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The Iliopsoas Tendonitis
The Snapping Hip

The iliopsoas tendonitis refers to a pathology that affects the insertion of the muscle on the femur. Inevitably, the inflammation of the tendon of the iliopsoas muscle will initiate the inflammation of the underneath bursa (the iliopsoas bursa) and vice versa. Therefore, the iliopsoas tendonitis and the iliopsoas bursitis are commonly used to describe the same pathology.

Generally, the diagnosis of the iliopsoas tendonitis comes very late; about two years after the onset of the initial symptoms. It affects the young adults, and the females are more vulnerable than the males. The main cause of such a disease is the overuse of the muscle; i.e. the repetitive forced flexion and/or forced external rotation of the hip as in dancing, playing football, in ballet, etc.

Sometimes, direct trauma to the groin can induce an acute iliopsoas tendinopathy. However, well recognition of the pathology, and well adapted management thereafter, can most often cure the induced lesion. Otherwise, the pathology will certainly convert to the chronicity.

Hereafter, I will present one of these unusual clinical cases:

The Clinical Case

- *a 26-year-old female;*
- *with a history of insidious deep groin pain on the right side;*
- *most often, with an audible painful hip snap during usual activities;*
- *during 3 years, the intermittent groin pain became constant precluding normal gait;*
- *with radicular symptoms along the anterior thigh down towards the knee;*
- *with pain in the right gluteal area and the right lumbosacral region as well;*

Hereafter, the last x-ray and MRI studies of the right groin:

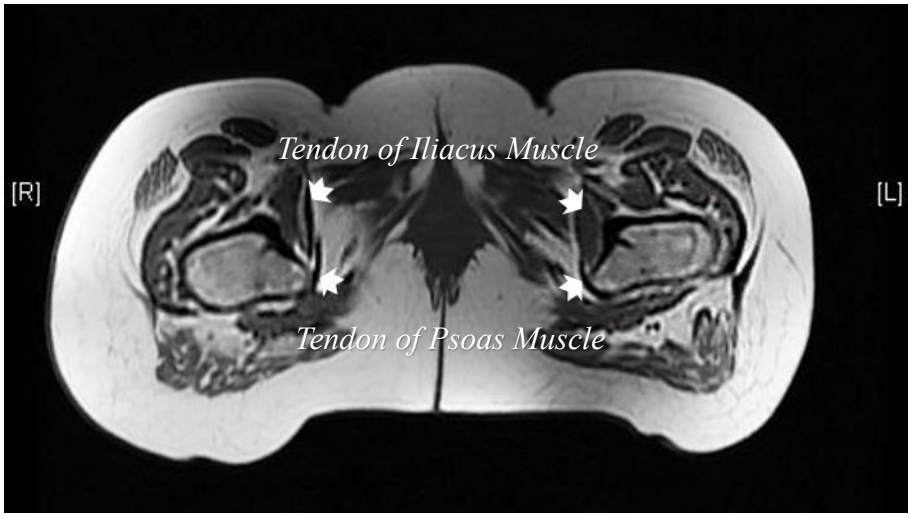

Figure (1)
Trans- Lesser Trochanteric
T2- Axial Section

Normally, as shown in the left side,
the tendon of the iliacus muscle is separated from the tendon of the psoas muscle by a very little amount of fat tissue. The fact that is manifested in the MRI (in both T1 & T2 images) by a very thin high signal in-between the two tendons.

However, in the pathological right side,
we found in T2 trans- lesser trochanteric axial section of MRI a considerable high signal in-between the two tendons as well as in the very close surrounding space.
This high signal is abnormal and indicates to the inflammatory process affecting the peritendinous tissue.

N.B. the two tendons (i.e. the psoas tendon and the iliacus tendons) are completely separated from each other along their course, which is abnormal. Usually, the two tendons unite together forming one larger tendon (i.e. the iliopsoas tendon) that inserts onto the femur bone (as shown in the left side).

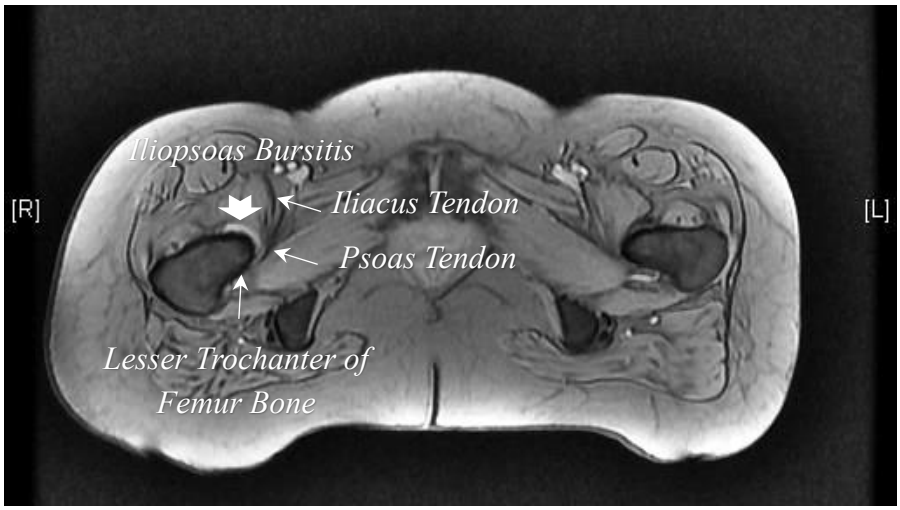

Figure (2)
Trans- Lesser Trochanteric
Fat Suppressed T2- Axial Section

Normally, as shown in the left side,
the normal iliopsoas bursa does not appear in MRI. It does exist anatomically. However, it is of a thin membrane and of a collapsed cavity. Actually, the bursa's membrane is collapsed over itselfm, so the two layers of the membrane become in real contact in order to facilate the movement of the tendon over the bony structures of the region; such as the pelvic rim and the lesser trochanter of the femur bone as well.

However, in the pathological right side,
we found, in an axial section of a fat supressed trans- lesser trochanteric T2 weighted image, a considerable high signal covers the lesser trochanter of the femur bone. It is in a position quite between the bone and the tendons of the iliopsoas muscle (the iliacus tendon and the psoas tendon).
Here, the iliopsoas bursa became of a thicker iflamed membrane and of a real cavity. Since, the inflammatory fluids has considerably filled its cavity, the bursa can be easily detected radiologically.
From now on, the iliopsoas bursitis is the term to use when describe the actual situation ot the iliopsoas bursa.
N.B. the previous image was taken after gadolinium injection.

Figure (3)
Trans- Lesser Trochanteric
T2- Coronal Section

Normally, as shown in the left side,
the lesser trochanter homogenously appears of moderate signal.

However, in the pathological right side,
the lesser trochanter of the femur bone shows abnormal high signa within the bone itself.
This is because of the intra-osseouse inflammatory oedema.

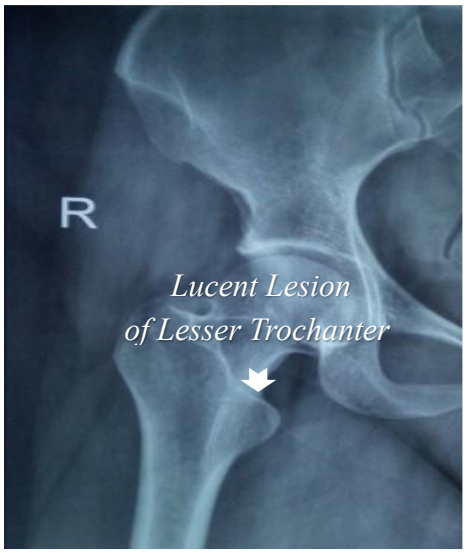

Figure (4)
X- ray of the Right Hip

The x- ray of the right femur shows
a lucent gab inside the lesser trochanter.
The existence of such a gab is the evidence of the severity
and the chronicity of the tendinopathy.

During the last 3 years, the age of her disease, the patient was treated elsewhere by different medical teams. However, all the trials of treatment (rest, NSAIDs, steroids perorally, physiotherapy) had unfortunately failed. The situation deteriorated and became intolerable; pain at rest as well as in activities

Nothing but the steroids locally injected that could finally resolve the pain and give a lot of satisfaction to both of us; the patient and me. They were two episodes of cortisone injection. The two injections were done in a blind method depending on the point of maximal tenderness and my knowledge of the local anatomy.

I used a mixture of Betacort 2ml (which is the equivalent of Diprofos) and 8 ml of lidocaine 1%. It was just a few minutes after the injection, then, the pain has completely vanished. Actually, that was additional argument to confirm our diagnosis, and to follow with full satisfaction our plan of treatment.

The discussion

This case has two significantly interesting things. Firstly, the two tendons of the right iliopsoas muscle (i.e. the psoas tendon and the iliacus tendon) conserved their independence from each other. We can recognize both of them along their course, which is unusual. Secondly, there are three components of the pathology itself; the iliopsoas tendinopathy, the iliopsoas bursitis, and the bony inflammatory component.

Actually, the two tendons start merging in one tendon (i.e. the iliopsoas tendon) at the level of the pelvic rim. So, it is suspected to find one large tendon that inserts onto the lesser trochanter of the femur bone (as it is the case on the left side).

A faible amount of fat tissue in- between the two tendons does exist normally. However, it is located so far distally, just close to the point of tendon insertion on the femur bone (as it is the case on the left side).

Moreover, some muscular tissue of the lateral iliacus muscle continues distally until the femur bone. This is a normal anatomy, and does exist on both sides; ***see figure (5):***

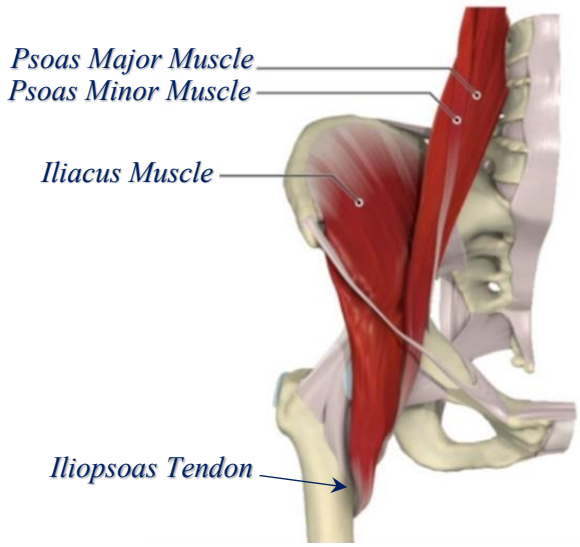

figure (5)
The Anatomy of Iliopsoas Muscle

the iliopsoas muscle is composed of three muscles;
the iliacus muscle, the psoas major muscle, and the psoas minor muscle.

The psoas major muscle arises from the transverse processes and the lateral surfaces of the vertebral bodies of the 12th dorsal and the first to fifth lumbar vertebrae. The psoas minor muscle originates from 12th dorsal and the 1st lumbar vertebrae, and lies anterior to the psoas major muscle. The psoas major muscle and psoas minor muscle are innervated by collateral branches of L1 to L3.

The iliacus muscle originates from the upper two thirds of the iliac fossa and the lateral parts of the wing of the sacrum. It is supplied by the femoral nerve (L3, L4).

The psoas major and iliacus muscle join together, and pass under the inguinal ligament. the iliopsoas tendon inserts on the lesser trochanter of the femur bone.

The iliopsoas complex is the strongest flexor of the thigh and the trunk. It assists in external rotation of the femur, and lateral flexion of the lower vertebral column.

On the right side, the separation between the two tendons abnormally is complete and remarkable. Here, we have two tendons with two different points of insertion on the femur bone. Actually, I am wondering if it is an inherent anatomy or it is just secondary to the inflammatory process. It happens that the inflammatory fluids infiltrate within the natural tissue planes rendering them wider and detectable radiologically.

The partnership between the iliopsoas bursitis and the iliopsoas tendinopathy is omnipresent. The first pathology imposes the presence of the second one and vice versa.

The iliopsoas bursa is the largest bursa in the body. It separates the iliopsoas tendon from the underneath bony structures (i.e. the pelvic rim and the lesser trochanter of the femur bone) as well as from the hip capsule. The communication between the bursa and the hip capsule does exist in 15%; ***see figure (6):***

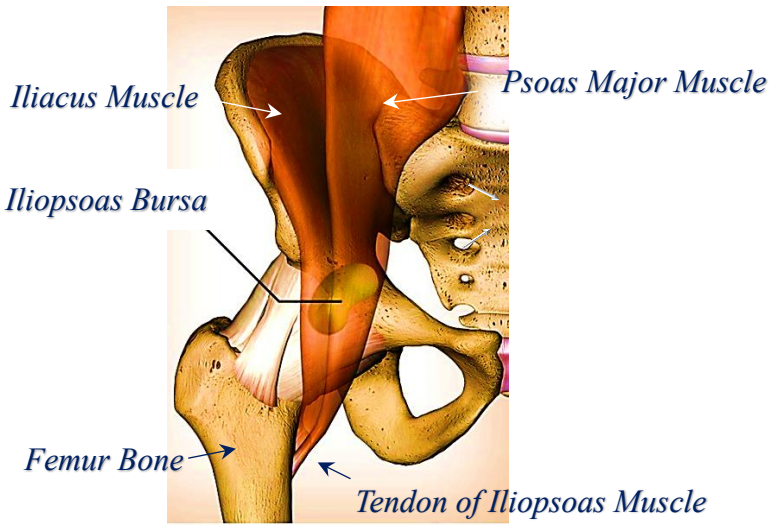

Figure (6)
The Iliopsaos Bursa
The Anatomy

The iliopsoas bursa or the iliopectineal bursa
lies between the bony surfaces of the pelvis and proximal femur and the musculotendinous unit.
It is the largest bursa in the human body. It extends from the iliopectineal eminence to lower portion of the femur head. Sometimes it distally extends until the lesser trochanter.

However, which is uncommon is the presence of an inflammatory lesion within the lesser trochanter itself. Its presence suggests the long-standing tendinopathy and the severity of the symptoms as well. Nevertheless, its presence imposes some difficulties in the treatment regarding the period of treatment as well as the means of that treatment.

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- *Neural Conduction, Personal View vs. International View (Innovated)*
- *Upper Motor Neuron Lesions, Pathophysiology of Symptomatology*
- *Neural Conduction, Action Pressure Waves (Innovated)*
- *Neural Conduction, Action Potentials (Innovated)*
- *Neural Conduction, Action Electrical Currents (Innovated)*
- *The Function of Action Potentials (Innovated)*
- *The Three Phases of Neural Conduction (Innovated)*
- *Neural Conduction in the Synapse (Innovated)*
- *Sensory Receptors*
- *Nodes of Ranvier, the Equalizers (Innovated)*
- *Nodes of Ranvier, the Functions (Innovated)*
- *Nodes of Ranvier, First Function (Innovated)*
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- *Spinal Injury, Pathophysiology of Spinal Shock, Pathophysiology of Hyperreflexia*
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- *Spinal Shock (Innovated)*
- *The Clonus (Innovated)*
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- *Hyperreflexia, Extended Sector of Reflex*
- *Hyperreflexia, Bilateral Responses*
- *Hyperreflexia, Multiple Responses*
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- *Neural Regeneration (Innovated)*
- *Wallerian Degeneration Attacks Motor Axons, While Avoids Sensory Axons*
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- *Boy or Girl, Mother Decides!*
- *Adam's Rib and Adam's Apple, Two Faces of one Sin*
- *The Black Hole is a (the) Falling Star?*
- *Adam's Rib, could be the Original Sin?*
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- *Hyperreflexia, Innovated Pathophysiology*
- *Clonus, 1st Hypothesis of Pathophysiology*
- *Clonus, 2nd Hypothesis of Pathophysiology*
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- *Hyperreflexia (1), Pathophysiology of Hyperactivity*
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- *Hyperreflexia (3), Pathophysiology of Extended Hyperreflex*
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- *This Woman Can Give Birth to Female Children More Than to Male*
- *This Woman Can Give Birth to Male Children More Than to Female*
- *This Woman Can Equally Give Birth to Male & to Female Children*

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- *Corona Virus (Covid-19): After Humiliation, Is Targeting Our Genes*
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- *Barr Body; Mystery of Origin & Ignorance of Function*
- *The Multiple Sclerosis: The Causative Relationship Between The Galvanic Current & Multiple Sclerosis?*
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