

Overuse Injuries Can Strike Little League Pitchers

BY MELINDA TANZOLA
Contributing Writer

MIAMI — For serious young baseball players, adherence to recommended pitching limitations and proper management of overuse injuries can help ensure continued healthy pitching. Dr. Andrew Gregory explained at a meeting on pediatric sports medicine sponsored by the American Academy of Pediatrics.

Baseball is a relatively safe sport, as most injuries sustained by young baseball players include minor contusions, sprains, and strains. However, the highly repetitive action of pitching can result in overuse injuries of two joints, generally referred to as Little League elbow or Little League shoulder.

Young pitchers are often serious in their sport, sometimes playing on multiple teams at once in hopes of earning a college scholarship or playing professionally. Such intense participation at an early age, however, can have long-term consequences. About one-third of Little League pitchers never play in high school because of overuse in their younger years, accord-



ing to Dr. Gregory of the departments of orthopedics and pediatrics at Vanderbilt University in Nashville, Tenn.

This number may seem high, but pain is a common occurrence in pitching. According to a review of 476 pitchers aged 9-14 years, 7% of youth pitching results in pain, and 28% of pitchers report elbow pain at least once in a season. As Dr. Gregory explained, "They're subjecting themselves to this maximal force over and over again, by trying to throw as hard as they can every time."

About one-third of Little League pitchers never play in high school because of overuse in their younger years.

DR. GREGORY

Most young pitchers with Little League elbow will present with medial elbow pain that occurs only with throwing; they also may not be able to fully straighten the arm. "It is a constellation of problems, the first being stress injury to the medial epicondyle apophysis," Dr. Gregory said in an interview.

He explained that continuing to pitch through the pain can lead to a loss of blood supply to the joint and irritation of the ulnar nerve.

The main treatment should be rest from all throwing. Treatment also should include ice, NSAIDs for pain, scapular and



A fragmented medial epicondyle apophysis is a typical overuse injury.

COURTESY DR. ANDREW GREGORY

core stabilization, and a gradual return to throwing after 6-12 weeks, when throwing no longer hurts. Pitching should be resumed only when the athlete can throw without any pain.

Dr. Gregory said that patients should be referred in the following cases: an acute injury with a "pop," significant widening of the apophysis visible on x-ray, opening with valgus stress, or persistent pain with throwing despite following treatment measures.

Little League elbow is seen in players aged 9-14 years. After the medial epicondylar apophysis closes at age 15-17

Prevention Strategies

Observe these pitch count limits:

- ▶ 9- to 10-year-olds: 50 pitches/game, 75/week, 1,000/season, 2,000/year
- ▶ 11- to 12-year-olds: 75 pitches/game, 100/week, 1,000/season, 3,000/year
- ▶ 13- to 14-year-olds: 75 pitches/game, 125/week, 1,000/season, 3,000/year

In addition, ensure that players:

- ▶ Do not throw curveballs before age 14 or sliders before age 16.
- ▶ Avoid pitching "showcases."
- ▶ Pitch for only one team at a time.
- ▶ Do not pitch and catch for the same team.

years in boys (age 14 in girls), these symptoms are likely caused by injury to the ligament instead.

Dr. Gregory reviewed some pitching restrictions that were designed to minimize the likelihood of pitchers developing an overuse injury. (See box.) He recommended that physicians have handouts with baseball safety tips to give to parents. ■

Think Apophysitis, Not Tendonitis in Youths

BY MELINDA TANZOLA
Contributing Writer

MIAMI — In young children, think apophysitis instead of tendonitis, Dr. Teri McCambridge said at a meeting on pediatric sports medicine sponsored by the American Academy of Pediatrics.

Apophysitis is a traction injury that can occur wherever a tendon attaches to bone in an open apophyseal center. Even though these are growth-related injuries, they usually occur on only one side, and stem from differences in the use of each limb in many sports.

Dr. McCambridge of Johns Hopkins University, Baltimore, emphasized that excessive participation in a single sport is often a culprit. "When you do year-round sports of the same thing, you're stressing the same growth plate over and over, and that's why they are breaking down."

The American Academy of Pediatrics recommends restricting organized sports participation to children at least 6 years of age, while specialization in one sport should be reserved for adolescents.

The way a young tennis player grips her racket or the

placement of cleats on a soccer player's shoes can contribute to an overuse injury such as apophysitis. Dr. McCambridge advised looking for fixable causes and consulting with a coach or if it's not clear what to look for in a particular sport.

Although apophyseal centers close in a distal-to-proximal fashion, the exact timing of their appearance and disappearance varies by joint and by individual. The last apophyseal centers to close in the lower extremity are those in the hips, and, therefore, clinicians should watch for apophysitis of the hip in older adolescent athletes.

Calcaneal apophysitis, or Sever's disease, tends to occur early in the growth spurt, at age 8-12 in girls or age 10-14 in boys. It is most common in sports in which children wear cleats, such as lacrosse and soccer, or do not wear shoes, as in gymnastics or dance.

Children with calcaneal apophysitis often complain of ankle pain, although upon closer examination the source of the pain turns out to be the heel. Dr. McCambridge said that x-rays are generally not warranted except in certain instances, such as children with atypical features or nighttime

pain, those on the extremes of the expected age range, and those who do not improve after treatment.

Other potential causes of joint pain in children, including tendonitis and, rarely, stress fractures, osteomas, tumors, or rheumatologic conditions.

Rest is a critical treatment for apophysitis. Children with



The way a young tennis player grips her racket can contribute to an overuse injury such as apophysitis.

DR. McCAMBRIDGE

calcaneal apophysitis also can use ice and should avoid walking barefoot. Dr. McCambridge suggested that when the child has no pain with daily living, he can return to sport with modifications such as the use of heel cups and supportive shoes and the removal of cleats, especially for practice.

Another common traction apophysitis is Osgood-Schlatter disease (OSD), which occurs at the tibial tuberosity in children aged 11-15 years. Children often present with

pain over the anterior tibia, pain with activity, and pain with full flexion. They also tend to have swelling and palpable tenderness at the tibial tuberosity.

Chronic OSD carries the risk of long-term problems due to the formation of painful, nonunited ossicles resulting from fragmentation of the tibial tuberosity. Because of this risk, Dr. McCambridge tends to radiograph OSD more than any other apophyseal injury to try to prevent the condition from getting to that point.

For children with significant fragmentation, she recommends using a knee immobilizer for 2 weeks, followed by rehabilitation. These athletes tend to remain out of activity for 4-6 weeks.

Fracture extension into the epiphyseal plate is another potential risk of OSD, although it only occurs rarely. Rest is the most important treatment measure for OSD. Children can benefit from stretching and strengthening exercises and the use of a patellar strap. ■

Mountain Biking Tied to Serious Spinal Injuries

HALIFAX, N.S. — Mountain biking is a growing cause of serious spinal injuries, often resulting in permanent disability, Dr. Neilson McLean reported in a poster at the 11th International Conference on Emergency Medicine.

Dr. McLean, an emergency medicine resident at the University of British Columbia, Vancouver, retrospectively examined the trauma and spine registries of three Vancouver-area trauma centers in 1994-2004. During that time, 399 patients were treated for injuries. Of those, 52 sustained spinal injuries.

Most of the patients were male (92%), and they had an average age of 33 years. Most (36) had been wearing a helmet at the time of the accident. The most common mechanism of injury was a fall over the handlebars (29). Their average injury severity score was 17. A total of 54% required surgery.

Most of the patients (71%) sustained a severe spinal injury; 33% had a root injury, 11% a central cord injury, 22% an incomplete spinal cord injury, and 34% a complete spinal cord injury.

Upon discharge, 54% had a neurologic deficit. A total of 32 patients were discharged to home. However, 15 went to a rehabilitation facility and 4 to an acute care facility. One patient left the hospital against medical advice.

—Michele G. Sullivan