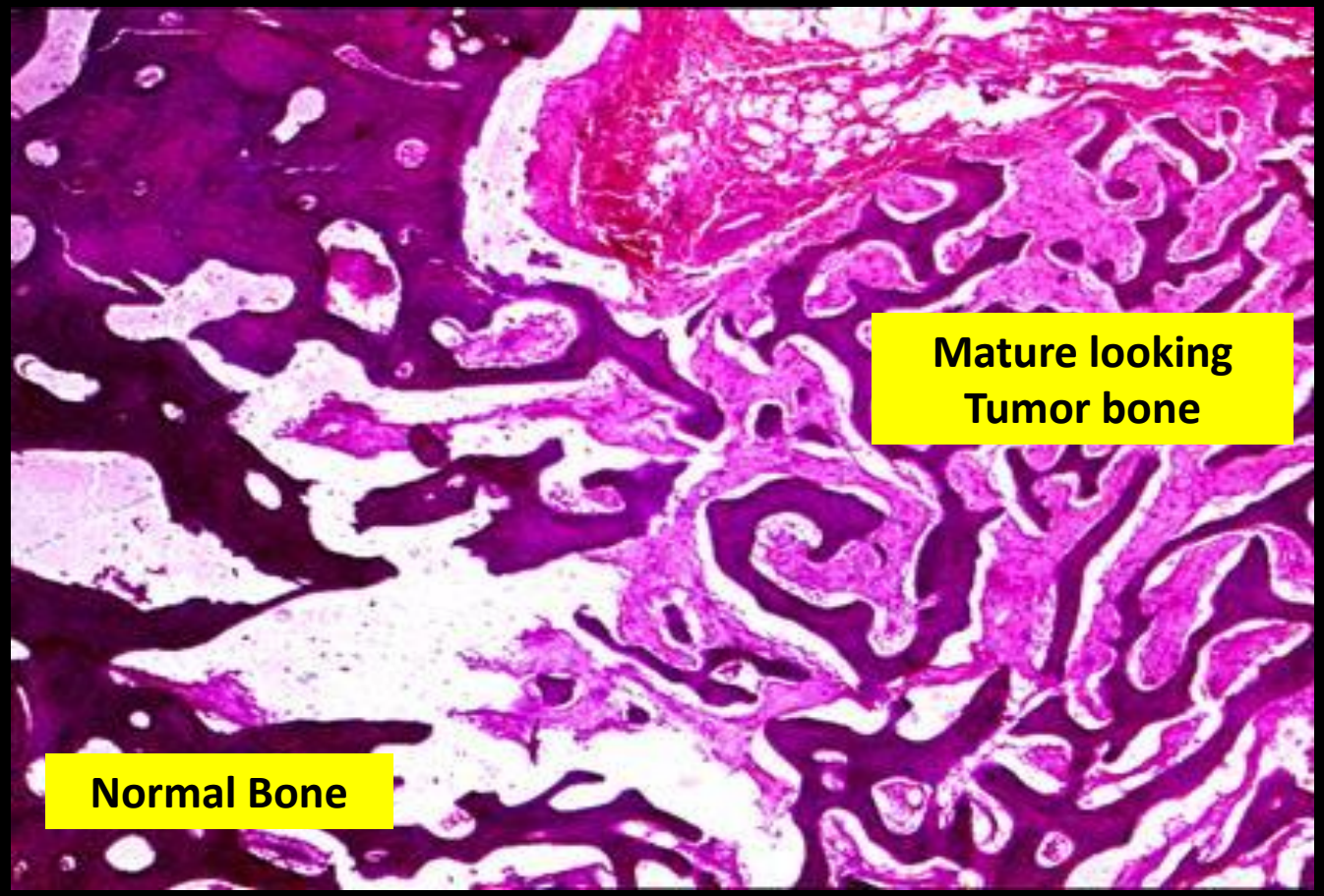
# Parosteal Osteosarcoma





*Kumar VS, Barwar N, Khan SA. Surface osteosarcomas: Diagnosis, treatment and outcome. Indian J Orthop. 2014 May*

# Parosteal Osteosarcoma




- Surface osteosarcomas are a rare form of osteosarcomas (OS) ~ 3-6% of all OS & occur at later age compared to conventional OS
- Three major groups of surface osteosarcomas
  - ✓ Parosteal OS (low grade & most common)
  - ✓ Periosteal OS (intermediate grade)
  - ✓ High grade surface OS
- Parosteal & periosteal OS are distinct clinical entities and it is important to identify the clinico radiological differences between the two types
- Classical site is lower end of the femur followed by the upper end of tibia and upper end of humerus
- Periosteal variant affects the tibia more commonly than the parosteal variety

*Kumar VS, Barwar N, Khan SA. Surface osteosarcomas: Diagnosis, treatment and outcome. Indian J Orthop. 2014 May*

# Parosteal Osteosarcoma

| Charecteristic | Parosteal osteosarcoma | Periosteal osteosarcoma | High grade surface osteosarcoma |
|---|---|---|---|
| Grade | Usually low grade | Intermediate grade | High grade |
| Age of affection | Between 20 and 30 years | Between 18 and 20 years | Between 20 and 30 years |
| Gender | More common in females | Common in males (as compared to parosteal type) | Common in males |
| Site of affection | Posterior aspect of the distal femur is the commonest site | Metaphysio-diaphyseal portion of the tibia | Mid femur, distal femur, mid tibia (in order) |
| Radiological picture | Sclerotic lesion over the surface of bone with thickening of the cortex and presence of a periosteal line between the tumor and the normal bone (string sign) | Broad based soft tissue mass with destruction of underlying bone with perpendicular periosteal reaction going into the soft tissue mass | Lesion attached to the host bone with a broad base with dense to moderate mineralization with a fluffy, immature appearance noted prominently at the base of the lesion. Lucent zone and perpendicular periosteal reaction are absent |
| Histopathology | Characterized by being well differentiated with malignant osteoid formation and a spindle cell stroma. Most tumors are Grade 1 lesions | Shows lobulated islands of malignant cartilage and areas of moderately high grade spindle cells located peripherally | Shows areas of malignant spindle cells with a high degree of cellular atypia (Grade 3 or 4 lesion) and variable amount of osteoid formation |
| Treatment | Minimal role of neo-adjuvant chemotherapy. Upfront surgery is the standard of care. Dedifferentiated tumors are high grade lesions that need to be treated like conventional osteosarcoma | Role of chemotherapy is controversial. Wide excision is the preferred local therapy | Neo-adjuvant chemotherapy followed by surgery |

# Thank you