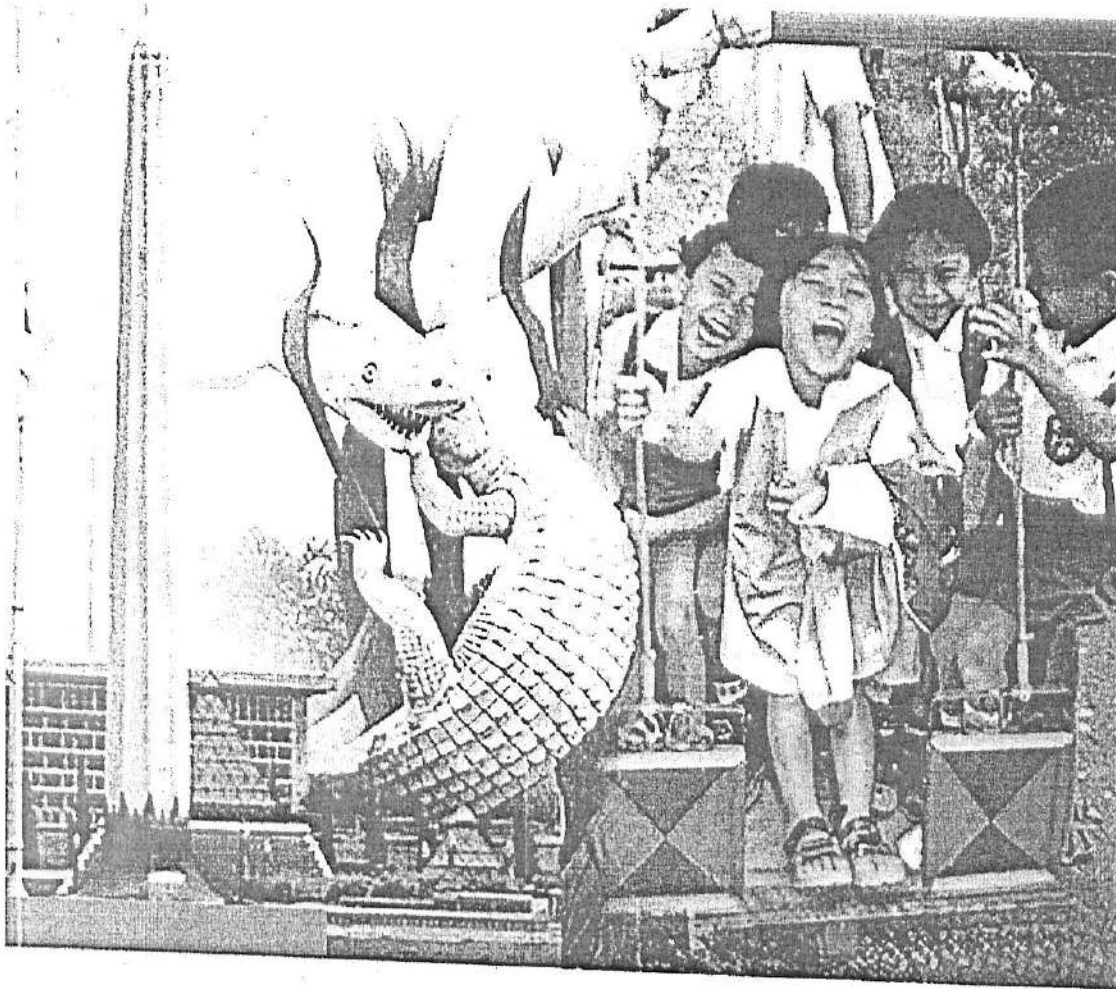




Indonesian Pediatric Society (IPS/IDP)



14th 
Indonesian
Congress
of Pediatrics



14th INDONESIAN CONGRESS OF PEDIATRICS

KONIKA

SURABAYA - INDONESIA, 5 - 9 JULY 2008

Theme: Competence-Based Professionalism In Pediatrics

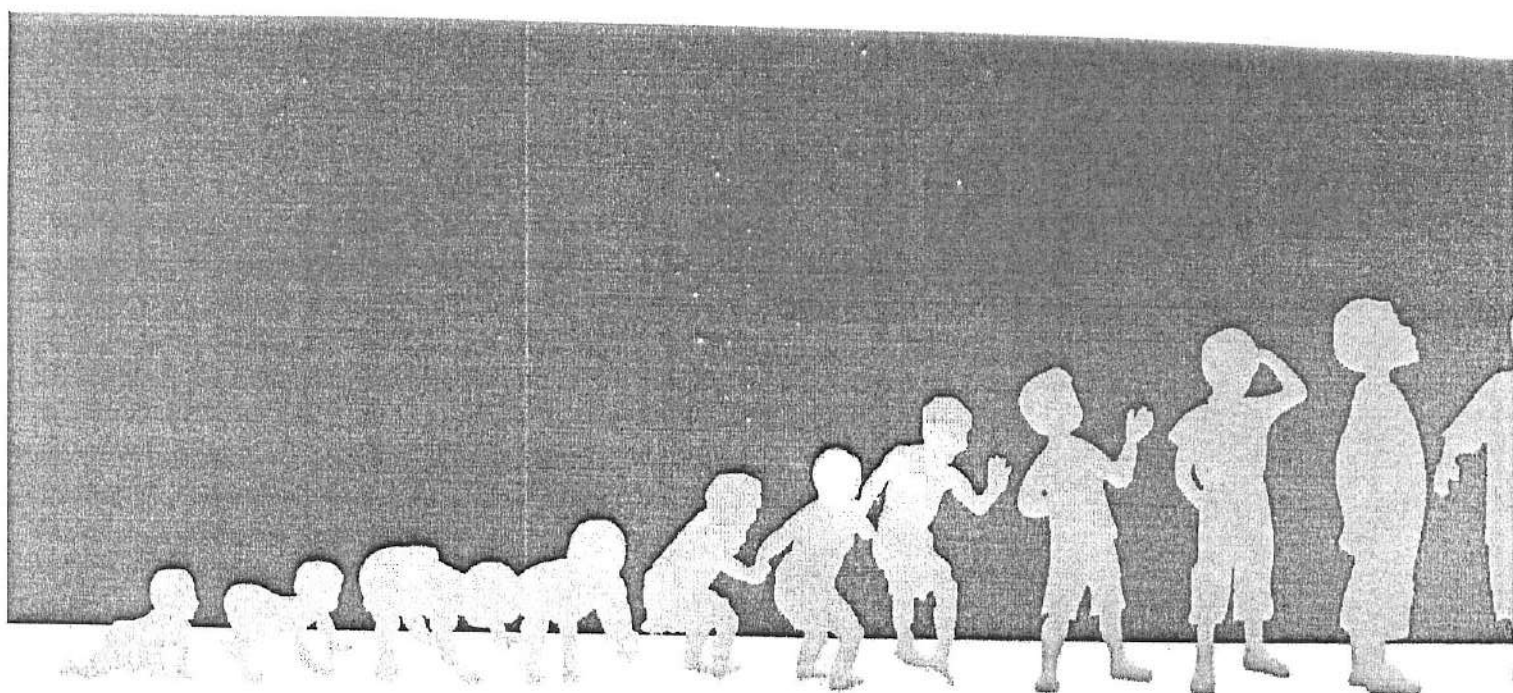
PROCEEDINGS OF 14th KONIKA
YOUNG RESEARCHER AWARD

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The Heroes and "Suro-Baya" Monument
Little m silhouettes reaching my horizon

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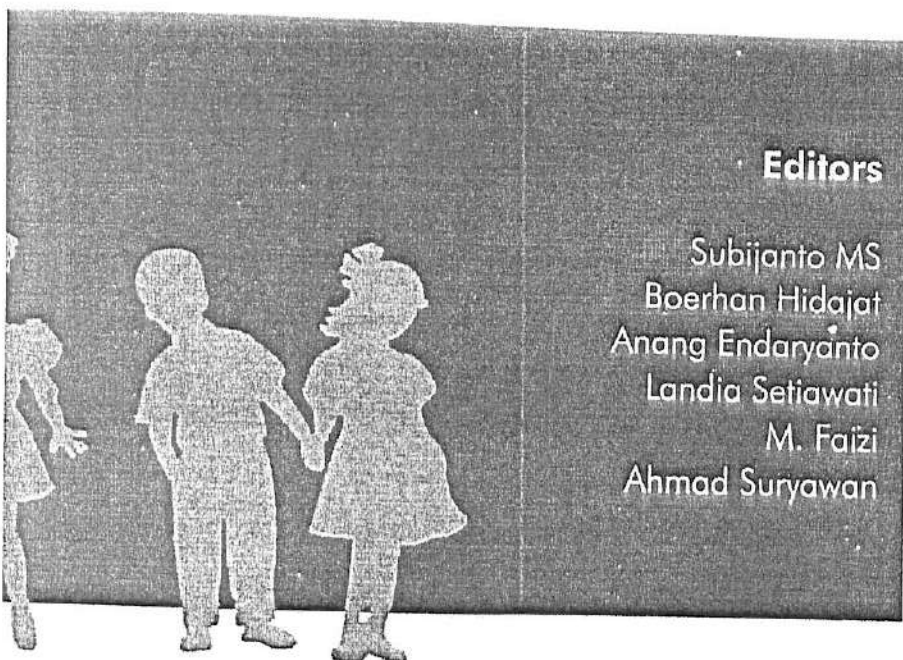


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PROCEEDINGS OF 14th KONIKA
YOUNG RESEARCHER AWARD



THE PROFILE OF BONE AND JOINT TUBERCULOSIS IN SOETOMO HOSPITAL 2003-2007



Endyt Purwandari, Makmuri, Retno Asih, Landia Setiawati

Department of Child Health, Medical School, Airlangga University – Soetomo Hospital
Surabaya - Indonesia

Background

Bone and joint involvement is one of the commonest extra-pulmonary presentation of tuberculosis (TB).

Objective

To describe the profile of bone and joint tuberculosis in children.

Method

Medical record of children with TB of the bone and joint diagnosed during 2003-2007 in Pediatric and Orthopedic Department of Soetomo Hospital Surabaya were studied retrospectively.

Result

Among fifty-one children, TB affected the spine (70.6%), coxae (9.8%), knee (9.8%), calcaneous (3.9%), ankle (2.0%), and osteomyelitis (3.9%). Most patient were diagnosed at age more than five year (52.1%), none were aged less than one year. Frequent symptom complained were localized swelling of the bone (92.2%), fever (82.4%), weight loss (82.4%), and chronic cough (51%). Mean duration of symptom prior to diagnosis was 9.2 months. Tuberculosis contact can be traced in 66.7% of patients. Most patients were moderate malnourished (51%); 25.5% were severely malnourished. BCG scar was observed in 41.2 % of patients. Tuberculin test and fast acid bacilli was positive in 58.8% and 9.8% of patients respectively. Result of twelve among fourteen biopsy specimen suggests TB. Tuberculosis score of at least sic was found in 72.5% of patients. Lung TB accompanied 19.6% of case. Inferior paraparesis occurred in 11.8% of cases. Surgical procedures was done in 64.7% of patients. Twelve children (23,5%) are completing treatment, 25.5% completed treatment, and the rest was lost to follow up.

Table 1. Diagnosis of patients with tuberculosis of the bone and joint

Variables	Number of Patients (n)	Percentage (%)
Localization of tuberculosis of the bone and joint		
Spine	36	70.6
Coxae	5	9.8
Knee	5	9.8
Calcaneous	2	3.9
Ankle	1	2.0
Osteomyelitis	2	3.9
Distribution of tuberculosis of the spine		
Thoracal	15	41.7
Lumbal	6	16.7
Sacral	1	2.8
Thoraco-lumbal	12	33.3
Lumbo-sacral	2	5.6

Conclusion

Tuberculosis of the bone and joint mostly affected the spine. Patients were diagnosed late after initial symptoms. Many patients were lost to follow.

Keyword: tuberculosis, bone, joint, children

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Medical School, Airlangga University - Soetomo Hospital
Surabaya - Indonesia

RESPIROLOGY

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Conclusion: Tuberculosis of the bone and joint mostly affect the spine. Patients were diagnosed late after initial symptoms. Many patients were lost to follow.

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THE PROFILE OF BONE AND JOINT TUBERCULOSIS
IN SOETOMO HOSPITAL 2003-2007

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ABSTRACT

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Keyword: tuberculosis, bone, joint, children

BACKGROUND

Tuberculosis can affect virtually any organ system in the body and can be devastating if left untreated. Extra pulmonary tuberculosis is more common in children than in adults; about one-third of children who have tuberculosis have extra pulmonary manifestations. Bone & Joint involvement is one of the commonest extra-pulmonary presentations of tuberculosis.¹

If the initial lung infection remains untreated, involvement of the bones and joints occurs in 5-10% in children. However pulmonary tuberculosis is evident in only half the patients with skeletal involvement.¹ The spine is the most frequent site of osseous involvement in tuberculosis, with the upper lumbar and lower thoracic spine being involved most frequently.²

The objective of this study is to describe the profile of bone and joint tuberculosis in children.

METHODS

Medical records of children with TB of the bone and joint diagnosed during 2003-2007 in Pediatric and Orthopaedic Department of Soetomo hospital Surabaya were studied retrospectively.

RESULTS

During 5 years of our study period, there were 51 children, aged ranging from 16 months to 17 years, mean age 7 years, diagnosed tuberculosis with bone and joint involvement. In this study, bone and joint involvement of tuberculosis was not found in children under 1 year of age. Twenty six patients were male. Tuberculosis of the spine (spondylitis) was the most common form of bone and joint tuberculosis, found in 36 among 51 children (71%). Other form of bone or joint tuberculosis were: coxitis tuberculosis in 5 children (10%), gonitis tuberculosis in 5 children (10%), calcaneous tuberculosis in 5 children (10%), ankle tuberculosis in 1 patient (2%), and osteomyelitis tuberculosis in 2 patients (4%). The site of tuberculous spondylitis can be seen in table 1. Ten of the children (20%) were accompanied by lungs tuberculosis.

Table 1. Diagnosis of patients with tuberculosis of the bone and joint

Variables	Number of patients (n)	Percentage (%)
Localization of tuberculosis of the bone and joint		
Spine	36	70.6
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Thoraco-lumbal	12	33.3
Lumbo-sacral	2	5.6

Frequent symptoms complained by the patients were localized swelling of the bone (92.2%), fever (82.4%), weight lost (82.4%) and chronic cough (51%). About fourteen patients suffered from motoric abnormality and only 2% suffered from sensoric abnormality. Mean duration of symptoms prior to diagnosis was 9.2 months; there was 1 patient in who diagnoses was established 1 week after symptoms develop, but on the other patient it took 6 year before the diagnosis was established.

Tuberculosis contact can be traced in 66.7% of patients, most of them were family or relatives to the patients. BCG scar was observed in 41.2% of patients. Tuberculin test and acid fast bacilli was positive in 58.8% and 9.8% of patients respectively. The results of twelve among fourteen biopsy specimens were chronic granulomatous inflammation suggesting tuberculosis. Most patients were moderately malnourished (51%); 25.5% were severely malnourished. Tuberculosis score of at least six was found in 72.5% of patients.

Complications of bone and joint tuberculosis such as fracture and inferior paraparesis were found in 23.5% and 11.8% of cases respectively. Surgical procedure was done in 64.7% of patients. Twelve children (23.5%) are completing treatment, 25.5% completed treatment; and the rest was lost to follow up. As many as 53% patients did not regularly visit the out patient clinic of respiratory or orthopedic.

DISCUSSION

Our study revealed 51 children, aged 16 months to 17 years diagnosed with bone and joint tuberculosis. Bone and joint tuberculosis is encountered in any age monoarticular in 90% of cases.²

Tuberculosis of the spine (spondylitis) was the most common, found in 71% of our patients. The most common location of bone and joint tuberculosis in tuberculous spondylitis in our study were as follows: thoraco lumbar 33%, sacral 3% and lumbo sacral 6%. The distributions of thoraco lumbar 33%, sacral 3% and lumbo sacral 6%. The results were similar to Sankaran's study: thoracic 42%, thoraco-lumbar 12%, lumbar 28%, cervical 12%, cervico-dorsal 5% and lumbo-sacral 3%.² Spondylitis almost always begins in the vertebral body, usually the anterior one third. The disc is involved when 2 adjacent vertebral bodies are affected. Paravertebral abscess formation is characteristic and (Pott's) paraplegia are all late sequelae.²

Other forms of bone or joint tuberculosis in our study were: coxitis tuberculosis 10%, gonitis 10%, calcaneus 4%, ankle 2%, and osteomyelitis 4%. The most frequently involved joints are the weight-bearing, large joints such as hip, knee, shoulders, or elbow. Tuberculosis of the small joints is rare.^{3,4}

Frequent symptoms complained by our patients were localized swelling of the bone (92.2%), fever (82.4%), weight lost (82.4%) and chronic cough (51%). Common symptoms of skeletal tuberculosis are pain, tenderness and limitation of motion. If the spine is involved, truncal rigidity, muscle spasm and neurological signs may be present. Neurologic deficit is uncommon in children. The accompanying systemic symptoms may include fever, weight loss and malaise.^{3,4}

Onset of symptoms is usually one year. However, in the present study, this period varied from 1 week to 6 years, average 9.2 months, which was mainly due to the patient's delay. When diagnosis is late, joint contractures and limited functional improvement after treatment are more likely to occur, especially if bone and articular cartilage are destroyed.⁵

The diagnosis depends on biopsy for culture and pathologic examination of the affected tissues, because radiographs are not diagnostic. The tissue surrounding the bony lesion shows granulomatous change, but the bacterial population is usually small, and culture results may be negative.² The results of twelve among fourteen biopsy specimens were chronic granulomatous inflammation suggesting tuberculosis. In regions of the world where tuberculosis is common, it has been recommended in cases of suspected bone tuberculosis that treatment proceed without culture diagnosis because of the lack of appropriate facilities.²

If detected early (before collapse of more than 1-2 vertebral body) treatment consists of antibiotics and immobilization. With adequate medical treatment, there may be significant resolution of neurologic symptoms, and there will be a halt in the progression of kyphosis. In young children, there will often be some resolution in the kyphosis, especially if only one or two vertebrae are involved.^{2,5}

Surgical procedure was done in 64.7% of patients. Surgery is recommended only for diagnostic biopsy, for patients with unstable or deformed spines, for those whose condition does not improve after 3 to 4 weeks of antibiotic therapy and for those in whom progressive neurologic symptoms develop while they are receiving adequate treatment.^{5,6}

Complications of bone and joint tuberculosis such as fracture and inferior paraparesis were found in 23.5% and 11.8% of our cases respectively. The most important complication is paraplegia or quadriplegia, which occurs in 10-30% of patients, as a result of cord compression due to abscess, granulation tissue, sequestra formation in vertebral body.² As many as 53% patients did not regularly visit the out patient clinic of respiratory or orthopedic, and were lost to follow up.

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