LIMB PAINS IN CHILDREN

Essay

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By

Fayez Fouad Makary

M.B., B.Ch.

SUPERVISED BY

Prof. Dr. KOTB AHMED TOLBA

Prof. of Pediatrics

Faculty of Medicine

Ain Shams University

FACULTY OF MEDICINE

AIN SHAMS UNIVERISTY

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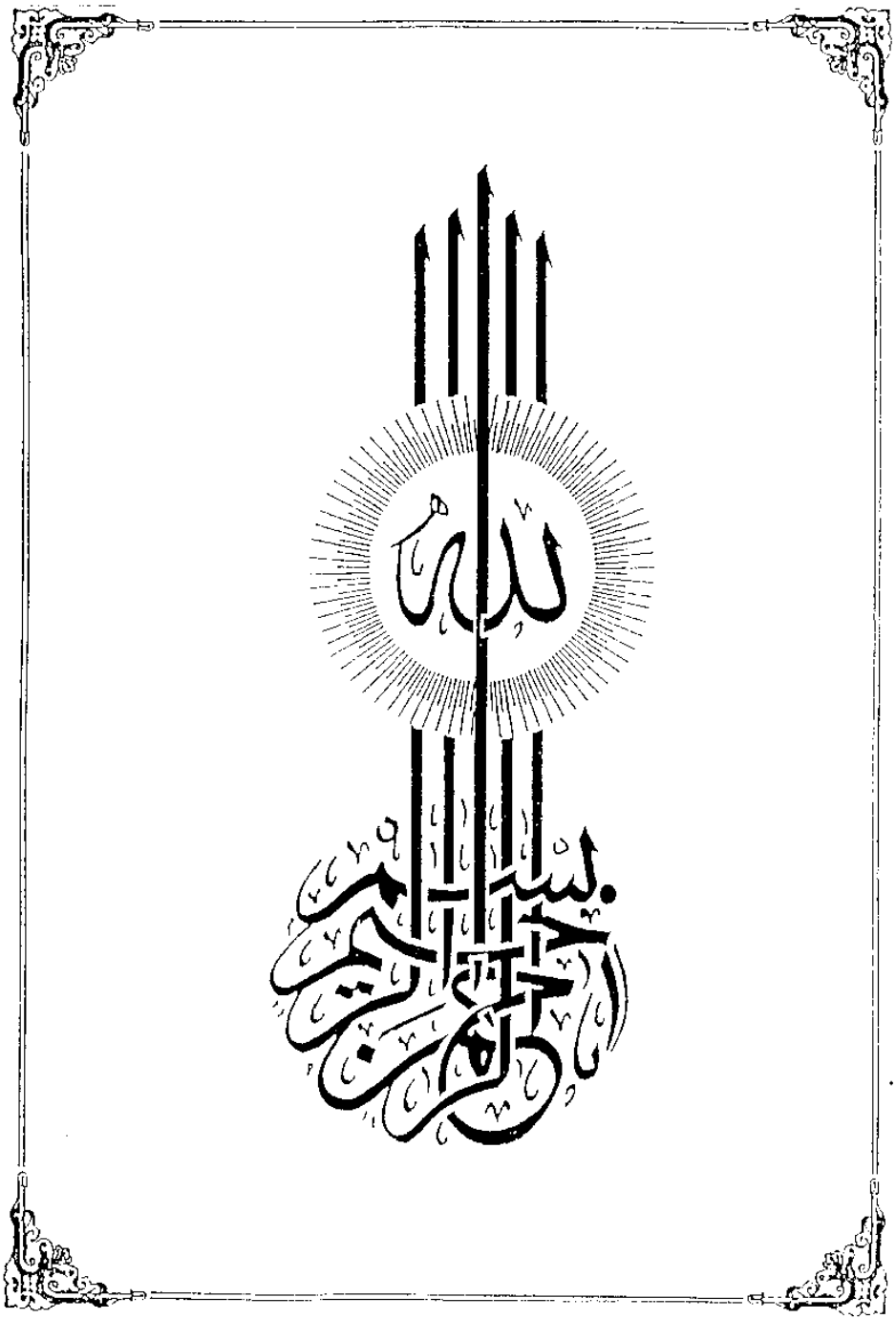

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INTRODUCTION

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The presenting complaint in 7% of pediatrician visits is pain in the limbs which is a common problem in childhood. At times, the search for the cause of pain can be frustrating, especially when one is confronted by a healthy - appearing child who complains of pain but has no positive findings on physical or laboratory examination. (Hyattsville, 1981).

Although the differential diagnosis of limb pain in childhood is long and includes a diverse collection of illnesses, if the problem is systematically approached, a cause for the pain, physical or psychological, can usually be elucidated. (Bowyer and Hollister, 1984).

When a child presents with limb pain, it is advantageous that a diagnosis be made quickly. If the cause is organic, treatment can begin immediately. If a conversion reaction is responsible, attention can be removed from the somatic complaint and refocused on the psychological process responsible for the child's distress. If the child exhibits the classic symptoms of growing pains, the family can be reassured by an explanation of the benign nature and favorable prognosis of this condition. (Passo, 1982).

There are clues in the history and initial observation of the child that suggest to the physician the category of illness into which the patient best fits.

Children with organic pathology should be able to localize their pain to a joint or to a well-defined area between two joints. Although discomfort may not be extreme, it will usually be severe enough to interfere with play and other normal activities. It will occur day and night as well as on weekends. Pain caused by trauma or tumors is frequently unilateral. Collagen vascular diseass commonly present with symmetric findings. Constitutional signs and symptoms may be evident in the history or physical examination. The child may limp or refuse to walk. (Bowyer and Hollister, 1984).

When the pain is nonorganic (functional), the patients's description of the pain may not fit any logical anatomic or physiologic process. The history may be related in either an inappropriately dramatic or overly indifferent manner. The pain will frequently occur on school days or during unpleasant situations. Week-ends are often pain-free, and there is very little interruption of activities the child considers pleasant. No suggestion of constitutional signs or symptoms should be evident, and the physical examination will either be normal or abnormal in a fashion inconsistent with organic dysfunction. Children with this type of picture frequently have a history of minor emotional difficulties, and it is common to find that the patient and/or family has been under an increaed amount of stress prior to the onset of symptoms. (Maloney, 1980).

Therefore, the aim of this essay is to elucidate the various causes of limb pain in children, the etiology, the clinical picture, the methods of diagnosis and the treatment will be discussed.

CLASSIFICATION OF DIFFERENT CAUSES OF LIMB PAIN IN CHILDHOOD

(I) **Trama:**

1. Fracture.
2. Stress fracture.
3. Myositis ossificans.
4. Traumatic subluxation and dislocation.
5. Joint strain, sprain, internal derangement.
6. Soft tissue contusion and hemorrhage.
7. Traumatic periostitis.
7. Traumatic synovitis or hemarthrosis.
9. Battered child.
10. Pathologic fracture.

(II) **Orthopedic Conditions:**

1. Chondromalacia patellae.
2. Osteochondrosis.
3. Osteochondritis dissecans.
4. Slipped capital femoral epiphysis.
5. Hypermobility syndromes.
6. Limb deformities such as flat foot, ankle valgus, genu valgum.

(III) **Collagen Diseaes:**

1. Acute juvenile rheumatism.

2. Juvenile rheumatoid arthritis (JRA).
3. Systemic lupus erythematosus (SLE).
4. Juvenile dermatomyositis.
5. Progressive systemic sclerosis or scleroderma.
6. Mixed connective tissue disease.
7. Anaphylactoid purpura (Schönlein-Henoch vasculitis).
8. Familial mediterranean fever.
9. Palindromic rheumatism.
10. Inflammatory bowel disease.
    (Crohn's disease and ulcerative colitis).

(IV) **Infectious Diseases:**

1. Septic arthritis.
2. osteomyelitis.
3. Soft tissue abscess.
4. Cellulitis and ascending lymphadenitis.
5. Diskitis.
6. Toxic synovitis.
7. Infectious myositis.
8. Viral related arthritis.
9. Rubella and after rubella vaccine.

(V) **Neoplastic Diseases:**

1. Benign bone tumors.
2. Malignant bone tumors.

3. Metastatic bone lesions.
4. Arthritis as a manifestation of systemic malignancy in children (leukemia).
5. Soft tissue tumors.

(VI) Hematological Conditions:

1. Sickle cell intravascular stasis and thrombosis.
2. Hemophilic arthropathy.

(VII) Endocrine Abnormalities:

1. Hypercortisolism.
2. Hyperparathyroidism.
3. Hypothyroidism.
4. Idiopathic juvenile osteoporosis.

(VIII) Nutritional Abnormalities:

1. Hypervitaminosis A.
2. Vitamin C Deficiency (Scurvy).
3. Hypercholesterolemia (familial type II hyperlipoproteinemia).

(IX) Storage Diseases:

1. Glycogenosis type V (McArdle's disease).
2. Mucopolysaccharidosis I (Hurber syndrome).

(X) **Syndromes of Unknown Origin:**

1. Fibromyalgia.
2. Growing pains.

(XI) **Psychosomatic Illness:**

1. Conversion reactions.
2. Reflex neurovascular dystrophy.
3. School phobia.

I- TRAUMA

1- Stress fracture.

2- Myohematoma.

3- Myositis ossificans.

TRAUMA

A physician's diagnostic instinct is to relate limb pain to trauma. While single episodes of major trauma can produce fractures and sprains, the more subtle causes of limb pain are due to subacute trauma or over-use syndromes in the immature skeleton. (Singer and Towbin, 1979).

Stress Fracture:

A stress fracture can results from every day wear and tear on growing bones. Cortical bone under unusual stress responds by seeking a structurally stronger form. Osteoclastic activity dissolves some bone, which is replaced with concentric lamellae. At the point where the bone substance has been weakened temporarily by osteoclasts (a process which may take several weeks) the bone may fracture under stress. (Devas, 1963).

Stress fractures are typically noted after a few weeks of vigorous physical activity which has followed a prolonged rest (for example, during the first weeks of spring training after a winter layoff). These are most commonly seen in tibia, distal fibula and metatarsals (Singer and Towbin, 1979).

The child may complain of aching for weeks before the actual fracture occurs. Bone scan will identify the site of the fracture well

before it is visible on X-ray, but serial X-ray examination will also make the diagnosis over time. (Conway, 1977).

Treatment is to refrain from such vigorous activity. Crutches may be needed. (Devas, 1963).