



## Hypertrophy of the Faciae Latae: A Pseudotumor of the thigh

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### ABSTRACT

**Introduction:** Although trochanteric pain is a common entity, unilateral hypertrophy of the Tensor Fasciae Latae (TFL) is a very rare condition, with few descriptions published. We report our experience with two patients with unilateral hypertrophy of the TFL muscle as a differential diagnosis of a tumor-like soft tissue mass on the thigh.

**Materials and Methods:** Case A: 51-year-old woman, consulting for long evolution left hip pain associated with a soft tissue tumor on the proximal thigh, without growth on the last year.

**Magnetic Resonance Image (MRI):** Tensor fasciae latae hypertrophy, associated with atrophy of gluteus muscles and degenerative changes on the coxo-femoral joint. Case B: 69-year-old woman without medical history of interest, consulting for swelling on the left anterior thigh, associated with local pain and growth in the last 3,4 months. TFL muscle hypertrophy, with higher volume compared to contralateral site, without any difference on structure, not lipomatous infiltration or any other. Not pathologic images found. Ultrasonography The structure is the same echogenicity of muscle fibers, without any increased flow on Doppler images. It suggests a pseudotumor based on hypertrophy of the fasciae latae muscle.

**Results:** Both patients were treated with conservative treatment and clinical observation.

**Conclusion:** Hypertrophy of the tensor fasciae latae is a rare, benign clinical entity, with soft tissue swelling on the anterolateral proximal thigh. Its etiology has been associated with gluteus dysfunction, but it may also correlate with other pathologies with TFL over-activation, such as hip joint osteoarthritis or ACL injury. The main diagnostic tool seems to be the MRI, and best treatment could associate clinical observation with regular hip abductor training.

### ARTICLE HISTORY

Received: September 21, 2020

Accepted: October 5, 2020

Published: October 12, 2020

### KEYWORDS

Tensor fasciae latae;  
Pseudotumor; Orthopedics;  
Soft tissue tumor

### Introduction

The incidence of soft tissue masses is approximately 3 per 1000 per year [1]. The challenge is to make a correct differential diagnosis upon a finding, avoiding an excessive evaluation on the patients with benign pathologies but

Identifying and treating promptly the ones with malignancy. Tumor and tumor like lesions on the hip and pelvic share many characteristics with other parts of the body, but there are also specific

differences associated with the location [2]. Soft tissue benign tumors are the most frequent, being lipomas on the 98% to 99% of the patients. Malignant tumors are typically sarcomas [3]. Other tumor like lesions includes infections, cysts or vascular lesions. Tensor fasciae latae (TFL) is a muscle located anterolaterally on the proximal region of the thigh that lies between the superficial and deep fibers of the iliotibial band [4]. The anteromedial fibers of the muscle have a predominant hip flexion function, whereas the posterolateral fibers assist hip

abduction and internal rotation [5]. Its main role is balancing the weight of the body and the non-weight-bearing leg during walking [6]. It also contributes to the stabilization of the hip on the initiation of the gait cycle. TFL action on the initiation of the gait cycle correlate with electromyography studies, in which activity decreases significantly with incremental increases in hip flexion angle [7]. Many pathologies associate hip and trochanteric pain, due to an excessive activation of the TFL, like hip joint pathology, Anterior Cruciate Ligament (ACL) injury, iliotibial band syndrome and patellofemoral joint osteo-arthritis [8]. Although trochanteric pain is a common entity, unilateral hypertrophy of the TFL is a very rare condition, with few descriptions published [9]. We report our experience with two patients with unilateral hypertrophy of the TFL muscle as a differential diagnosis of a tumor-like soft tissue mass on the thigh.

**Case Presentation**

**Case A**

51-year-old woman, consulting for long evolution left hip pain associated with a soft tissue tumor on the proximal thigh, without growth on the last year. Antecedents of interest include an osteomyelitis on the same limb at infant age without clinical sequelaes. Patient could not specify joint affected. On the physical examination a thigh swelling is found. No clinical criteria of local aggressivity. There is no pain on one leg weight bearing and not limping. Magnetic Resonance Image (MRI): Tensor fasciae latae hypertrophy, associated with atrophy of gluteus muscles and degenerative changes on the coxo-femoral joint.

**Case B**

69-year-old woman without medical history of interest, consulting for swelling on the left anterior thigh, associated with local pain and growth in the last 3, 4 months.

On the physical examination an 8 cm mass is found on the 1/3 proximal anterior site of the thigh, not painful.

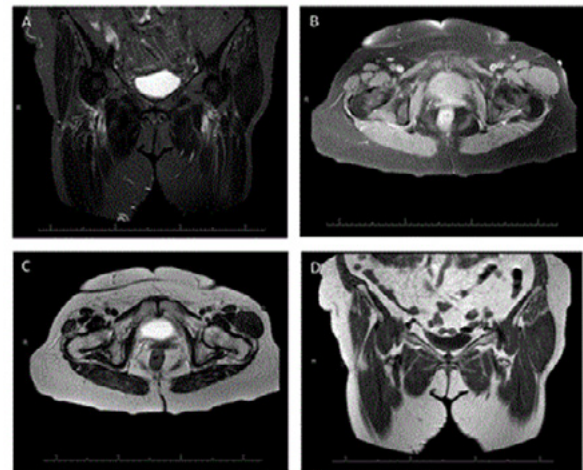
**X-Ray image**

Not significant alterations.

**MRI (Figure 1)**

TFL muscle hypertrophy, with higher volume

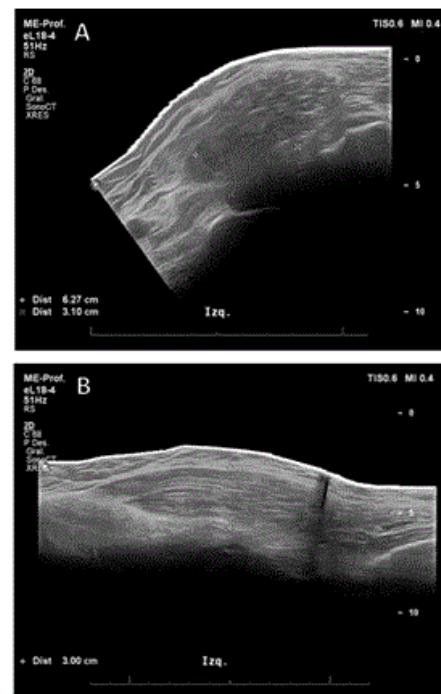
compared to contralateral site, without any difference on structure, not lipomatous infiltration or any other. Not pathologic images found (Figure 1).



**Figure 1.** Case B MRI (A) Stir coronal cut, (B) T1 fat-suppression axial cut, (C) T2 axial cut, (D) T1 coronal cut.

**Ultrasonography (Figure 2)**

The structure is the same echogenicity of muscle fibers, without any increased flow on Doppler images. It suggests a pseudotumor based on hypertrophy of the fasciae latae muscle (Figure 2).



**Figure 2.** Case B ultrasonography. (A) Axial cut, (B) longitudinal cut.

## Results

Both patients were treated with conservative treatment and clinical observation. They were both examined 6 months after the diagnosis, with a clinical evaluation annually since. Due to the absence of growth or physical limitation on both patients, there was no need for biopsy or surgical treatment, or repetition of the MRI or ultrasonography.

## Discussion

Tensor fasciae latae hypertrophy is a rare pathology, with few cases published. It is an alternative diagnosis for soft tissue masses on the antero-lateral proximal thigh. Its etiology has been associated with tears of the abductor muscles of the hip [10]. Impaired hip abduction secondary to dysfunction or tears of the gluteus muscles over-activates TFL as compensation. Patients with higher BMI and dysfunction on the abductor muscles of the hip tend to have a hypertrophic and less fatty infiltrated TFL. On the patients described, Case A showed atrophy of the gluteus muscles on the MRI, without any sign of tear. Hypertrophy may have occurred after partial loss of the function of the abductor muscles of the hip, as a compensatory sign. There was no abductor alterations described on the other patient that could justify a compensatory hypertrophy of TFL. MRI seems to be the best technique for differential diagnosis of soft tissue masses, showing muscle hypertrophy, with no need for biopsy or surgical intervention on patients without any pathological imaging and absence of clinical criteria of aggressivity or growth [11]. Ultrasonography could be an alternative, showing a normal muscular echogenicity without any alterations on doppler that could indicate a neoplastic, vascular or infection origin of the lesion.

## Conclusion

Hypertrophy of the tensor fasciae latae is a rare, benign clinical entity, with soft tissue swelling on the anterolateral proximal thigh. Its etiology has been associated with gluteus dysfunction, but it may also correlate with other pathologies with TFL over-activation, such as hip joint osteoarthritis or ACL injury. The main diagnostic tool seems to be the MRI, and best treatment could associate clinical observation with regular hip abductor training.

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