

Reactive Monoarthritis

T.S. Raghu Raman
D.G. Jayaprakash
Rekha Mittal
Daljit Singh
L.N. Raja

The diagnostic approach to a case of septic monoarthritis involves the basic principle of identifying the organism. Simple as this sounds, it is amazing how many cases become 'difficult cases' when no organism can be isolated. Penetrating trauma by a thorn resulting in reactive arthritis can mimic septic arthritis very closely. Highlighting this rare etiology and the approach to a case of monoarthritis is the aim of this report.

Case Report

A male child, aged three years was admitted with fever, and painful swelling of right knee joint. Five days prior to hospitalization, the boy fell down on a heap of fire wood (*Acacia i.e.*, Babul tree) and sustained thorn prick injuries over both legs. One particular thorn had penetrated the right knee joint which was subsequently removed by

From the Department of Pediatrics, Armed Forces Medical College, Pune and Command Hospital, Bangalore.

Reprint requests: Dr. T.S. Raghu Raman, Department of Pediatrics, Armed Forces Medical College, Pune 411 040.

*Received for publication: September 23, 1993;
Accepted: May 12, 1994*

the mother. Within 48 hours he developed fever, pain and swelling of the knee joint and inability to walk. Examination revealed a febrile and toxic looking child. Signs of acute inflammation were noticed over the right knee joint with restricted movements. Systemic examination was non contributory. The investigations were on the lines of septic arthritis. The total leucocyte count was 10,7000/cu mm with 65% polymorphs. Blood culture was sterile. Synovial fluid was turbid in appearance, cytology of 26,000/cu mm with 60% polymorphs, sugar difference of 30 mg/dl, and the culture was sterile. X-ray of knee joint revealed only soft tissue swelling. Management included parenteral antibiotics to cover for both *H. influenzae* and *Staphylococcus aureus*, immobilization of the joint and other conservative measures. As part of surgical management, initially needle aspiration and synovial fluid analysis was done. In view of poor response at the end of one week, open surgical drainage with synovial biopsy was carried out. The histopathology of synovium revealed dense infiltrate of lymphocytes, plasma cells, macrophages and neutrophils, numerous capillary blood vessels along with edematous connective tissue". No granuloma was seen.

Despite four weeks of antibiotic therapy, child continued to be febrile with persistence of signs of inflammation in the joint. Repeated negative reports for bacterial etiology prompted us to discontinue antibiotics. Instead, the child was put on aspirin (100 mg/kg/day). By appropriate investigations like X-ray chest, lymph node biopsy, Mantoux test, bone scan, rheumatoid factor, antinuclear factor, and CT scan of knee joint other etiology for monoarthritis was excluded. Within two weeks the child showed significant isn-

provement. At the end of three weeks the child was afebrile, ambulant, and the right knee joint showed only minimal synovial thickening.

Discussion

Septic arthritis refers to bacterial pathogens, including *Mycobacterium tuberculosis*. Post infectious, reactive, and immune complex arthritis produce synovial inflammation in the absence of viable microorganisms. Septic arthritis is usually mono-articular except in neonates and adolescent. Direct inoculation of pathogens by means of penetrating trauma is a rare cause of septic arthritis associated with *Pseudoallescheria boydii* infection. Clinical picture is that of sterile but chronic pyogenic appearing inflammation that may occur with foreign body (thorn) arthritis(1). The possibility of a non opaque foreign body as a cause for arthritis should always be considered because the perforating wound may heal quickly and leave little or no scar. Prolonged swelling of a joint, with indifferent response to antibiotics, warrants surgical exploration in many cases.

Karsner and Hanafee pointed out the importance of palm tree thorns as the cause of obscure articular effusions in children who live in tropical and subtropical regions(2). Branches of Acacia tree (Babul) with multiple and big sized thorns is extensively used as a source of fire wood in south India.

By itself or as a result of contamination with fungus (particularly *Pseudoallescheria boydii* in wet soil) penetrating knee trauma is a rare cause of reactive, but sterile monarthrititis. To our knowledge, this interesting clinical entity has not been reported earlier, though briefly mentioned non specifically by some authors(1,3).

Experience gained out of managing this case reiterates that in addition to administering antibiotics in a case of septic arthritis, removal of inflammatory material from the joint space by open surgical drainage should always be practiced for reducing joint morbidity. In the absence of arthroscopy, this procedure will also help in removing foreign body. The response to non steroidal anti inflammatory drug (aspirin in this case) further strengthens the possibility of reactive arthritis as a result of thorn foreign body.

REFERENCES

1. Kliegman RM, Behrman RE. Septic arthritis. *In*: Nelson Textbook of Pediatrics. 14th edn. Eds Behrman RE, Nelson WE. Philadelphia, W.B. Saunders Company, 1992, pp 694-698.
2. Karshner RG, Hanafee W. Palm thorns as a cause of joint effusions in children. *Radiology*, 1953, 60: 588-560.
3. Tunnessen WW. Extremities. *In*: Signs and symptoms in Pediatrics. Ed Philadelphia, J.B. Lippincott Company, 1993, pp 466-474.