Open Lateral Collateral Ligament Injury of the Interphalangeal Joint of the Great Toe in Adolescents During Taekwondo

Reference:

Scientific Literature Reviews

Reviewed by: Nathan Voshel, DPM
Residency Program: Botsford Hospital, Farmington Hills, MI

Podiatric Relevance:
Martial arts is gaining popularity in the United States. Recently, Taekwondo has become an official Olympic sport. The open lateral collateral ligament injury, is a rare sports injury that podiatric physicians may encounter in practice.

Methods:
Seven subjects, including six male and one female between the ages of 10 and 16 (mean age 11.6), were all seen in the emergency department and treated for an open injury at the dorsolateral aspect of the IPJ of the hallux while participating in Taekwondo.

Results:
All of the subjects sustained their injuries while barefoot on the wooden Taekwondo gym floor. The dry, rough, wooden floor is thought to create a high amount of friction on the foot. Six of the subjects were injured while performing fast running and turning exercises. One subject was injured during a high-kicking exercise. All the subjects showed the same pattern and mechanism of injury which involved an indirect injury to the IPJ of the hallux as the whole body was rapidly turning while being supported by only the plantar aspect of the distal phalanx of the hallux.

All subjects were treated in the operating room under anesthesia with copious irrigation of the open wound at the dorsolateral IPJ of the hallux and absorbable suture was used to repair the torn lateral collateral ligament. Subjects wore a cast for six weeks, followed by active and passive range-of-motion at IPJ of the hallux after cast removal. Subjects returned to sports at three months after cast removal. Subjects regained full function and had no complications.

Comments:
This rare sports injury is a result of the high friction of bare feet on a wooden floor. Prevention of this injury involves use of footwear during martial arts or floor modifications including cushioned mats as opposed to wooden floors. This study reiterates the importance of mechanism of injury to fully understand the injury and appropriate treatment required. Podiatric physicians, especially those involved in sports medicine, should be aware of this unique injury in athletes involved in martial arts.