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Septic Arthritis –A Case Series.

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ABSTRACT

Septic arthritis is a pyogenic infection of a joint. Blood culture findings are positive in only 50% of patients. Cultures of synovial aspirates are positive in only 30% of cases. Ultrasound examination is the preferred radiologic method of examination. Septic arthritis requires surgical debridement and is managed with appropriate antibiotic therapy. This is a retrospective analysis of neonates with septic arthritis who were admitted to the neonatal intensive care unit of a tertiary care hospital over a period of 3 years. Follow up data was available for all neonates. On follow up at 2 years, four neonates had good outcome with normal gait and no restriction of movements. Three neonates had bad outcome (restriction of movements in two and abnormal gait in one) with associated DDH. One neonate had associated liver abscess and portal vein thrombosis while another case was associated with osteomyelitis.

Keywords: Septic Arthritis, Infection.

INTRODUCTION

Septic arthritis is a pyogenic infection of a joint. The incidence is about 0.12 per 1000 live births and 0.67 per 1000 neonatal intensive care unit (NICU) admissions in western countries.[1] The mortality rate in septic arthritis is about 7.3%. The common joints involved are the hip, knee, and shoulder jounts. Most cases result blood stream infections.[2] The main causative organisms are Staphylococcus aureus and gram-negative organisms. The diagnosis and treatment of septic arthritis in neonates poses significant challenges to clinicians.

Because of the immature immune response, neonates with septic arthritis frequently do not demonstrate fever or leukocytosis. If not detected early and treated adequately, septic arthritis can lead to permanent handicaps.[4] Septic arthritis can lead to permanent joint disabilities and abnormalities in skeletal growth . It can cause decreased range of motion, limb-length discrepancy, and gait abnormalities. The incidence of permanent sequelae varies from 6% to 50%.[5]

CASE REPORT

Blood culture findings are positive in only 50% of patients. Cultures of synovial aspirates are positive in only 30% of cases. Ultrasound examination is the preferred radiologic method of examination. Septic arthritis requires surgical debridement and is managed with appropriate antibiotic therapy.

There are very few studies in India about septic arthritis, especially on factors which predict poor long-term outcomes. Hence, this case series included the clinical and bacteriological profile, risk factors and factors that predict poor outcomes on long-term follow-up in septic arthritis. Poor outcomes were defined as limb length discrepancy of more than 1 cm or restricted joint mobility on clinical examination and/or abnormal gait noted on follow-up

This is a retrospective analysis of neonates with septic arthritis who were admitted to the neonatal intensive care unit of a tertiary care hospital over a period of 3 years.

DISCUSSION

Seven cases of neonatal septic arthritis were diagnosed out of a total of 2598 NICU admissions between August 2015 and August 2018 in the neonatal intensive care unit at Rajagiri hospital, Aluva, Kerala.

Hip joint was involved in six neonates. Shoulder and knee was involved in one case each. Two neonates had multiple joint involvement. The mean age of presentation was 17 days.

Joint swelling (57 %), fever (28 %) and excessive cry (28 %) were the common presenting complaints

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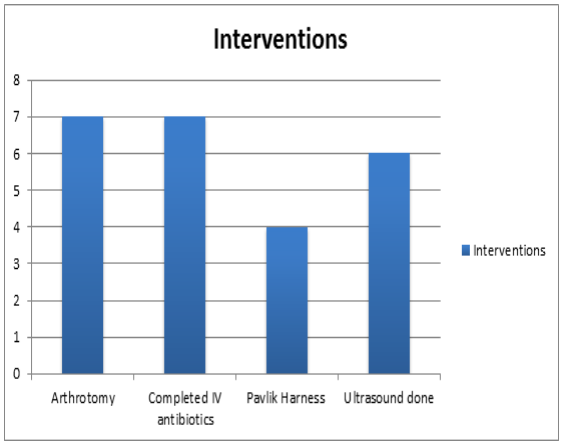
on admission. The CRP titres were very high in all cases with septic arthritis.

Table 1: Case series

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Inborn/Outborn	Outborn	Outborn	Outborn	Outborn	Outborn	Outborn	Outborn
Gestational age in weeks	37	39+6	38	35+6	36+1	38	39+2
Birth weight (grams)	3100	3600	3500	1900	1730	2000	2700
Joints involved	Right hip	Left knee	Right hip	Right hip	Left shoulder Right hip	Both hips	Right hip
Day of presentation	16	13	19	7	42	7	15
Mode of presentation on admission	Excessive cry, Swelling over right hip	Swelling left knee, tenderness	Persistent cry, poor feeding	Fever	Swelling and tenderness of left shoulder	Fever, sepsis	Swelling, tenderness and decreased movements of right hip
Risk factors	Sepsis	-	Severe sepsis	Prematurity, Sepsis	Gluteal abcess following IM injection	Sepsis	Sepsis
Previous hospitalization	No	Yes	Yes	Yes	Yes	Yes	No
CRP on admission	136	78	208	132	95	211	73
Total leukocyte count (cells/mm3)	14.3	15.5	3	7.7	23.2	4.5	16.3
Blood Culture	MSSA	Sterile	MRSA	MRSA	Sterile	Klebsiella	Klebsiella
Antibiotics	Cefazolin, Gentamicin	Cefazolin	Vancomycin, Linezolid	Vancomycin, Linezolid	Vancomycin, Linezolid	Vancomycin, Meropenem	Vancomycin, Meropenem
Ultrasound findings of joint	Fluid collection in synovial joint	Not done	Fluid collection in synovial joint	Fluid collection with dislocation	Fluid collection +DDH+Irregular shape of femur	Fluid collection	Fluid collection
Type of surgical intervention	Arthrotomy and drainage	Arthrotomy and drainage	Arthrotomy and drainage	Arthrotomy and drainage	Arthrotomy and drainage	Arthrotomy and drainage	Arthrotomy and drainage
Need for repeat exploration	No	No	Yes	No	No	Yes	Yes
Joint aspirate culture	MSSA	MSSA	MRSA	MRSA	MRSA	Sterile	Sterile
Associated problems	Sub gluteal abscess	-	Liver abscess, Portal vein thrombosis,DDH	DDH, Acetabular dysplasia	Gluteal abscess, Osteomyelitis, DDH, Subluxation	DDH	-
Followup	Good outcome-normal gait	Good outcome-normal gait	Poor outcome-Mild gait abnormality	Poor outcome-Restriction of movements	Poor outcome-Subluxation, Restriction of movements	Good outcome	Good outcome



Blood culture was positive in 5 (71%) cases and aspirate culture was also positive in 5 (71 %) cases. The most common organism isolated was Staphylococcus aureus. Surgical exploration was done in all cases and they were managed with appropriate antibiotics.

Developmental dysplasia of hip (DDH) was noted in 4 (57 %) neonates.

Follow up data was available for all neonates. On follow up at 2 years, four neonates had good outcome with normal gait and no restriction of movements. Three neonates had bad outcome (restriction of movements in two and abnormal gait in one) with associated DDH.

One neonate had associated liver abscess and portal vein thrombosis while another case was associated with osteomyelitis.

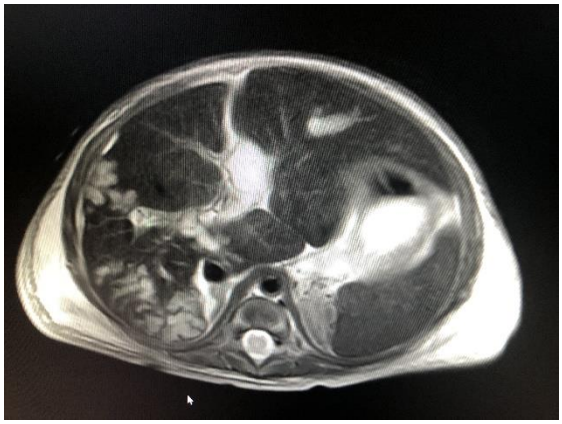


Figure 1: Liver abscess with portal vein thrombosis

CONCLUSION

Septic arthritis is not uncommon in neonates. Contrary to the western literature which quotes a rare incidence, our centre had a very high incidence of septic arthritis (1 in 375 babies). Septic arthritis should be considered in cases where neonatal sepsis is not responding to routine treatment. Highly elevated CRP titres had a high sensitivity for diagnosis of septic arthritis. Most common causative organism was Staphylococcus aureus. Septic arthritis with DDH was associated with worse outcome on follow up.

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