

Diagnosis of Growing Pain in Bangladeshi Pediatric Population

Saha SK¹, Modak Aditi², Chowdhury K³, Uddin MS⁴, Ghosh D⁵, Al-Mamun MA⁶

Abstract

Background: Unexplained limb pain is a major diagnostic challenge. Parents become very much worried as their physician are not sure regarding accurate diagnosis of unexplained limb pain. Majority of the limb pain are due to Growing pain which can be diagnosed by using Standard Criteria. **Objectives:** The purpose of the present study was to see the clinical aspects of growing pain and to determine the causes of unexplained limb pain. **Methodology:** This study prospectively examined the presence of growing pain in a self reported population of children with limb pain of unexplained etiology attending National Center for Control of Rheumatic Fever and Heart Disease over the period of 6 months. **Results:** Total 57 children of 3-12 yrs of age were enrolled in this study and out of them 43(75.4%) were diagnosed as Growing Pain. Mean age of growing pain was 7.77(2.66). 19 children (44.2%) were male and 24 (55.8%) were female. Most frequent site of pain was calf (65.1%) and 95% cases pain occur at night. Growing Pain usually occur at slow growing period (86%) than rapid growing period (14%). **Conclusion:** Majority of unexplained limb pain are growing pain which is benign. [J Shaheed Suhrawardy Med Coll, 2013;5(1):46-48]

Keywords: Unexplained limb pain, growing pain, pediatric population

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Introduction

Extremity pain is a common presenting complaint of visits to pediatricians¹⁻³. Unexplained limb pain is a major diagnostic challenge. Parents become very much worried as their physician are not sure regarding accurate diagnosis of unexplained limb pain. Majority of the limb pain are due to Growing pain which can be diagnosed by using Standard Criteria⁷. The most common cause of childhood musculoskeletal pain is termed "growing pains" (GP) that exemplifies a type of non-inflammatory syndrome. These pains are much more common than all other inflammatory rheumatic diseases. The prevalence of GP ranges from 3-37% of children. Oster found that as many as 15% of school-age children have occasional limb pain⁶, and recently Evans and Scutter in a very large community study in Australia reported a prevalence of 37% in children aged 4-6 years⁷. First mentioned in 1823, the pathophysiological mechanisms surrounding its aetiology are still unknown¹⁴. GP mainly

affects children between the ages of 3-12 years. GP has typical clinical characteristics; it is usually non-articular, in 2/3 of children is located in the shins, calves, thighs or popliteal fossa and is almost always bilateral. The pain usually appears late in the day or is nocturnal, often awaking the child. The duration ranges from minutes to hours. The intensity can be mild or very severe. By morning the child is almost always pain free. There are no objective signs of inflammation on physical examination and laboratory investigations also normal. GP is episodic, with pain-free intervals from days to months. In severe cases the pain can occur daily. Child will have pain on days of increased activity or when the child is more moody. GP is not associated with serious organic disease, and usually resolves by late childhood. However, frequent episodes may have a major impact on the child and his family's daily routine, including absences from school and work, day time fatigue, reduced physical activity, and frequent or chronic use of pain relief medications¹⁵.

1. Dr. Santosh Kumar Saha, Junior Consultant, Department of Pediatrics, National Center for Control of Rheumatic Fever & Heart Disease, Dhaka
2. Dr. Aditi Modak, Consultant Radiologist, Green Life Hospital Ltd., Dhaka.
3. Dr. Kamrunnihar Chowdhury, Assistant Professor, Department of Epidemiology, National Center for Control of Rheumatic Fever & Heart Disease, Dhaka
4. Dr Md Saleh Uddin, Assistant Professor, Department of Cardiology, National Center for Control of Rheumatic Fever & Heart Disease, Dhaka
5. Dr. Dilip Kumar Ghosh, Assistant Professor, Department of Gastroenterology, Shaheed Suhrawardy Medical College, Dhaka
6. Dr. Mohammad Abdullah Al-Mamun, Assistant Professor, Department of Surgery, Shaheed Suhrawardy Medical College, Dhaka.

Correspondence

Dr. Santosh Kumar Saha, Junior Consultant, Department of Pediatrics, National Center for Control of Rheumatic Fever & Heart Disease, Dhaka, Bangladesh; Cell No.: +8801711890275; E-mail: santu2002@gmail.com

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Methodology

This cross sectional study was conducted in National Center of Control of Rheumatic Fever & Heart Disease, Dhaka from March 2011 to August 2011 for duration of six month. During study period all the 3-12 years old children of unexplained limb pain cases without fever and joint swelling attending National Center for Control of Rheumatic Fever & Heart Disease who were willing to enroll in the study were the sample. Total 57 children of both sexes were collected. A checklist was used for interviewing the parents, children & recording physical examination, anthropometric measurement and laboratory findings.

Criteria for the diagnosis of growing pains: Growing Pain was diagnosed by using Peterson & Evans criteria^{7,10}. There are some essential Criteria for Growing Pains which are pain in both legs, pain began between the ages of 3-12 years, pain typically occurred at the end of the day or during the night and there was no significant limitation of activity and no limping. There are some excluding factors like a pattern of pain severity not consistent with growing pains, any indication of a definite orthopaedic disorder and any abnormalities on specific testing (e.g. X-rays, bone scans, blood tests). Additional Descriptive Features of Growing Pains are pain persisted at least three months, there were periods of days, weeks or months without leg pains, pain was not a problem in the morning and there was no associated lack of well-being.

Diagnosis of other diseases was done by history, physical examination and relevant investigations. After collection, data were checked for completeness and consistencies. Statistical Package for Social Science (SPSS) for windows version 16 was Used. Descriptive statistical tests, Chi-square were used. Significance was accepted where the p value<0.05.

Results

Out of 57 patients of unexplained limb pain, 43 were diagnosed as Growing Pain (GP), 6 were transient synovitis of hip, 2 were fibromyalgia, 4 were flat foot, legg calve perthes disease and Osgood schlatter disease each was single case.

Table 1: Diagnosis of Unexplained Limb Pain

Types of Pain	Frequency	Percent
Growing pain	43	75.4
Transient synovitis of hip	6	10.5
Fibromyalgia	2	3.5
Flat foot	4	7.0
Legg calve perthes disease	1	1.8
Osgood schlatter disease	1	1.8
Total	57	100.0

Mean age of all unexplained limb pain patients was 7.77 yrs and mean weight and height were 21.93 and 117.81 respectively. Out of 57 cases of unexplained limb pain, 52.6 percent are female and rest of are male.

Table 2: Demographics of the population with or without GP

Characteristics	With GP N (%)	Without GP N (%)
Total patients	43(75.4)	14(24.6)
Male	19(44.2)	8(57.1)
Female	24(55.8)	6(42.9)
Mean age(Yrs)	7.4	8.93
Mean weight(Kg)	21.02	24.71
Mean height(Cm)	116.47	121.93

Total Growing Pain patients were 43 and out of them 24 were female and rest of are male. The mean age, weight and height of the Growing Pain patients were 7.4 yrs, 21.02 kg and 116.47 cm respectively. Patients without Growing Pain are 14 in number, 8 are male and rest of are female. Mean age, weight and height are 8.93yrs, 24.71kg and 121.9.

Table 3: Location of pain

Site of Pain	Responses	
	N	Percent
Hip	2	2.7
Thigh	5	6.7
Popliteal	12	16.0
Shin	16	21.3
Calf	28	37.3
Foot	2	2.7
Joints	10	13.3
Total	75	100.0

In Growing Pain 95.3 percent cases pain occur at night and 44.2 percent cases at evening. 65 percent of Growing Pain patients are experience pain in calf, 37 percent in shin and 28 percent in popliteal region. 37(82.2%) cases of Growing Pain and 8(17.8%) cases of non growing pain occur at slow growing period and only 6(50%) cases of Growing Pain and 6(50%) cases of non growing pain occur at rapid growing period. So GP is more common in slow growing period than the non GP and it is statistically significant (p=0.02). In this study it can be said that GP is misnomer as it has no relation with rapid growth.

Table 4: Timing of Pain

Pain occur	Responses	
	N	Percent
Evening	19	31.7
Night	41	68.3
Total	60	100.0

Discussion

The prevalence of GP is quite variable in different reports. Using Peterson's and Evans criteria of intermittent pain located in the lower limbs, normal physical examination, absence of laboratory abnormalities, and no limitation of activity, after the exclusion of other diseases, It was verified that two thirds of the Bangladeshi children in the sample were shown to have GP when evaluated prospectively while one third presented other causes¹⁶. Similar results are found in Brazilian Children¹⁴. Since its first description in 1823, and later, in Bennie's work in 1984, when the term "Growing Pains" was coined, the pathogenesis of GP has remained unclear¹⁷. It may be due to low pain threshold, decrease bone strength, blood perfusion changes, anatomical/mechanical factors, unhappy family environment, familial predisposition and growth¹⁵. While many of these theories such as growth, fatigue and anatomical/mechanical factors have not been supported or have been refuted, the lower pain threshold in children with GP along with the familial nature of disorder suggest that GP might be classified as a functional pain syndrome¹⁸. This report also suggests that GP is not related with growth. The mean age of GP in our study is 7.40 yrs which is the slow growing period of the children, So GP is the misnomer as it is not occur in rapid growing period. this study supports that GP is female preponderance like other reports but why, the answer is remain unclear.

Table 5: Relation of Growing pain with Growing Period of Children

Pain Count	Age Group		Total
	Slow growing period	Rapid growing period	
Growing pain Count	37(82.2%)	6(50.0%)	43(75.4%)
Non growing pain Count	8(17.8%)	6(50%)	14(24.6%)
Total Count	45(100%)	12(100%)	57(100.0%)

*P value .02

Conclusion

GP is very common and easy to diagnose by Peterson & Evans criteria. Majority of unexplained limb pain are Growing Pain which is benign.

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