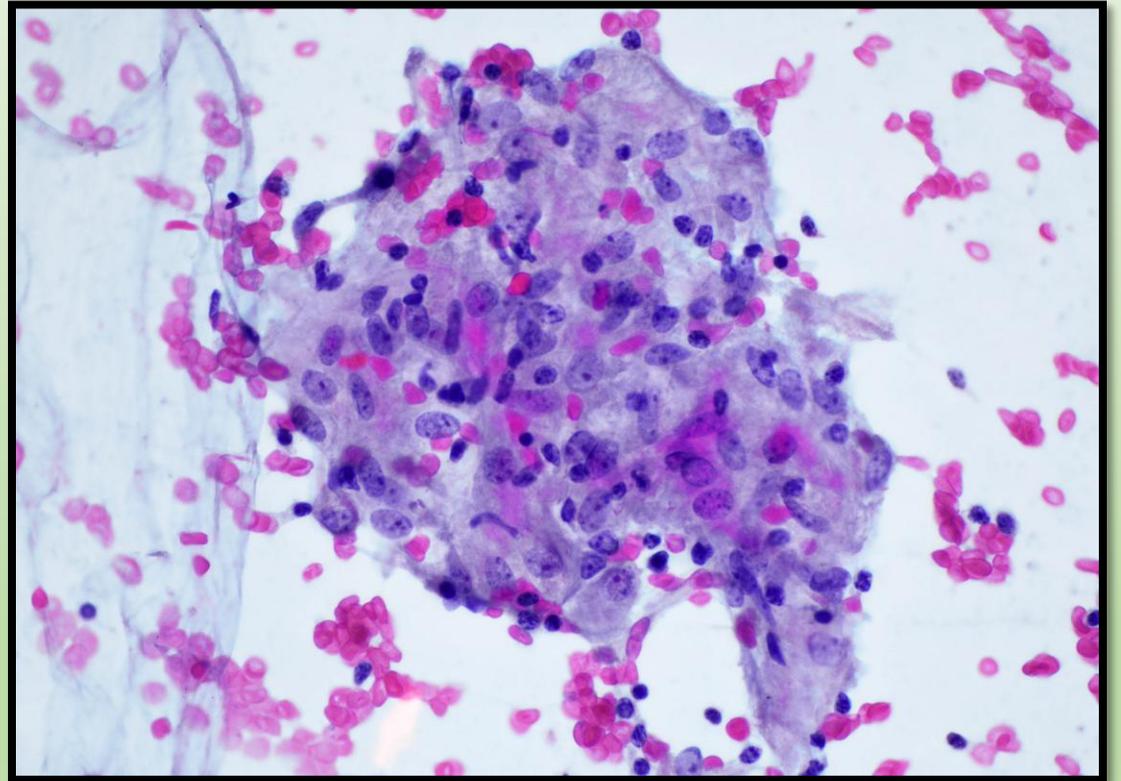
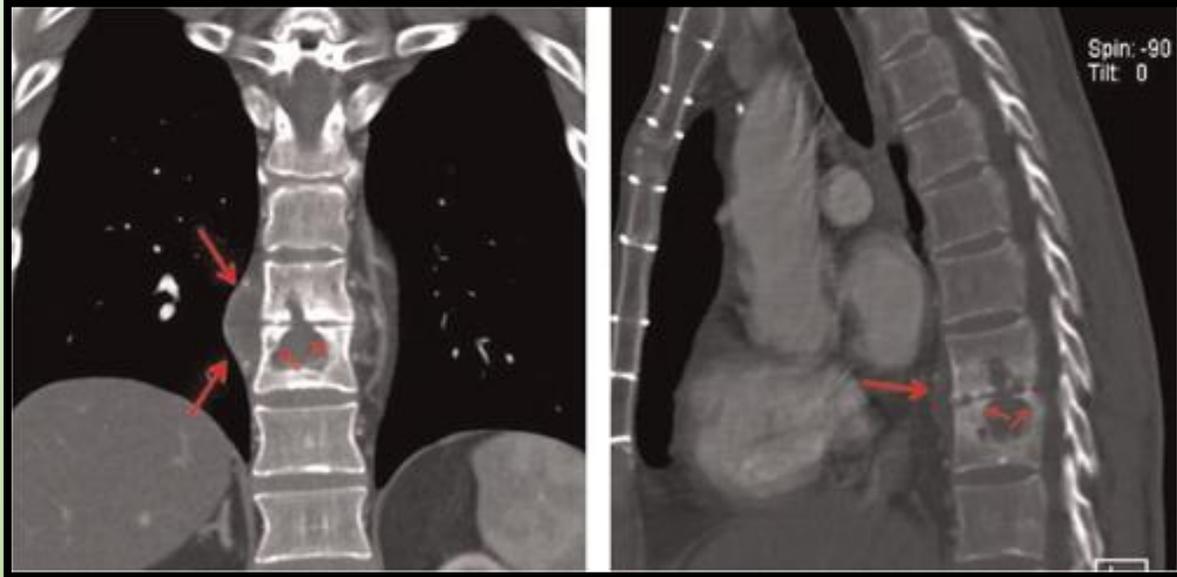


CASE DISCUSSIONS
MSS (CASES 4-7)
2026 Al-Abbadi
University of Jordan
School of Medicine

CASE 4

A 28-year-old man presents with 3 months of back pain, low-grade fever, night sweats, and weight loss. Examination shows localized tenderness over the lower thoracic spine and mild kyphosis. ESR is elevated. MRI spine shows destruction of T9–T10 vertebral bodies with paravertebral abscess formation. FNA done.

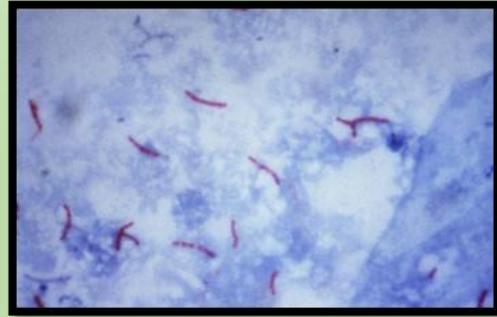
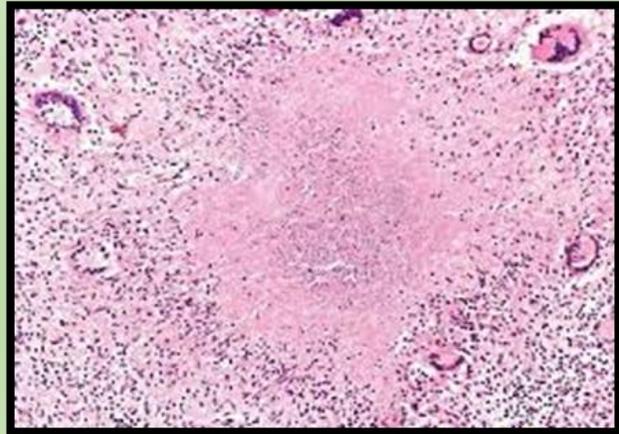
MRI & FNA SMEAR:



Discussion points:

- **Q1. What is the most likely diagnosis?**
- **Q2. What is the most common route of spread to the spine?**
- **Q3. Which spinal region is most commonly affected?**
- **Q4. What is the characteristic imaging finding?**
- **Q5. What is the mainstay of treatment?**

Q1. What is the most likely diagnosis?



ANSWER:

**Pott disease
(tuberculous
spondylitis)**

Q2. What is the most common route of spread to the spine?

ANSWER:

**Hematogenous spread from
primary pulmonary TB**

**Q3. Which spinal region
is most commonly
affected?**

ANSWER:

Thoracic spine (most common), followed by lumbar spine

**Q4. What is the
characteristic
imaging finding?**

ANSWER:

- **Vertebral body destruction**
- **Disc space narrowing (late)**
- **Paravertebral “cold” abscess**
- **Gibbus deformity in advanced disease**



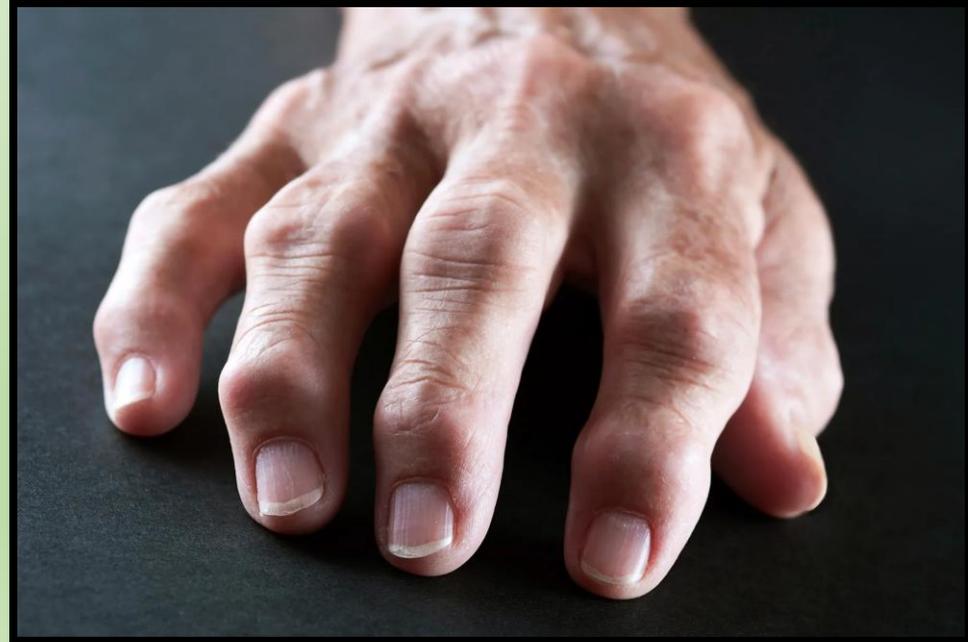
**Q5. What is the
mainstay of
treatment?**

ANSWER:

- 1. Anti-tuberculous therapy (RIPE regimen initially)**
- 2. Surgery if neurological deficit or spinal instability**

CASE 5

A 42-year-old woman presents with morning stiffness lasting >1 hour and symmetric pain in MCP and PIP joints for 6 months. Exam shows joint swelling and tenderness. Labs show positive RF and anti-CCP antibodies. X-ray shows periarticular osteopenia and marginal erosions.



DISCUSSION POINTS:

Q1. What is the pathologic hallmark lesion in RA?

Q2. Which antibodies are most specific for RA?

Q3. What cytokine plays a major role in RA pathogenesis and is targeted by biologics?

Q4. What is the most common extra-articular manifestation?

Q5. What is first-line disease-modifying therapy?

**Q1. What is the
pathologic hallmark
lesion in RA?**

ANSWER:

**Pannus formation
(inflamed granulation
tissue destroying
cartilage and bone)**

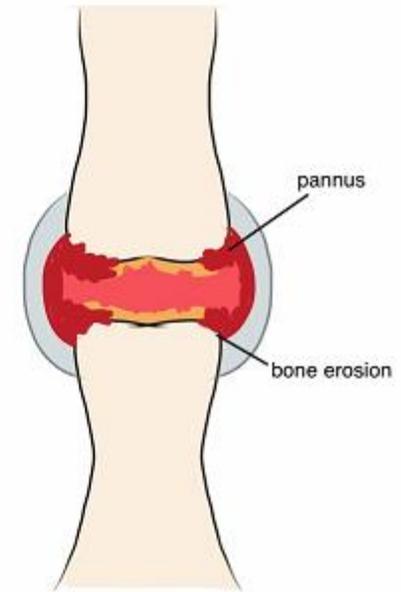
Normal Joint



Synovitis



Erosion



**Q2. Which
antibodies are most
specific for RA?**

Answer:

ANSWERS:

**Anti-CCP
Antibodies**

Q3. What cytokine plays a major role in RA pathogenesis and is targeted by biological agents?

ANSWER:

TNF-alpha (also IL-6)

Q4. Q4. What is the most common extra-articular manifestation?

ANSWER:

**Rheumatoid
nodules**



**Q5. What is first-line
disease-modifying
therapy?**

ANSWER:

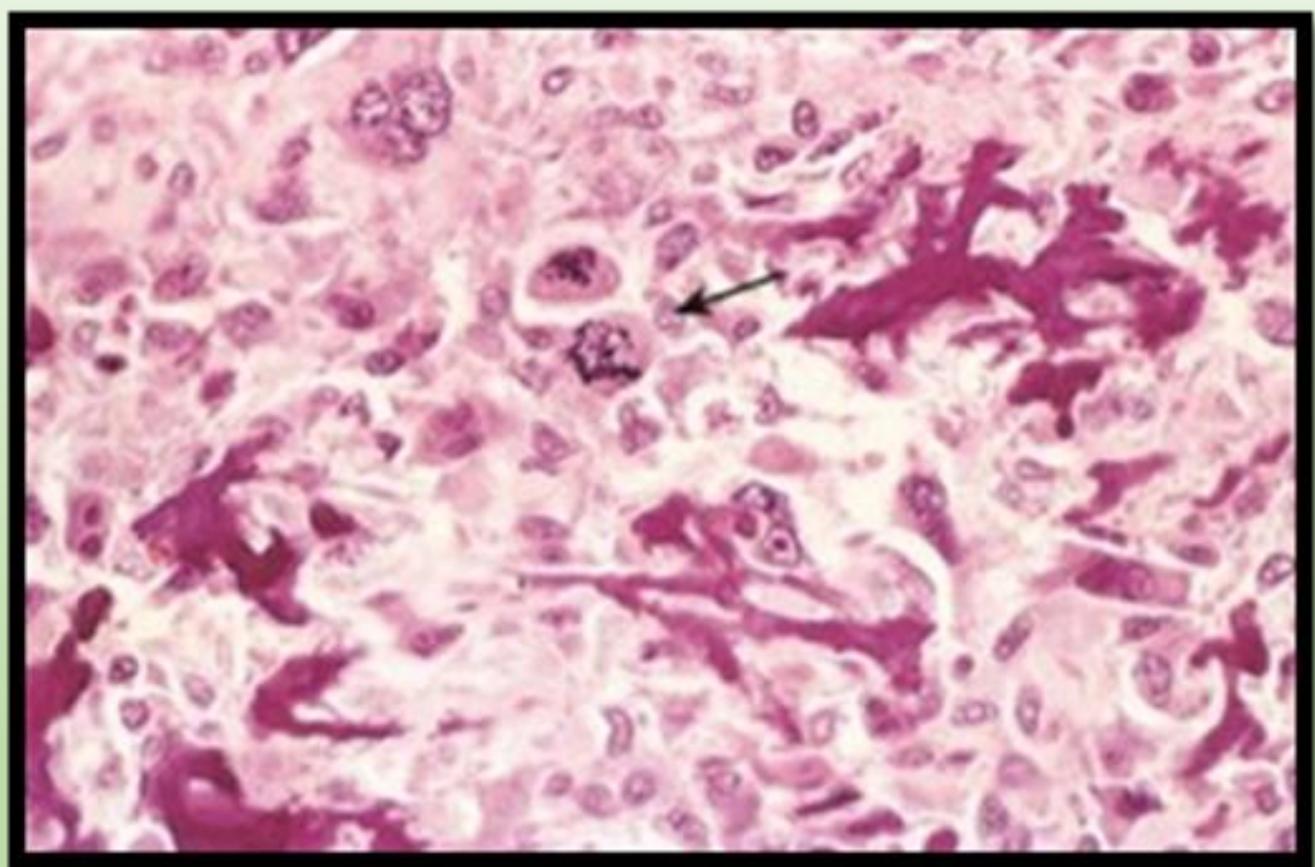
Methotrexate

Teaching Pearl:

**RA primarily affects
synovium → cartilage
destruction → bone
erosion → ankylosis
(late).**

Case 6

A 16-year-old boy presents with progressive pain and swelling around the knee. X-ray shows a metaphyseal lesion in distal femur with sunburst periosteal reaction and Codman triangle. Biopsy shows malignant cells producing osteoid.



DISCUSSIONS POINTS:

- **Q1. What is the most common primary malignant bone tumor in adolescents?**
- **Q2. What is the most common site?**
- **Q3: What genetic mutations are associated with OS?**
- **Q4. What is the most common site of metastasis?**
- **Q5. What is the diagnostic histologic feature?**

Q1. What is the most common primary malignant bone tumor in adolescents?

ANSWER:

OSTEOSARCOMA

**Q2. What is the most
common site?**

ANSWER:

Metaphysis of long bones, especially around the knee (distal femur, proximal tibia)

Q3. What genetic mutations are associated with Osteosarcoma?

ANSWER:

- **RB gene mutation**
- **p53 mutation (Li-Fraumeni)**

Q4. What is the most common site of metastasis?

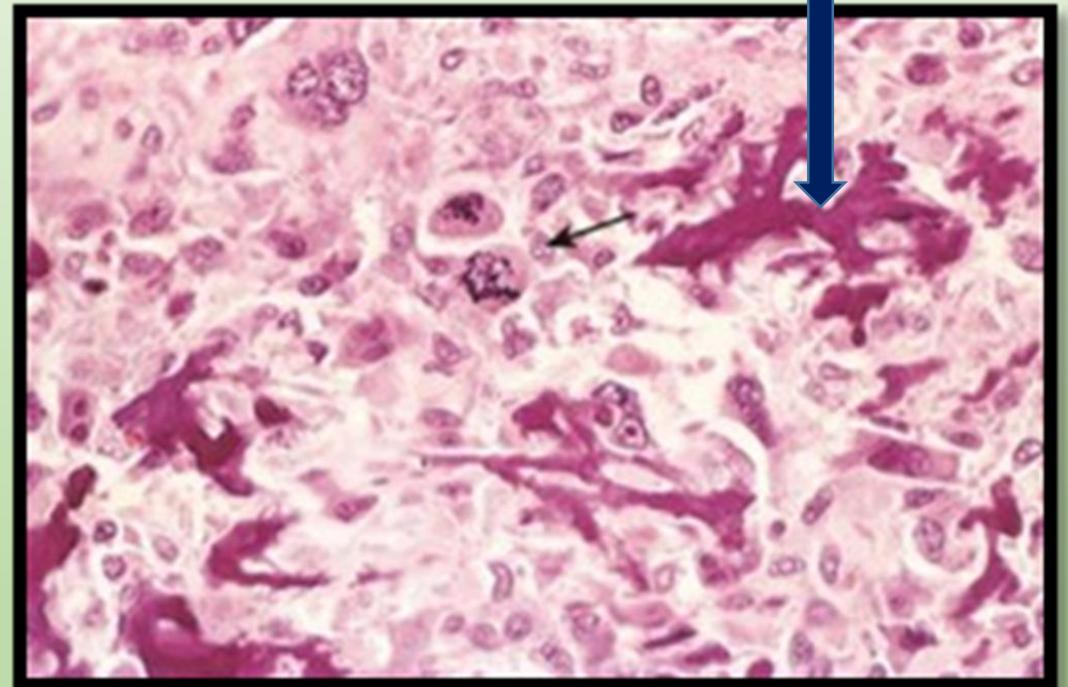
ANSWER:

**Lungs
(Hematogenous
spread)**

**Q5. What is the
diagnostic histologic
feature?**

ANSWER:

**Malignant
osteoid
production**

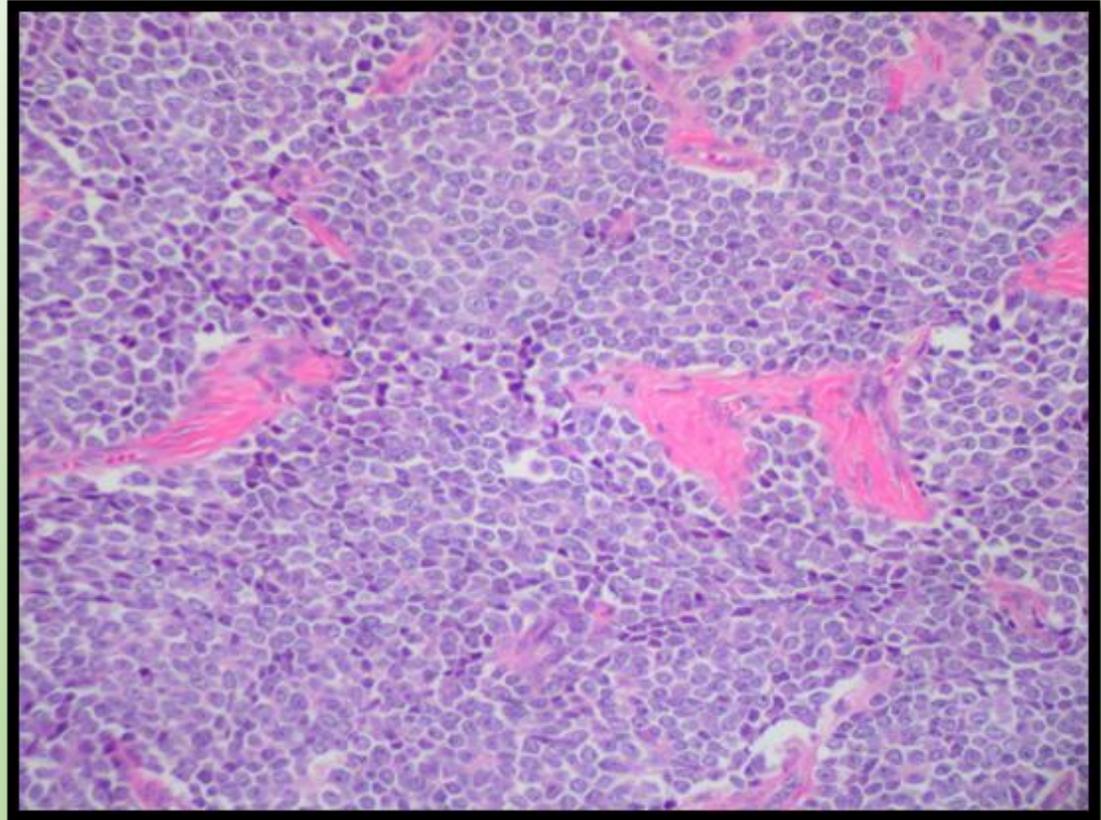


Teaching Pearl:

Think osteosarcoma in teenager + metaphysis + aggressive periosteal reaction + malignant osteoid on biopsy.

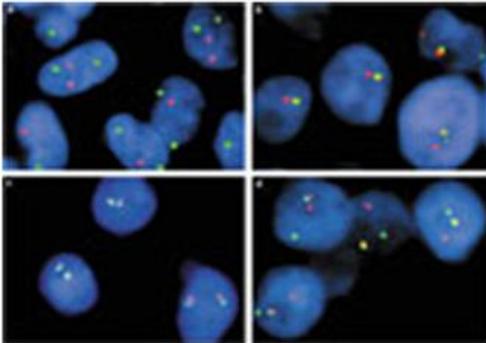
Case 7:

A 12-year-old boy presents with fever, bone pain, and swelling in the mid-shaft of the humerus. X-ray shows a lamellated (onion-skin) periosteal reaction. Biopsy shows small round blue cells. Cytogenetics reveals t(11;22).

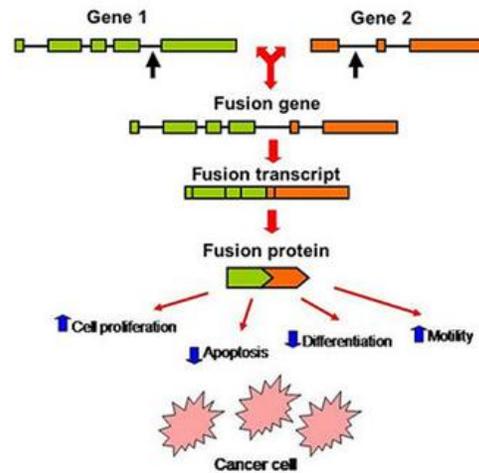


Positive translocation of EWS gene:

EWS FLI1 t(11;22)(q24;q12)
EWS FLI2 t(21;22)(q22;q12)

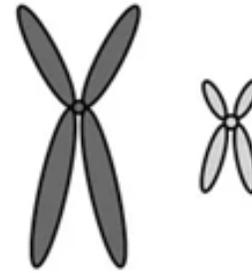


Pozit. EWS/FLI1 - FISH



Normal

11 22



Ewing's sarcoma
t(11;22)(q24;q12)



Activation domain

DNA binding

Reciprocal Translocation:

Lost in some tumors



Activation domain

RNA binding

DISCUSSIONS POINTS:

- **Q1. What is the most likely diagnosis?**
- **Q2. What is the most characteristic genetic abnormality?**
- **Q3: What bones are commonly involved?**
- **Q4. Why it is commonly mistaken for infection?**
- **Q5. What immunohistochemical marker is usually positive?**

Q1. What is the most likely diagnosis?

ANSWER:

EWING SARCOMA

**Q2. What is the most
characteristic
genetic abnormality?**

ANSWER:

**t(11;22) → EWS-FLI1
fusion gene**

Q3. What bones are commonly involved?

ANSWER:

**Diaphysis of long
bones, pelvis, ribs**

**Q4. Why is it
sometimes mistaken
for infection?**

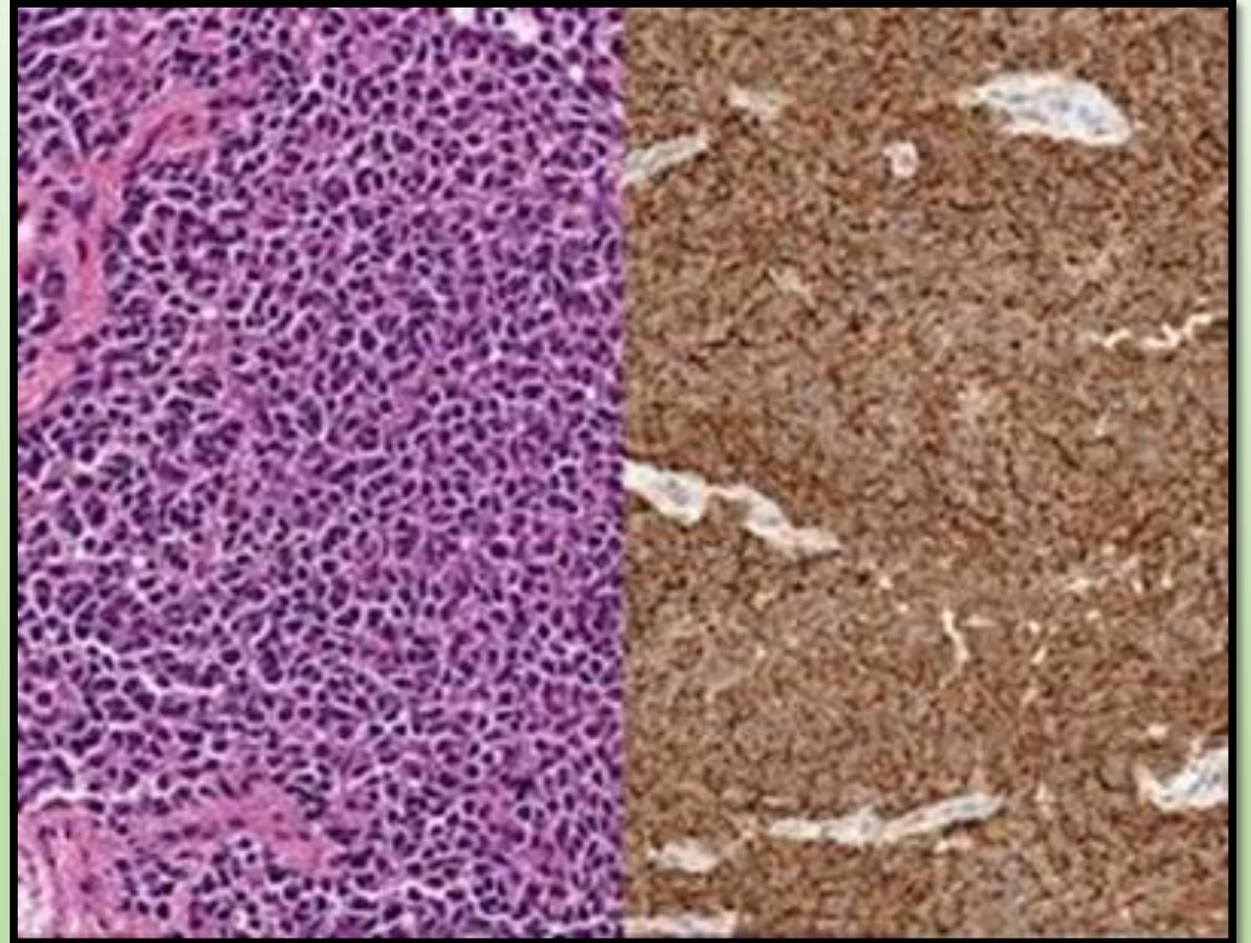
ANSWER:

**Because of fever,
leukocytosis, and
elevated ESR**

Q5. What immunohistochemical marker is typically positive?

ANSWER:

**CD99
(MIC2)**



Teaching Pearl:

**Child + diaphysis + onion
skin periosteal reaction +
small round blue cells +
t(11;22) = Ewing sarcoma**