# Hamstring Injury Location Predicts Recovery Time

BY LESLIE SABBAGH
*Contributing Writer*

Hamstring strains that involve the proximal free tendon and are more cranial to the ischial tuberosity have a longer recovery time to preinjury levels.

Carl M. Askling, P.T., of the Karolinska Institutet and Swedish School of Sport and Health Sciences, Stockholm, along with his colleagues evaluated acute first-time hamstring strains in 18 sprint runners.

**The sprinters estimated that they would return to preinjury levels after a median of 4 weeks. The actual return was a median of 16 weeks.**

The researchers measured the progression of clinical and MRI injury signs during the first 6 weeks after the injury. They then correlated those findings with the time it took the athletes to return to preinjury status (Am. J. Sports Med. 2007;35:197-206).

The sprinters, whose injuries occurred at maximal or close to maximal speed, stopped running immediately when the injury occurred, and 11 of the 18 (61%) fell. At the initial examination, 15 sprinters (83%) used crutches.

None of the sprinters reported any preinjury symptoms.

On palpation, all of the patients reported experiencing the most pain in the lateral rear thigh.

The mean distances from the point with the highest pain to the ischial tuberosity were measured at 2-4 days (12 cm), 10 days (11 cm), 21 days (12 cm), and 42 days (11 cm).

The corresponding mean lengths of the painful area were 11 cm, 7 cm, 6 cm, and 5 cm.

At the initial clinical examination, which occurred 2 days after injury, the sprinters estimated that they would return to preinjury levels after a median of 4 weeks.

The actual return was significantly longer: a median of 16 weeks (range, 6-50 weeks).

All of the sprinters could jog without pain at 6 weeks after injury, but only two (11%) could train or compete at their preinjury level.

During the 2-year follow-up period, three of the sprinters (17%) reinjured their hamstrings.

A significant correlation was seen between the location of highest pain during palpation at the first clinical examination and return to preinjury status, and there was a tendency toward a correlation at the second examination.

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**Repeated, carefully performed examinations during the first 3 weeks after an injury will give key information about the prognosis of hamstring strain.**

The more cranial the location, the longer was the return to preinjury level.

The investigators also discovered that free proximal tendon involvement was associated with longer recovery times.

There was no correlation between the palpated length of the painful area and the return to preinjury level.

Recovery prediction was equally as good when the point of highest pain on palpation—established within 3 weeks of injury—was used, as it was when the distance from the most cranial pole of the injury, as determined by MRI, was used.

"Repeated, carefully performed clinical examinations during the first 3 weeks after injury can give important information about the prognosis of a hamstring strain," the authors wrote.

They added that MRIs are also useful for up to 6 weeks after injury in estimating recovery time. ■

# Detailed X-Ray Ordering Key In Evaluating Shoulder Injury

BY ROBERT FINN
*San Francisco Bureau*

SAN FRANCISCO — Plain radiographs are an excellent first-line option for evaluating an individual with an injured shoulder, Dr. C. Benjamin Ma said at a conference on sports medicine sponsored by the University of California, San Francisco.

But the key is to be very specific about the views one wants.

For example, a simple order for anterior-posterior (AP) films of the shoulder will give an oblique and relatively uninformative view of the glenohumeral joint. That's because the shoulder blades are not flat. They're tilted forward, and as a result the glenohumeral joint is rotated toward the midline.

Instead, one should specify an AP view of the glenohumeral joint. The technician will know to tilt the patient slightly before shooting the film.

There are three things that Dr. Ma, of UCSF, said he wants to be able to visualize in the radiographs: the glenohumeral joint, the acromioclavicular joint, and the shape of the acromion.

In addition to the AP view of the glenohumeral joint, Dr. Ma will usually order an axillary lateral view, a supraspinatus outlet view, and an AP view of the acromioclavicular joint.

The axillary lateral film provides a good view of the humeral head sitting in the glenoid fossa. This joint has been likened to a golf ball sitting on a tee. When the shoulder is dislocated, the axillary lateral view allows one to determine whether the golf ball has fallen off the tee toward the front or toward the back.

Anterior dislocations are far more common than are posterior dislocations.

Finally, Dr. Ma said that a weight-bearing view of the shoulder can reveal otherwise hidden problems. He described one patient whom he suspected of having osteoarthritis, but nothing seemed amiss on the regular AP view of the glenohumeral joint. With the patient holding a 1-pound weight, however, it became obvious that there was direct bone-on-bone contact between the humeral head and the glenoid fossa.

To get this view, one should order an AP of the glenohumeral joint with the patient holding a 1-pound weight at 45-60 degrees of abduction. ■

# *CT Better Than X-Rays for Diagnosis Of High-Risk Cervical Spine Injury*

BY MICHELE G. SULLIVAN
*Mid-Atlantic Bureau*

RIVIERA MAYA, MEXICO — For patients with low-risk injuries, three plain-film x-rays are probably sufficient to diagnose clinically significant cervical spine injuries—but for those who have higher-risk injuries or multiple blunt traumas, a computed axial tomographic scan is often a better option.

CTs are "vastly superior" to plain radiographs in identifying cervical injuries, Dr. John Marx said at a meeting on medical negligence and risk management. "While most missed injuries are stable, it only takes one missed unstable injury" to set the stage for a serious problem, he said.

Several key studies have confirmed the usefulness of CT in this setting. One of the best was a subanalysis of the National Emergency X-Radiography Utilization Study, which included 818 patients with cervical spine injuries. About 36% of these patients, all of whom underwent radiographic studies, had a least one additional finding on the cervical spine CT, and 27% of those were not contiguous with the index injury, Dr. Marx said. Plain film also missed 33% of the cervical spine injuries that CT picked up; 74% of those missed injuries were clinically significant. (Ann. Emerg. Med. 2006;47:129-33)

"This is a real argument to go to CT if you see anything on plain film," he said.

A 2005 study confirmed CT's usefulness in 437 unconscious, intubated blunt trauma patients, including 61 with cervical spine injuries. CT scanning had a sensitivity of 98%, a specificity of 99%, and a negative predictive value of 99.7%.

There were no missed unstable injuries. In contrast, adequate lateral cervical spine films detected only 24 injuries (14 unstable), with a sensitivity of 53.3% (J. Trauma 2005;58:897-901)

Another 2005 study retrospectively examined the effectiveness of CT scans in identifying fractures in the thoracic, lumbar, and cervical regions of 236 patients. The CT scans missed fractures in only two patients, and neither of those fractures was clinically significant (J. Trauma 2005;58:890-6).

Although CT is not an inexpensive study, it can easily prove its worth not only in cervical spine, but also in thoracolumbar injuries, said Dr. Marx, chair of emergency medicine at the Carolinas Medical Center in Charlotte, N.C.

For patients with multiple injuries, a cervical spine CT is not only better diagnostically, but "faster and probably more cost effective than trying to get the three plain film views," Dr. Marx said.

"We have also gotten into the habit of pan-scanning the neck, head, chest, and pelvis of our very sick patients who are going to need a lot of studies. This isn't cheap—it costs about $15,000—but it's a wonderful study and seems to make sense for selected patients," he said at the meeting sponsored by Boston University. ■