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Iliopsoas syndrome as a cause of anterior hip pain in the patients with hemiplegic gait

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Introduction: Anterior hip or inguinal pain of the paretic side is not uncommon complaint in the hemiplegic ambulators after stroke. This study was designed to evaluate the clinical efficacy of steroid injection therapy of ipsilateral iliopsoas syndrome (IPS) in them and to suggest possible mechanisms of the syndrome.

Methods: Seventeen stroke hemiplegic ambulators (M:F=10:7, mean age of 51 years) who complained of anterior hip pain in the paretic side were enrolled. Physical examination (PE), and ultrasonography as well as plain radiograph of the affected hip were also performed. A single injection of 80 mg of triamcinolone acetate with 2 ml of 2% lidocaine HCl was performed under the fluoroscopy guidance. At 1, 4, 12-week after the injection, inguinal pain using visual analogue scale (VAS), tenderness on the femoral triangle area (0~3+) were compared between pre- and post-injection groups using repeated measure ANOVA.

Results: Mean duration after stroke was 31.3 months (range from 5 months to 92 months) and mean duration after independent gait was 26.9 months (range from 0 month to 88 months). Thomas test was positive in three of seventeen patients (21.4%), and Patrick test was positive in six of them (35.3%), whereas snapping hip sign (extension from abducted and externally rotated hip) was positive in fourteen (82.4%). Eight (47.1%) of all patients showed joint space narrowing, sclerotic changes and/or spur in the plain radiograph of the hip. Ultrasonography of the hip revealed thickening of tendon in six (42.9%), bursitis in four (28.6%), and both of them in four (28.6%) patients. Three patients showed no abnormality in ultrasonography. At post-injection 1 week, pain was significantly reduced from mean VAS 6.25 to 1.38 (p<.0001) and tenderness of ipsilateral femoral triangle was also significantly decreased from 2.43 to .50 (p<.0001). The improvement of the symptoms and signs continued at least for 3 months and eleven of them for more than 6 months. But in three patients, the symptom recurred within 10 days after first injection requiring two more injections. No serious complications such as neurovascular compromise and/or infection were noted in all cases.

Discussion: The iliopsoas muscle passes anterior to the pelvic brim and hip joint capsule in a groove between the anterior inferior iliac spine (AIIS) laterally and iliopectineal eminence medially. The iliopsoas bursa lies between the musculotendinous unit and the pelvic brim and may extend proximally into pelvic fossa and distally to the lesser trochanter. During extension of a flexed, abducted and externally rotated hip (circumduction in the swing phase of the patients), the normal lateral to medial motion of the iliopsoas tendon is interrupted, resulting in painful snapping of the tendon over the femoral head and anterior hip capsule. Suggested hypothesis is that when the hip is flexed, the weak iliopsoas muscle and anterior portion of the bursa move away from the hip joint, but when the hip is hyperextended (hip hiking), the tension generated stretches both the iliopsoas muscle and bursa and consequently traumatizes the tendon and bursa.

Conclusion: IPS should be considered as a possible cause of anterior hip pain in the hemiplegic ambulators. Circumduction and hip hiking of those patients are thought to be possible biomechanical mechanism resulting in the symptoms. In case of IPS, snapping hip sign was a sensitive test maneuver and fluoroscopy-guided local steroid injection was an effective treatment.

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