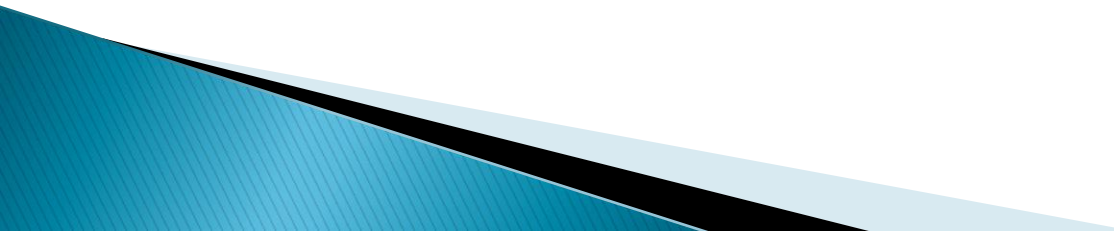


# SEPTIC ARTHRITIS

# BACKGROUND

- ▶ Septic arthritis results from the presence of microbial agents in a joint space: swelling, warmth, or redness, requires emergency medical attention.

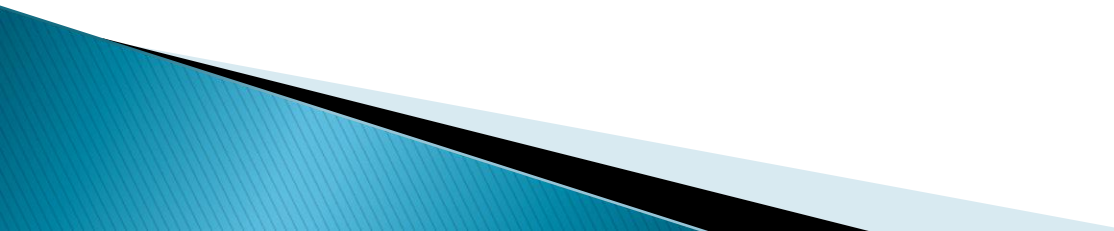
- ▶ Septic arthritis is a challenging clinical problem because
  - ▶ (1) signs and symptoms may be subtle and overlap
  - ▶ (2) screening laboratory studies and synovial fluid cultures are relatively insensitive
  - ▶ (3) Delays in treatment are often associated with long-term sequelae.
- 

# ETIOLOGY

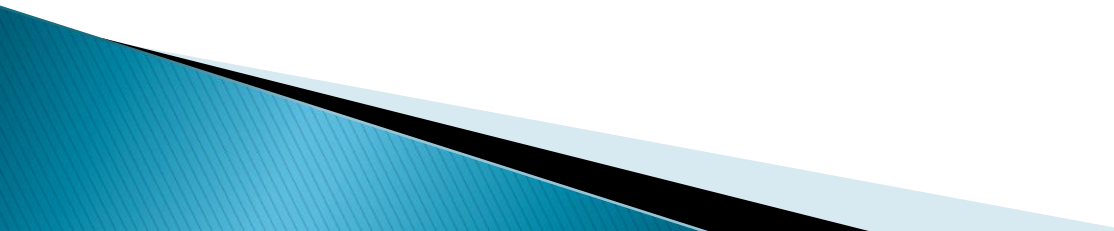
- ▶ In neonates (aged  $< 2$  mo), *Staphylococcus aureus* is the most common cause, *Escherichia coli*, group B streptococci, and other gram-negative bacilli.
- ▶ In children aged 2 months to 5 years, *Haemophilus influenzae* type B was the most common cause of SA prior to the widespread use of vaccines; *S aureus* is now the most common cause

- ▶ In adolescents, *Neisseria gonorrhoeae*
- ▶ *Mycobacterium tuberculosis* is a rare cause of chronic pyogenic arthritis

# DIAGNOSIS

- ▶ Diagnosis of septic arthritis is established by a combination of clinical findings and results of synovial fluid analysis.
  - ▶ synovial fluid
  - ▶ Synovial culture
  - ▶ Blood cultures
  - ▶ WBC count, CRP
  - ▶ Radiography
  - ▶ Ultrasonography
- 

# TREATMENT

- ▶ The goals of treatment include sterilization and decompression of the joint space and removal of inflammatory debris to relieve pain and prevent deformity or functional sequelae .
  - ▶ Children with bacterial arthritis should be managed in conjunction with an orthopedic surgeon who is experienced in treating children
- 

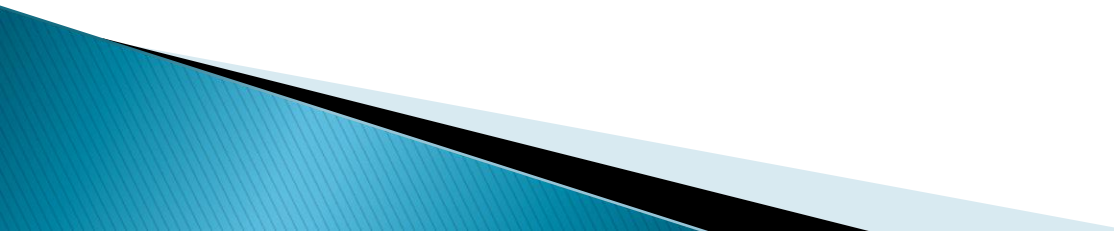
- ▶ Systemic antimicrobial therapy
  - ▶ Adjunctive therapies
  - ▶ Drainage
- 



# ANTIBIOTICS

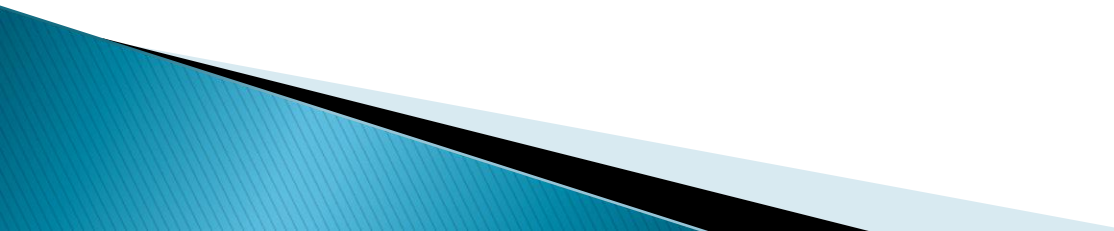
- ▶ We recommend that empiric therapy include coverage for *Staphylococcus aureus* in all infants and children (Grade 1A)
- ▶ The optimal duration of antibiotic therapy is not defined, and recommendations vary from 1–6 weeks. Thus, institutional practices will prevail. In general, 3–4 weeks of antibiotic therapy is used to treat *S aureus*, *H influenzae* type B, or *S pneumoniae* infections, while gonococcal infections are treated for 7–10 days.

# DRAINAGE

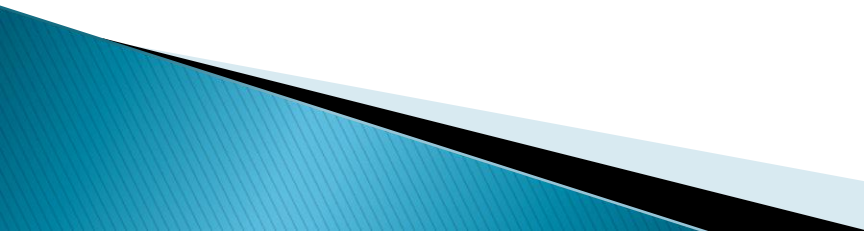
- ▶ We recommend drainage of the joint space in all patients with bacterial arthritis (Grade 1B)
  - ▶ Drainage can be accomplished through open surgery (arthrotomy), arthroscopy, or needle aspiration (single or multiple)
- 

- ▶ We recommend surgical drainage (arthrotomy or arthroscopy) for bacterial arthritis of the hip in infants and children (Grade 1 C). We suggest arthrotomy as the procedure of choice (Grade 2C)
- ▶ Urgent arthrotomy and open drainage is usually performed in septic arthritis of the hip or shoulder, septic arthritis of other joints if no improvement occurs within 3 days of starting antimicrobial therapy, or if a large amount of pus or debris is aspirated during diagnostic arthrocentesis.

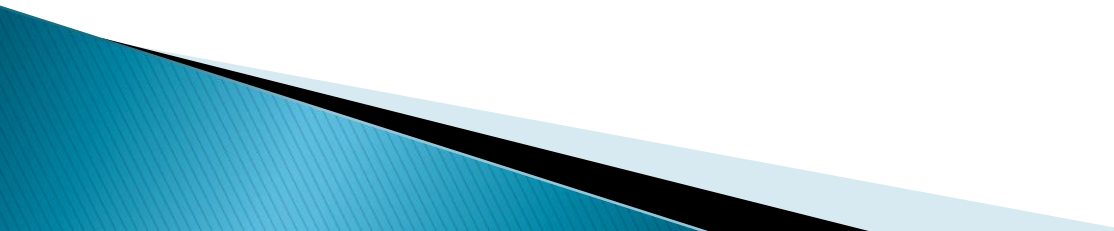
# Orthop Clin North Am. 1975 Oct

- ▶ Early decompression and cleansing of the joint by aspiration or arthrotomy are essential for a good result
  - ▶ Long-term parenteral antibiotic therapy improves the prognosis when osteomyelitis is an associated feature
  - ▶ Arthrotomy with continuous irrigation appears to be more effective in decreasing long-term residual effects than arthrotomy alone
- 

# J Pediatr Orthop. 1986 Sep-Oct

- ▶ Forty-five children
  - ▶ Thirty-four of the 49 joints were successfully managed by aspiration and antibiotics
  - ▶ whereas the remaining joints were successfully managed by surgical drainage following a lack of response to nonoperative treatment
- 

# Arthritis Rheum. 1975

- ▶ Surgery and needle aspiration have been evaluated as initial modes of drainage in 59 patients with acute septic arthritis
  - ▶ 40% treated surgically
  - ▶ 60% of those treated by needle aspiration recovered without sequelae
- 

# Septic arthritis of the shoulder in children in Malawi

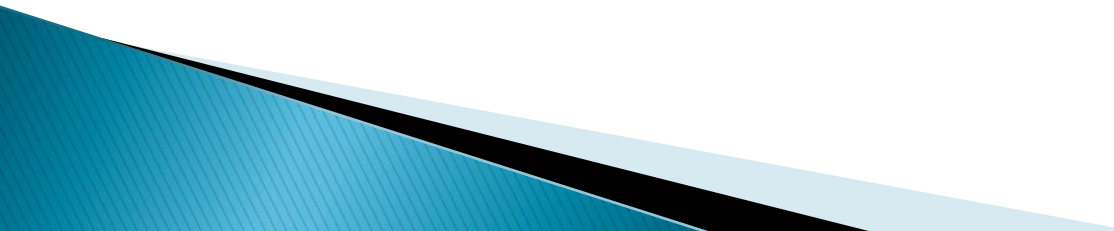
- ▶ 61 children : treated by aspiration (31 patients) or arthrotomy (30 patients).
- ▶ There was no statistical difference in the clinical outcome for the two treatment groups at any stage during the period of follow-up. (J Bone Joint Surg Br. 2002)

# J Trauma. 2011 Feb:

- ▶ Fifty-two patients
- ▶ Percutaneous aspiration irrigation drainage technique
- ▶ good results:with rapid clinical and biological improvement and the absence of long-term sequelae



# RESPONSE TO THERAPY

- ▶ Resolution of fever
  - ▶ Decreased joint pain, swelling, and erythema
  - ▶ Increased joint mobility
  - ▶ Decrease in peripheral WBC count and synovial fluid WBC (if repeated aspirations are performed or a drain is left in place after surgical drainage)
  - ▶ Decrease in ESR and/or CRP
- 

# CONCLUSION

- ▶ empiric therapy include coverage for *Staphylococcus aureus* in all infants and children (Grade 1A)
- ▶ We recommend drainage of the joint space in all patients with bacterial arthritis (Grade 1B)
- ▶ surgical drainage for bacterial arthritis of the hip (Grade 1C), arthrotomy as the procedure of choice (Grade 2C).