Endoscopic treatment for greater trochanteric pain syndrome: one-year outcomes and comorbidity impact

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To evaluate the clinical outcomes of endoscopic treatment for greater trochanteric pain syndrome (GTPS) and to assess the influence of comorbidities such as anxiety-depressive syndrome (ADS) and fibromyalgia on recovery.

Between January and April 2023, 26 endoscopic procedures for GTPS were retrospectively analyzed. Patients included were ≥18 years, presented with GTPS lasting more than six months, and had failed conservative management including physiotherapy, infiltrations, and shockwave therapy. All underwent endoscopic bursectomy and cruciform iliotibial band release. Outcomes were assessed at baseline, 3, 6, and 12 months using the Visual Analogue Scale (VAS), modified Harris Hip Score (mHHS), and Hip Outcome Score for Activities of Daily Living (HOS-ADL) and Sports Subscale (HOS-SS).

Of the 25 patients (26 hips) included, 80.8% were women, with a mean age of 53.4 years. Statistically significant improvements (p < 0.05) were observed in all functional scores at 3 and 6 months. Improvements in VAS, mHHS, and HOS-ADL persisted at 12 months, while HOS-SS plateaued. ADS was present in 46.2% of patients. Although these patients had lower baseline scores, postoperative outcomes were not significantly different compared to non-ADS patients.

Endoscopic treatment of GTPS provides early and sustained functional improvement. The presence of anxiety-depressive syndrome or fibromyalgia does not appear to adversely impact surgical outcomes.

Keywords: Hip, greater trochanteric pain syndrome, diagnosis, anxiety, endoscopic treatment.

INTRODUCTION

Greater trochanteric pain syndrome (GTPS) is a common cause of lateral hip pain, particularly in middle-aged women[1,2], with an estimated incidence of 1.8 per 1,000 persons annually in primary care[3]. It comprises a spectrum of disorders including trochanteric bursitis, gluteus medius and minimus tendinopathies, and external snapping hip syndrome[4]. Trochanteric bursitis is the most frequent manifestation and is often related to repetitive stress, microtrauma, altered gait mechanics, lumbar spine disorders, and gynecoid pelvic morphology[5-7]. Furthermore, comorbidities such as obesity and anxiety-depressive disorders have been associated with GTPS[8,9].

Clinically, GTPS presents as deep, aching pain over the greater trochanter that may radiate to the gluteal region or along the iliotibial band[10]. The pain is typically worsened by direct pressure, prolonged standing, or resisted hip abduction[2,11]. Due to overlapping symptoms with other musculoskeletal conditions, GTPS has been referred to as "the great mimicker." Although diagnosis is primarily clinical[3,12], magnetic resonance imaging (MRI) is frequently used to identify bursitis or abductor tendon pathology and correlates well with intraoperative findings[13].

Conservative management remains the first-line treatment for GTPS and includes weight reduction, non-steroidal anti-inflammatory drugs, corticosteroid or platelet-rich plasma (PRP) injections, and physiotherapy focused on stretching, strengthening, and motor control[14-16]. Extracorporeal shockwave therapy has also shown promising results in refractory cases[14]. These modalities are generally effective, with reported success rates exceeding 90%[15].

When conservative treatment fails, surgical intervention may be indicated. Traditional open procedures have largely been replaced by endoscopic

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techniques, which offer reduced morbidity, less tissue disruption, faster recovery, and improved cosmetic outcomes[13,17,18]. Among them, endoscopic bursectomy combined with cruciform release of the iliotibial band is considered a safe and effective option for selected patients with persistent symptoms[19].

Despite the increasing use of endoscopic techniques for GTPS, most studies are limited by small sample sizes and short follow-up. High-quality, large-scale studies remain scarce, particularly in patients with comorbid psychosocial disorders.

Therefore, we conducted this prospective case series to evaluate the outcomes of endoscopic treatment in patients with refractory GTPS and to assess whether anxiety-depressive syndrome or fibromyalgia negatively affect recovery.

MATERIALS AND METHODS

This prospective case series was conducted between January and April 2023, during which 30 endoscopic procedures for GTPS were performed. Of these, 26 cases met the inclusion criteria and were enrolled. Institutional Review Board (IRB) approval was obtained prior to study initiation, and all participants provided written informed consent.

Inclusion criteria were: patients aged ≥18 years, with a clinical diagnosis of GTPS lasting ≥6 months, and persistent symptoms despite conservative treatment including physiotherapy, pharmacologic therapy, extracorporeal shockwave therapy, or corticosteroid/ PRP injections. Exclusion criteria included previous hip surgery, absence of bursitis or gluteal tendon involvement on MRI, follow-up shorter than 12 months, or incomplete clinical data.

All procedures were performed using the endoscopic technique described by Ilizaliturri et al.[19]. Patients were placed in the lateral decubitus position under general anesthesia. After identifying bony landmarks, two portals were established—proximal and distal to the tip of the greater trochanter. A cruciform fasciotomy of the iliotibial band (longitudinal and transverse) was performed, followed by a wide bursectomy. This created a rhomboid opening to improve visualization of the gluteal tendon insertions and facilitate treatment of any associated lesions. It should be noted that no cases of external snapping hip were included in this series, despite the use of Ilizaliturri's technique.

Postoperative protocol began on the first postoperative day with partial weight-bearing using two crutches and passive mobilization for two weeks. Patients initiated stationary cycling after one week,

pool therapy after 10 days, and elliptical exercise after three weeks.

Clinical assessment included the Visual Analogue Scale (VAS) for pain, the modified Harris Hip Score (mHHS), and the Hip Outcome Score for Activities of Daily Living (HOS-ADL) and Sports Subscale (HOS-SS). Evaluations were conducted preoperatively and at 3, 6, and 12 months postoperatively.

Statistical analyses were conducted using IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY, USA). Normality of data distribution was assessed using the Shapiro-Wilk test. Depending on the distribution, paired t-tests or Wilcoxon signed-rank tests were used to compare preoperative and postoperative outcomes. A p-value < 0.05 was considered statistically significant.

This study was approved by the institutional ethics committee and conducted in accordance with the Declaration of Helsinki (2013). Written informed consent was obtained from all participants, and patient confidentiality was strictly maintained.

RESULTS

A total of 26 endoscopic procedures were included (25 patients; 1 bilateral case). The cohort consisted predominantly of women (n = 21; 80.8%), with a mean age of 53.4 ± 12.1 years and a mean body mass index (BMI) of 25.6 ± 3.9. All patients presented with chronic lateral hip pain lasting between 6 and 24 months. Inclusion was limited to cases with MRI-confirmed bursitis and/or gluteus medius tendinopathy. External snapping hip was not present in any case.

All patients were treated using the same standardized surgical technique: endoscopic bursectomy combined with cruciform iliotibial band release. Intraoperative endoscopic evaluation consistently revealed inflamed trochanteric bursae and signs of gluteus medius tendinopathy. No formal classification system was applied to the endoscopic findings, as this was not part of the original study design.

Statistically significant improvement was observed in all outcome measures at 3 and 6 months. Improvements in VAS, mHHS, and HOS-ADL remained significant at 12 months, while HOS-SS plateaued after 6 months (Table I).

A secondary analysis explored the prevalence and impact of comorbidities. Anxiety-depressive syndrome (ADS) was present in 12 patients (46.2%). Other comorbidities included fibromyalgia (11.5%), hypothyroidism (3.8%), rheumatic disease (7.7%), and lumbar spinal fusion (3.8%) (Table II).

Table I. — Functional outcome scores at baseline and at 3, 6, and 12 months postoperatively. Values are presented as mean score points.

	Preoperative	3 months	p-value	6 months	p-value	12 months	p-value
HOS-ADL	56.96 ± 23.42	68.89 ±18.35	0.019	78.51± 20.79	0.004	81.45 ± 20.55	0.110
HOS-SS	32.27 ± 25.88	52.46 ±26.23	0.002	62.18± 26.63	0.005	61.86 ± 24.58	0.932
VAS	81.42 ± 14.39	40.00 ±27.72	<0.001	29.31± 28.02	0.002	23.15 ± 27.6	0.003
mHHS	45.90 ± 17.30	70.57 ±21.13	<0.001	78.73± 20.80	0.007	85.08 ± 16.61	0.006
HOS-ADL: Hip Outcome Score–Activities of Daily Living; HOS-SSS: Hip Outcome Score–Sports Subscale; mHHS: Modified Harris Hip Score; VAS: Visual Analogue Scale.							

Table II. — Distribution of comorbidities among patients included in the study. Values are expressed as number of cases and corresponding percentages.

	N (%)
No comorbidities	11 (42.3%)
Anxiety-depressive syndrome	12 (46.2%)
Fibromyalgia	3 (11.5%)
Hypothyroidism	1 (3.8%)
Rheumatic disease	2 (7.7%)
Lumbar spinal fusion	1 (3.8%)

Table III. — Outcome variables analyzed according to the presence or absence of anxiety-depressive syndrome (ADS).

	HOS-ADL		p	HOS-S		p	VAS		p	mHHS		p
ADS	Yes	No		Yes	No		Yes	No		Yes	No	
Preop	47.43±19.34	65.13±24.14	0.099	22.45±21.37	40.67±27.14	0.67	83.83±13.92	79.36±14.99	0.351	41.71±15.64	49.50±18.39	0.19
3 months	67.03±19.06	70.48±18.29	0.959	50.00±21.29	54.56±30.48	0.68	36.83±28.99	42.71±27.38	0.553	65.73±24.47	74.72±17.66	0.34
6 months	78.43±23.13	78.57±19.46	0.938	59.49±25.72	64.48±28.14	0.59	22.67±27.33	27.29±28.16	0.27	81.40±23.41	76.45±18.87	0.37
1 year	82.72±2.54	80.36±19.47	0.59	62.96±22.42	60.91±27.10	0.63	18.33±27.33	27.29±28.16	0.43	87.54±17.29	82.97±16.54	0.33
HOS-ADL: Hip Outcome Score – Activities of Daily Living; HOS-SSS: Hip Outcome Score – Sports Subscale; mHHS: Modified Harris Hip Score; VAS: Visual Analogue Scale.												

Subgroup analysis comparing patients with and without ADS showed no statistically significant differences in any outcome measure at 3, 6, or 12 months. Although the ADS group had lower preoperative scores, these differences did not persist postoperatively. Each p-value reported in Table I reflects the comparison between preoperative scores and those at 3, 6, and 12 months, respectively (Table III).

DISCUSSION

The results of this study confirm that endoscopic treatment of greater trochanteric pain syndrome (GTPS) leads to significant improvements in pain and functional outcomes, supporting its value as a minimally invasive surgical option for patients with refractory symptoms[5,13,17]. These findings are consistent with previous studies that report favorable outcomes following endoscopic techniques for GTPS[4,13,20-23].

Although conservative therapy remains the first-line treatment, patients in this series underwent a structured, standardized protocol prior to surgery, including physiotherapy, pharmacologic treatment, and five sessions of focused shockwave therapy[14,24]. Only those who failed to respond to these measures proceeded to surgical intervention. This strengthens the validity of the results by confirming that all included patients had truly refractory symptoms[12,14].

Endoscopic treatment was performed uniformly using a standardized technique. While GTPS encompasses various pathologies, our inclusion criteria and intraoperative findings confirmed a relatively homogenous group with bursitis and/or

gluteus medius tendinopathy. No patients had external snapping hip, and a cruciform release of the iliotibial band was performed in all cases.

A secondary aim of this study was to evaluate the effect of comorbid conditions—particularly anxiety-depressive syndrome (ADS) and fibromyalgia—on surgical outcomes. Prior research by Plinsinga et al.[18,25] has demonstrated that patients with GTPS and comorbid ADS may experience amplified pain perception and impaired central pain modulation. These factors are believed to complicate both conservative and surgical treatment. In our study, patients with ADS had lower preoperative scores, but postoperative improvements were comparable to those without ADS at all timepoints. This aligns with findings by Dzidzishvili et al.[26], suggesting that psychosocial factors should not automatically preclude surgical intervention.

Our results offer two key contributions. First, they reinforce the clinical effectiveness of endoscopic surgery for GTPS in a well-defined patient cohort. Second, they suggest that the presence of anxiety-depressive comorbidity does not negatively impact recovery, thereby encouraging more inclusive surgical decision-making.

This study has several limitations. The absence of a control group limits comparisons with non-operative outcomes. In addition, although we observed meaningful clinical improvements, minimum clinically important difference (MCID) values were not calculated. We acknowledge that the sample size of our study is limited; however, it provides valuable insight into a subgroup of patients with anxiety-depressive symptoms, who have historically been under-recognized and may be at risk of undertreatment. Finally, subgroup analysis was limited by sample size, and future studies with larger cohorts and longer follow-up are warranted.

CONCLUSION

Endoscopic fasciotomy is a reproducible and safe surgical technique that yields favorable outcomes in patients with greater trochanteric pain syndrome (GTPS) refractory to conservative treatment. At one-year follow-up, patients showed significant clinical improvements in pain and function across multiple validated outcome measures. Notably, the presence of anxiety-depressive syndrome or fibromyalgia did not negatively influence surgical outcomes, suggesting that these comorbidities should not be considered exclusion criteria when evaluating candidates for endoscopic intervention. These findings may support more inclusive surgical decision-making and expand the scope of patients eligible for effective treatment.

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