

## Ultrasound Evaluation Of The Greater Trochanter Pain Syndrome: Bursitis Or Tendinopathy?

Cristian Quiroz<sup>1</sup>, Santiago Ruta<sup>1</sup>, Javier Rosa<sup>1</sup>, David A. Navarta<sup>1</sup>, Ricardo Garcia-Monaco<sup>2</sup> and Enrique R. Soriano<sup>3</sup>.  
<sup>1</sup>Rheumatology Unit, Internal Medical Services, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina, <sup>2</sup>Radiology and Imagenology Department, Hospital italiano de Buenos Aires, Buenos Aires, Argentina, <sup>3</sup>Rheumatology Unit, Internal Medical Services, Hospital Italiano de Buenos Aires, Instituto Universitario Hospital Italiano de Buenos Aires, and Fundacion PM Catoggio, Buenos Aires, Argentina.

**Background/Purpose:** Greater trochanteric pain syndrome (GTPS) is a common clinical problem that may be caused by a variety of either intra-articular or peri-articular pathologies. Inflammation of the trochanteric bursa has been postulated for a long time as the main cause of pain at trochanteric level. However, some studies have questioned the real involvement of the trochanteric bursa in the GTPS, and tendinopathy of the gluteus medius and/or minimus has been proposed as an important cause of this syndrome. The aim of the present study was to evaluate the prevalence of different US abnormal findings in patients with GTPS.

**Methods:** A retrospective analysis was carried out from the electronic medical records of consecutive patients complaining of a GTPS who underwent an US assessment of the greater trochanter between January 2011 and February 2013 at a Rheumatology Unit. US assessment was performed in all cases by the same experienced rheumatologist using a MyLab 70 XV (Esaote Biomedica, Genoa, Italy) machine equipped with a broadband 4–13 MHz linear probe. The presence or absence of the following US abnormal findings was investigated: 1) tendinopathy (tendinosis, calcific tendinosis and/or tendon tear) of the gluteus medius and/or minimus; 2) trochanteric bursitis (fluid distension). Additionally, we investigated if patients had also magnetic resonance imaging (MRI) evaluation of the hip within the 30 days before or after US evaluation.

**Results:** A total of 124 US examinations of the greater trochanter in 96 patients (28 underwent bilateral US evaluation) were included for the analysis. Eighty-seven patients (90.6%) were female and the mean age (SD) was 64.3 years (14.7). Sixty-eight (55%) US examinations were ordered by rheumatologists and the others by general practitioners, orthopedics and internal medicine consultants. Tendinopathy of the gluteus medius and/or gluteus minimus, as the only US abnormal finding, was detected in 62 out of 124 (50%) examinations. Bursitis, as the only US abnormal finding, was found in 5 out of 124 (4%) examinations. Eighteen (14.5%) US examinations showed a combination of both tendinopathy of the gluteus medius and/or gluteus minimus and trochanteric bursitis. Calcifications were found in 12 out of 80 (15%) tendinopathies. In 39 (31.5%) US examinations no abnormalities were detected. Twenty-five patients had also unilateral MRI evaluation of the hip. The unweighted kappa values between US and MRI for the detection of tendinopathy of the gluteus medius and/or gluteus minimus and trochanteric bursitis were 0.746 (95% CI: 0.477–1.014) and 0.715 (95% CI: 0.415–1.014), respectively.

**Conclusion:** Tendinopathy of the gluteus medius and/or minimus was the most frequent US abnormal finding in patients with GTPS. Trochanteric bursitis was less common and had associated tendinopathy in the majority of the cases. There was good agreement between US and MRI. These results support the role of pathology of the gluteus tendons as the major cause of pain in patients with GTPS.