SPECTRUM OF SEPTIC ARTHRITIS AND OSTEOMYELITIS IN NEONATES

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PAEDIATRIC ORTHOPAEDIC SURGEON

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AIMS AND OBJECTIVES

- Pre disposing factors
- Sites involved
- Best method for diagnosis
- Operative procedure
- Organisms and sensitivity
- Duration of antibiotics
- Residual effects

Patients and Methods

- Retrospective study of 25 neonates diagnosed with osteomyelitis and septic arthritis with a minimum followup of 9 months

RESULTS

- Age: 10 days – 30 days (mean 20 days)
- Predisposing conditions- pre term, LBW, pneumonia, superficial abscess
- Symptoms: not moving a limb (mean 3 days) and swelling. Fever was present in only 25% cases

RESULTS

- 20 children had only septic arthritis
- 3 children had septic arthritis with diaphyseal involvement
- 2 children had only osteomyelitis with no abscess

SITES

- Hips – 18
- Knee – 5
- Shoulder-4
- Elbow-1
- Ankle-1
- Clavicle-1
- Ribs -1
- Multiple joint involvement - 7 (28%)

Blood investigations

- WBC counts -15,000-75,000
- Blood Culture

1. Sterile in 5 children
2. co-related with pus culture report in 15 children
3. Did not co relate with pus culture in 5 neonates

Method for diagnosis

- USG- Sensitivity- 100% , Specificity 95%

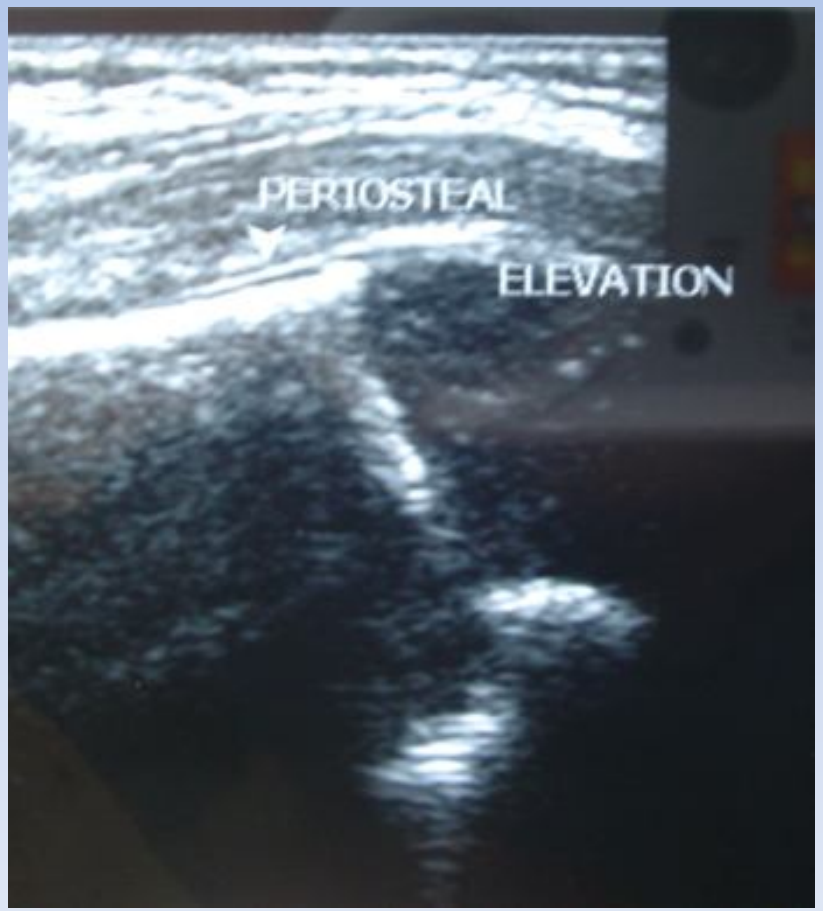
•Fluid/pus/septae

•Ossific nucleus

•Periosteal elevation

•Dislocation of hip

•Specificity decreased in post operative USG



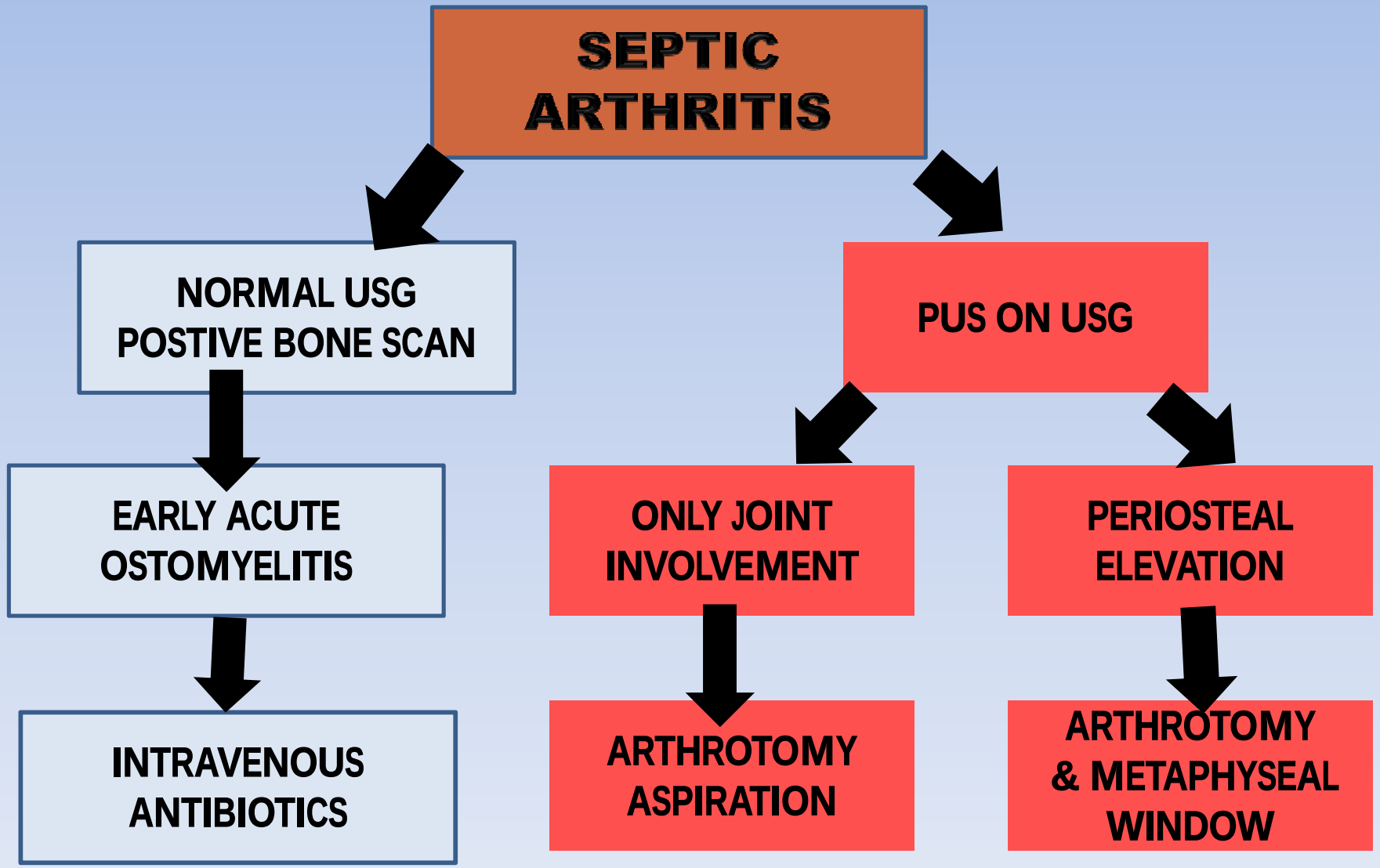
METHOD FOR DIAGNOSIS

- RADIOGRAPH

•BONE SCAN – perform

•MRI

MANAGEMENT


SEPTIC ARTHRITIS
NORMAL USG POSTIVE BONE SCAN
EARLY ACUTE OSTOMYELITIS
INTRAVENOUS ANTIBIOTICS
PUS ON USG
ONLY JOINT INVOLVEMENT
ARTHROTOMY ASPIRATION
PERIOSTEAL ELEVATION
ARTHROTOMY & METAPHYSEAL WINDOW

APPROACH

- HIP- between sartorius and tensor fasia lata
- KNEE-anterolateral
- SHOULDER- deltopectoral groove
- ELBOW- lateral
- ANKLE- anterior
- CLAVICLE/RIBS- on bone

PROCEDURE

- Capsulotomy
- Identify and locate articular cartilage
- Metaphysio diaphyseal window in 2 cases of femur and one case of tibia
- Wash given with hydrogen, betadine and saline
- Local antibiotic insertion (vancomycin/ gentamycin)
- Closure in layers with drain
- Immobilized in plaster or splint:2-3 weeks

POST OPERATIVE PROTOCOL

- Intravenous Antibiotics- 3-6 weeks
- Oral antibiotics
- Immunoglobulins in multiple joint involvement
- Weekly WBC count and CRP
- Radiographs 2-4 weeks

Culture Report

ORGANISM	SENSITIVITY
STAPHYLOCOCCUS AUREUS	CLOXACILLIN, CEPHALOSPORINS, VANCOMYCIN, LINEZOID
STREPTOCOCCUS	AS ABOVE
KLEBSIELLA PNEUMONIA	MEROPENUM, IMIPENUM, AMIKACIN, COLISTIN

Antibiotics to be avoided- TIGICYCLIN, CIPROFLOXACIN

RESULTS

JOINT	EXCELLENT	POOR
HIP	16	2
KNEE	4	1
SHOULDER	3	1
ANKLE/CLAVICLE/ RIB/ELBOW	ALL	NIL

Multiple joint involvement with septic embolization of brachial artery

At presentation

After 1 year

Multiple joint involvement with septic embolization of brachial artery

Radiographs at 1 year follow up

Case 2-Septic arthritis with osteomyelitis

At presentation

6 months post surgery

Case 3-Septic arthritis with osteomyelitis

At presentation

1 month

6 months

Shortening with non union at neck

1 year after surgery

Clinical photo


R

Knee septic arthritis and osteomyelitis

Radiographs at presentation

Epiphyseal bar

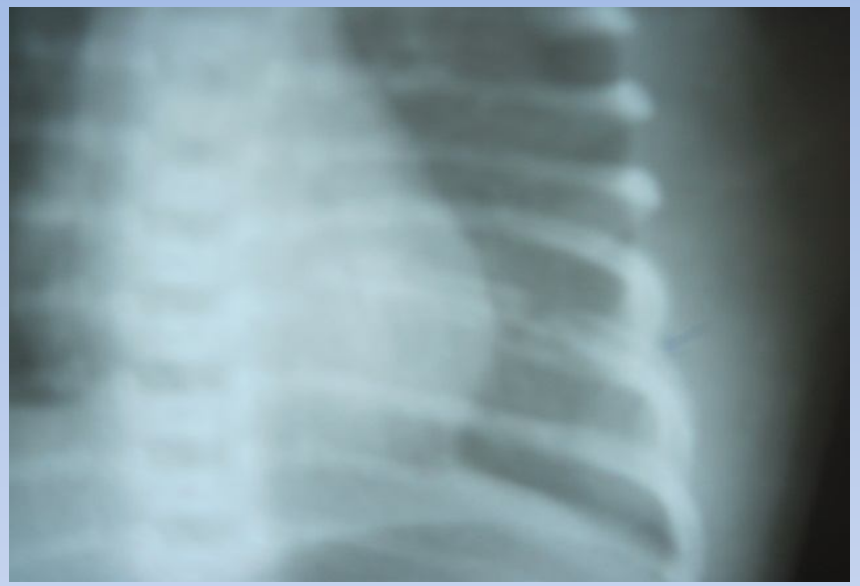
Epiphyseal Bar excision

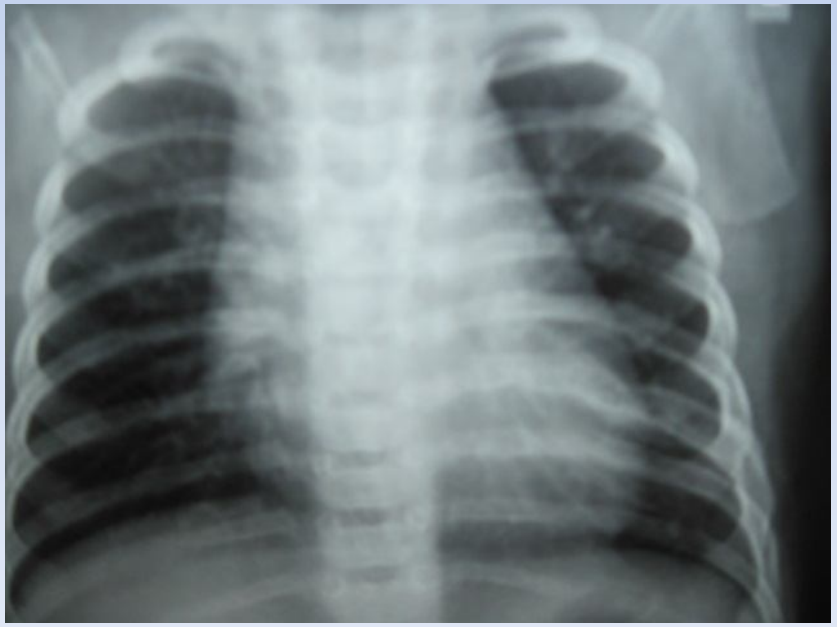
Tibia osteomyelitis

At presentation

Tibia osteomyelitis

1 Year Post surgery





TAKE HOME MESSAGE

- Early diagnosis and aggressive treatment gives best results
- USG is a reliable method for diagnosis
- Empirical antibiotic of choice is vancomycin and amikacin
- Vancomycin and amikacin is drug of choice in negative culture report

TAKE HOME MESSAGE

- All patients with poor results had delayed presentation and pre operative radiographic changes

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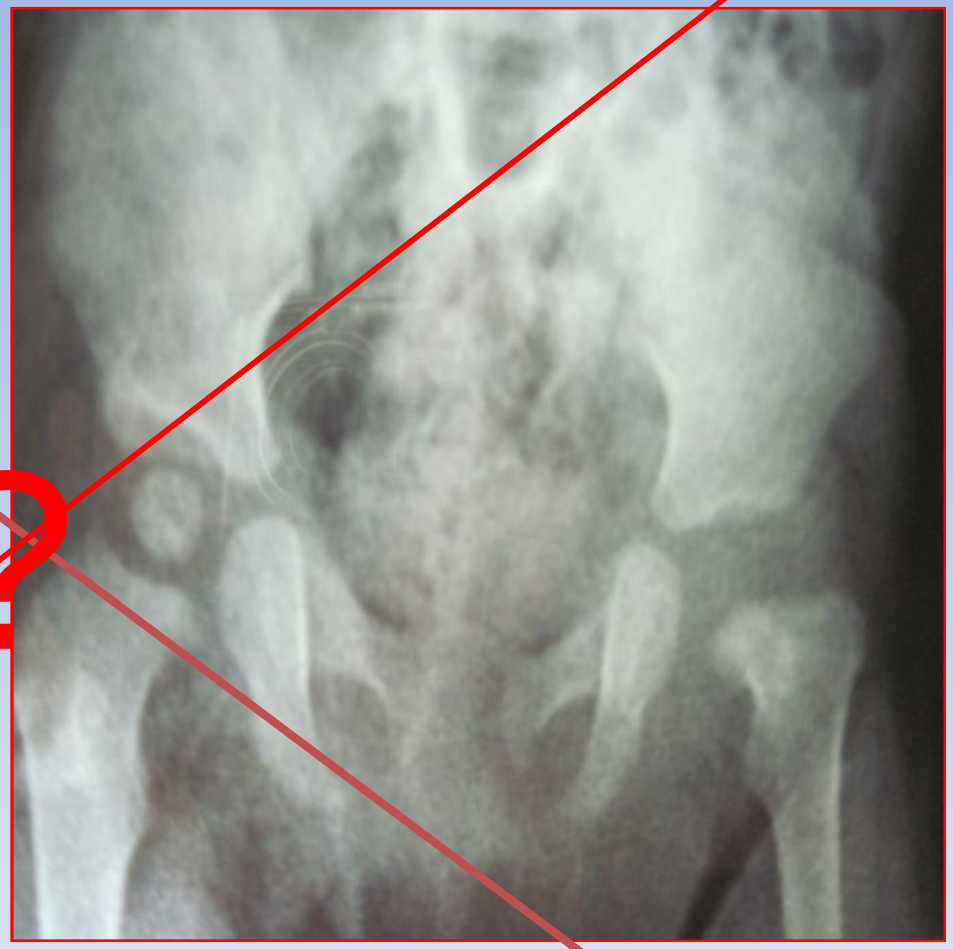

THANK YOU