

Growing Pains in Children

1.0 Contact Hour

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Growing Pains in Children

By Joe Knight, PA-C

Objectives:

1. Define “growing pains” and state their most common location.
2. State the symptoms that may raise a clinician’s suspicion of a systemic cause of limb or joint pain.
3. Describe when symptoms of benign nocturnal limb pain are most acute.
4. Describe the racial differences in the occurrence of benign nocturnal limb pain.
5. List the basic laboratory and imaging studies that should be included in the evaluation of the child with nocturnal limb pain.

Introduction

“My legs really hurt!” How many times has a parent or teacher heard this complaint from one of his or her charges? We all had family members or friends who have had pain in their legs from arthritis, strained ligaments or for other reasons. However, when should a parent or teacher be concerned when a child has leg pains?

Musculoskeletal pain during childhood is common; in population surveys, 16 percent of school-aged children reported limb pain.¹ Musculoskeletal pain can be difficult for children to explain and may cause the child and his or her parents unwarranted concern. Growing pains are usually felt in both legs and consist of on-and-off pain, with possibly days-to-weeks of no pain. The pain can be severe and may even awaken the child from sleep. The child typically describes the pain

as localized in the lower leg (usually the calf), front of the thighs or behind the knees (pain from fatigue may resemble growing pains, but fatigue pain usually disappears after rest). The pain can be felt in any limb, but are usually most pronounced in the knees and legs. The pain usually occurs in the late afternoon or evening, and becomes worse at night, especially just before a child falls asleep. Growing pains usually occur in very active children, with boys and girls equally affected. Children run, jump, hop and climb all day long. Then, usually at nighttime, while in bed and things are nice and quiet, they begin to notice the aches and pains in their limbs. And that pain can be significant.

Nonrheumatic causes of musculoskeletal pain are much more common than rheumatic causes. The list of the many possible causes of musculoskeletal pain in children is beyond the scope of this manuscript but should be considered when screening for underlying disease in children with joint complaints. Musculoskeletal disorders have multiple etiologies,² and the history and physical examination greatly aid in narrowing the differential diagnosis. For example, mechanical joint pain is more likely to be acute, to involve joint tenderness, and to be worse at night. It is important that health care providers determine whether a systemic disease may be causing the pain. Changes in activity, constitutional symptoms such as fevers and fatigue, or abnormal examination findings without obvious etiology should raise suspicion for rheumatic disease.³

So what causes growing pains? Benign nocturnal limb pains of childhood affect approximately 35% of children four to six years of age, although they may occur up to age 19.⁴ The exact pathophysiology of the pain is unknown: it may not be associated with the pubertal growth spurt

but theoretically may be associated with growth in general.⁵ The pain typically occurs in the evening or at night, may awaken the child from sleep, and disappears by morning. Benign nocturnal limb pains are not associated with a limp. The classic clinical presentation in the absence of other inflammatory or chronic signs and symptoms should reinforce the benign nature of this entity.³ During a growth spurt, the pains tend to come more often and may be more severe because bone growth and muscle growth may be temporarily out of synch because bones and muscle grow at different rates. The two growth spurts usually begin between the ages of 3-to-5 and 8-to-12, and it is usually within these two age groups that growing pains are most common; teenagers rarely get growing pains. It is interesting to note that growing pains occur less frequently in those children that are less active. There are also racial differences. On the average, African-American and Latino children get growing pains about six months to a year before Caucasian children. Why this difference occurs is unknown.

Evaluation of leg pain

Rapid onset of pain suggests trauma, sepsis, hemarthrosis, or malignancy, while the onset of pain over several days suggests infectious or reactive arthritis.³ During the physical examination, no redness or swelling will be present if the problem is growing pains. Childhood arthritis, joint injuries and other significant medical problems will usually have some kind of visible clue present. The limb or joint of a child with growing pains will look and feel perfectly normal, and the child will be able to move it normally. There is rarely any limp involved. In addition, children with serious bone, joint or muscle problems usually don't like to have the painful area touched; however, children with growing pains like to have the area massaged to help relieve the pain. Pain localized to areas other than the joint may be related to connective tissue or muscle

involvement.⁶ The possibility of referred pain, such as hip disease with associated groin or knee pain, should be considered. The joint distribution and the number of joints involved will also help organize the evaluation.⁸ For example, arthritis in only one joint may be caused by pauciarticular (involving few joints) juvenile arthritis or septic arthritis, while inflammatory diseases such as polyarticular juvenile rheumatoid arthritis, mixed connective tissue disease, and systemic lupus erythematosus usually cause symmetric arthritis affecting multiple joints.^{9,10}

Change in activity, constitutional symptoms such as fevers and fatigue, or abnormal examination findings without obvious etiology should raise suspicion for rheumatic disease. A complete physical examination should be performed to look for extra-articular signs of rheumatic disease, focusing on but not limited to the affected areas. Characteristic rashes accompany several rheumatic causes of musculoskeletal pain; parents may notice the malar rash of systemic lupus erythematosus or the heliotrope rash of juvenile dermatomyositis.¹¹ Lymphadenopathy or hepatosplenomegaly can be associated with malignancy and inflammatory diseases such as systemic lupus erythematosus. A logical and consistent approach to diagnosis is recommended, with judicious use of laboratory and radiological testing.³

Assuming the physical examination is normal, laboratory work may be considered to rule-out any rheumatologic disease is present. Complete blood count and erythrocyte sedimentation rate (ESR) measurement are useful if infection or rheumatic disease is suspected. Plain radiography can exclude fractures or malignancy while computed tomography (CT) and magnetic resonance imaging (MRI) are more sensitive in detecting joint inflammation. Clinicians should refer

children to a subspecialist when the diagnosis is in question or subspecialty treatment is required.³

If the physical examination, laboratory values and imaging studies are normal, the child should be encouraged to continue with his or her normal activities. Pain can be controlled with over-the-counter ibuprofen or acetaminophen; however, aspirin should not be given because it has been associated with Reye's syndrome. An ice pack wrapped in a towel can also help with the pain. Massage can help; using a massage oil can make the child feel special. One or two hours of "cooling off" time (minimal physical activity) prior to bed can also help minimize symptoms, with some leg stretches which may help. Also, it's not a good idea to tell the child that the pains may be due to playing or growing; this may make the child afraid of both.

Leg pain can be a concern for anyone with children or that cares for children, but when assured that "it's just growing pains", everyone can breath a sigh of relief knowing that it will pass with time.

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