

ORIGINAL ARTICLE

Clinical presentation and treatment of septic arthritis in children ☆,☆☆



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KEYWORDS

Arthritis;
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Abstract

Introduction: The aim of this study is to determine the epidemiological features, clinical presentation, and treatment of children with septic arthritis.

Material and method: A retrospective review was conducted on a total of 141 children with septic arthritis treated in Hospital Universitario La Paz (Madrid) between the years 2000 to 2013. The patient data collected included, the joint affected, the clinical presentation, the laboratory results, the appearance, Gram stain result, and the joint fluid culture, as well as the imaging tests and the treatment.

Results: Most (94%) of the patients were less than 2 years-old. The most common location was the knee (52%), followed by the hip (21%). The septic arthritis was confirmed in 53%. No type of fever was initially observed in 49% of them, and 18% had an ESR (mm/h) or CRP (mg/l) less than 30 in the initial laboratory analysis. The joint fluid was purulent in 45% and turbid in 12%. The Gram stain showed bacteria in 4%. The fluid culture was positive in 17%. *Staphylococcus aureus* was the most common pathogen found, followed by *Streptococcus agalactiae*, *Streptococcus pneumoniae*, and *Kingella kingae*. Antibiotic treatment was intravenous administration for 7 days, followed by 21 days orally. Surgery was performed in 18% of cases.

Conclusions: The diagnosis was only confirmed in 53% of the patients. Some of the confirmed septic arthritis did not present with the classical clinical/analytical signs, demonstrating that the traumatologist or paediatrician requires a high initial level of clinical suspicion of the disease.

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PALABRAS CLAVE

Artritis;
Séptica;
Tratamiento;
Presentación clínica

Presentación clínica y tratamiento de las artritis sépticas en niños**Resumen**

Introducción: El objetivo de este estudio es determinar las características epidemiológicas, la presentación clínica y el tratamiento de los niños con artritis séptica en nuestro medio.

Material y método: Se revisaron retrospectivamente 141 niños con una artritis séptica tratados en el Hospital Universitario La Paz (Madrid) entre los años 2000 y 2013. Se recogieron datos relativos al paciente, la articulación afectada, la presentación clínica, los valores analíticos, el aspecto, la tinción Gram y el cultivo del líquido articular, las pruebas de imagen y el tratamiento.

Resultados: El 94% de los pacientes eran menores de 2 años de edad. La localización más frecuente fue la rodilla (52%), seguida de la cadera (21%). La artritis séptica se confirmó en el 53% de los pacientes. El 49% de ellos no presentaron fiebre ni febrícula inicialmente y el 18% tenían una VSG (mm/h) o PCR (mg/l) menor de 30 en la analítica inicial. El líquido articular fue purulento en el 45% de los casos y turbio en el 12%. La tinción Gram mostró bacterias en el 4%. El cultivo del líquido fue positivo en el 17%. *Staphylococcus aureus* fue el patógeno más frecuente, seguido de *Streptococcus agalactiae*, *Streptococcus pneumoniae* y *Kingella kingae*. La antibioterapia se administró por vía intravenosa 7 días, seguido de vía oral 21 días. Se realizó una cirugía en el 18% de los pacientes.

Conclusiones: La confirmación diagnóstica solo se obtuvo en el 53% de los pacientes. Algunas artritis sépticas confirmadas no presentaron el cuadro clínico/analítico clásico, por lo que es necesario un alto índice de sospecha inicial de la enfermedad por parte del traumatólogo o del pediatra.

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Introduction

Childhood septic arthritis is a disease having disastrous consequences if not treated early.¹⁻³ Clinical suspicion is important in making an early diagnosis that enables early treatment to be undertaken. Nevertheless, there is wide variability in the management of this illness.^{2,4-10} Our institution follows a clinical guideline for the diagnosis and treatment of septic arthritis.¹¹ The aim of this study is to determine the epidemiological characteristics, clinical presentation, aetiology, and treatment performed in children with septic arthritis in our setting, assessing the clinical guideline currently in use at our hospital, the "La Paz" University Hospital (Madrid).

Material and methods

This is a retrospective study that includes 141 patients under 14 years of age with a diagnosis of septic arthritis and who received care at our hospital between 2000 and 2013.

The clinical guideline for the management of septic arthritis in children followed in our hospital¹¹ involves performing a radiograph and ultrasound of the affected joint, as well as blood tests including a full blood count and acute phase reactants (VSG and PCR) in any patient in whom septic arthritis is suspected. Arthrocentesis or arthrotomy (it is not clear who should make the decision as to which one to perform) should be carried out in those cases with a VSG (mm/h) or PCR (mg/l) over 30. In those cases in which purulent synovial fluid is obtained, the patient should be admitted with empirical intravenous antibiotic treatment. On the other

hand, in those cases in which non-purulent synovial fluid is obtained or if it cannot be obtained within the first 48 h of clinical onset, depending on the patients' signs and symptoms, the decision will be made as to whether to admit them with antibiotic treatment or refer them to the Paediatric Rheumatology outpatient clinic. The guideline does not stipulate if Paediatric Traumatology should evaluate the patient at some point, when surgery is called for to clean the joint, which service should be in charge of admitting the patient, or who should do the follow-up of the patient and for how long.

Patients' demographic details are recorded, as well as the joint affected, date of symptomatic onset, data about the clinical debut (possible general involvement, body temperature at the time of admission, the presence of inflammatory signs, ability to bear weight, and limited movement of the affected limb), and the blood test results: white blood-cell count, PCR, and VSG. In those cases in which arthrocentesis was performed, the aspect of the synovial fluid, the result of the biochemistry of the synovial fluid, Gram stain, and microbiological culture are all recorded. Similarly, data regarding treatment collected include the antibiotic administered, mode of administration and treatment duration, as well as whether or not arthrotomy was performed to lavage the joint. All the patients were initially assessed by a paediatrician and admitted to the children's hospital under the responsibility of General Paediatrics, Paediatric Rheumatology, Paediatric Infectious Diseases, or Paediatric Traumatology. A record is made of the department that took charge of the admission.

Retrospectively, a diagnosis of septic arthritis is considered to be confirmed when synovial fluid culture or samples

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