

Study identifies patients who should not undergo surgery for a snapping hip tendon

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Researchers at Hospital for Special Surgery have identified a group of patients who may have increased difficulty for surgical treatment of a snapping psoas, a condition that usually develops because a teenager or young adult has a pelvis that grows faster than their psoas tendon. The study will be presented at the annual meeting of the American Orthopaedic Society for Sports Medicine (AOSSM), held July 7-11 in San Diego.

"The conclusion from this study is that you should be cautious about releasing the psoas tendon, particularly in cases where there is some structural instability in the [hip](#), specifically increased femoral anteversion, because although the tendon may be causing pain, it is also providing some dynamic support to the hip so it can cause problems if it is released," said Bryan T. Kelly, M.D., who led the study and is co-director of the Center for [Hip Pain](#) and Preservation at Hospital for Special Surgery (HSS) in New York.

The study received the 2011 Herodicus Award given annually by the Herodicus Society at the AOSSM meeting for the best paper submitted by an orthopedic resident or [sports medicine](#) fellow.

The hip is a ball-and-socket joint where the head of the femur (thigh bone) rotates within the cup-shaped socket of the pelvis. The head of the femur is supported by an angled neck which joins to the long [thigh bone](#). At the base of the femoral neck is a boney protrusion. The psoas tendon is one of two hip flexor tendons that attaches to this protrusion. When

the pelvis grows faster than the psoas tendon, this tendon becomes tight and snaps over the pelvis during walking or other activity. This condition, which can be painful, is known as a snapping psoas tendon.

"The reason that it snaps usually has to do with the anatomy of the pelvis. We usually see it in adolescent hips where the pelvis is growing at a faster rate than the tendon can accommodate for the growth," said Dr. Kelly. "Structurally the tendon is not long enough to accommodate the bony anatomy."

Doctors usually treat a snapping psoas tendon with physical therapy that involves stretching and strengthening, anti-inflammatories and corticosteroids, but if this doesn't work, doctors resort to surgically lengthening the tendon. Because the tendon does not have the ability to stretch, surgeons cut slits in the tendon in what is called a partial release of the tendon or a fractional lengthening. "You cut it in a way that allows the muscle to elongate," Dr. Kelly said.

Studies have shown that arthroscopic and open surgery can achieve similar outcomes for this condition. Few studies, however, have studied whether abnormalities in hip structure, specifically femoral anteversion, can impact outcomes. In most people, the center of the femoral neck points toward the center of the hip socket. Femoral anteversion is a condition in which the center of the femoral neck leans toward the front of the socket. This causes the knee and foot on the affected side to rotate internally or twist toward the midline of the body.

In December 2006, HSS researchers started a prospective registry of all hip arthroscopy procedures performed during a three-year period, 2006 to 2009, by a single, high-volume arthroscopic hip surgeon, Dr. Kelly. The study presented at AOSSM included all patients who underwent a psoas tendon lengthening at the time of surgery, a minimum of six months follow-up, and a preoperative high-resolution computed

tomography (CT) scan to detect femoral anteversion. Patients were not included in the study if they had previous tendon hip surgery or hip trauma.

Sixty-seven patients underwent arthroscopic lengthening of a symptomatic psoas tendon, either in isolation or in conjunction with treatment for hip impingement. CT scans showed that 19 of 67 patients had high anteversion. The researchers assessed clinical outcomes both before and after surgery with modified Harris Hip Score (MHHS) and Hip Outcome Score (HOS) questionnaires. These are commonly used to evaluate a patient's ability to carry out specific activities that involve the hip: activities of daily living, such as climbing stairs, and athletic activities, such as running and jumping.

Prior to surgery, patients who had high anteversion scored significantly worse in terms of athletic activities on the HOS, but there was no difference in either questionnaire scores in terms of daily living activities. After surgery, patients who had high anteversion scored significantly worse on the MHHS questionnaire with regard to athletic and daily living activities, but the HOS scores were similar between the two groups. Twice as many patients who had high anteversion had to undergo revision surgery.

The researchers say the psoas tendon may be an important stabilizer in the hips of patients with high anteversion, and the tendon's release in these patients may result in a delayed return to activities after surgery and inferior outcomes.

"The results of this study indicate that there are certain groups of patients that respond very favorably to surgical treatment of the psoas tendon, but there are other groups of patients that due to mechanical reasons, surgeons should exercise extreme caution in proceeding with any tendon release around the hip," Dr. Kelly said. He said these patients

should be considered for alternative treatment strategies.

Provided by Hospital for Special Surgery

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