Endoscopic Iliotibial Band Lengthening and Bursectomy Effectively Improves Pain and Function in Patients with Greater Trochanteric Pain Syndrome

Ashlyn A. Callan[1], Harrison Volaski[2], Brandon Boyd[2], Yungtai Lo[1], Ferdinand J. Chan[2]
[1]Albert Einstein College of Medicine, Bronx, NY, [2]Montefiore Medical Center, Bronx, NY
Ashlyn.callan@einsteinmed.edu

Disclosures: Ashlyn A. Callan (N), Harrison Volaski (N), Brandon Boyd (N), Yungtai Lo (N) Ferdinand J. Chan (N)

INTRODUCTION: Greater trochanteric pain syndrome (GTPS) is a condition caused by overuse that results in lateral hip pain. There is a paucity of outcome data with regards to patients undergoing endoscopic surgical bursectomy and iliotibial band (ITB) lengthening in the setting of chronic GTPS and trochanteric bursitis that is unresponsive to conservative treatment. The aim of this study is to determine patient reported outcomes following endoscopic bursectomy and ITB lengthening for the treatment of ITB syndrome with trochanteric bursitis. We hypothesize that endoscopic bursectomy and ITB lengthening will significantly improve pain and function outcome scores for the treatment of ITB syndrome with trochanteric bursitis.

METHODS: Activity of daily living score (ADL), subsets of the hip outcome score (HOS), modified Harris hip score (HHS), total function scores from 0-100, and UCLA activity score were self-reported by 17 pre-operative and 13 post-operative adult patients who underwent endoscopic bursectomy and ITB lengthening for treatment of GTPS at least one year after surgery. The average age was 53.6 years (range, 27–86 years), and there were 8 male and 22 female patients. This study received IRB approval on 8/16/2022 with IRB number 2022-14056. The data were compared using Wilcoxon rank-sum tests under the assumption that two groups are independent.

RESULTS SECTION: In terms of hip outcome score subsets, the median total ADL score is 43.75 for preoperative and 91.18 for postoperative (p-value < 0.001). Median current level of function during usual activities is 45.0 for preoperative and 80.0 for postoperative (p-value = 0.001). Median total function score is 34.52 for preoperative and 90.22 for postoperative (p-value = 0.001). Median current level of function during sports is 25.0 for preoperative and 80.0 for postoperative (p-value = 0.001). Median modified Harris hip score is 33.0 for preoperative and 77.0 for postoperative (p-value < 0.001). Median UCLA activity score is 3.0 for preoperative and 6.0 for postoperative (p-value = 0.028). There is no significant difference in sex or age between participant groups. There were no adverse outcomes in either group.

DISCUSSION: GTPS is an overuse condition commonly resulting in lateral hip pain. Previous control of symptoms had been limited to conservative methods such as rest, non-steroidal anti-inflammatory medication and physical therapy (Strauss et al., 2011). These conservative methods are often successful, with one study finding 70% of cases well managed through conservative methods alone (Pennock et al., 2018).
Surgical treatment can be highly effective for these conditions when conservative methods fail. This could be explained by evidence that GTPS can be caused by proximal ITB thickening, especially in those who fail conservative treatment (Khoury et al., 2022). There are both open and endoscopic surgical techniques that can be used for this treatment, and minimally invasive endoscopic approaches have proven successful in limiting soft tissue damage and blood loss (Mitchell, et al., 2016). Findings by Lustenberger et al. (2011) have shown that endoscopic surgical treatment improves outcomes more than conservative management for trochanteric bursitis. Regardless of treatment modality, it is important to tailor management by patient, as arthroscopic surgical outcomes have been shown in systematic review to vary greatly by patient (Horner et al., 2017). As predicted by the literature, the hypothesis that endoscopic bursectomy and ITB lengthening will significantly improve pain and function outcome scores for the treatment of ITB syndrome with trochanteric bursitis was confirmed by all pain and function measures being significantly enhanced after surgery. These results demonstrate that endoscopic bursectomy and ITB lengthening significantly reduce pain and improve functional outcomes for patients with GTPS and trochanteric bursitis. Although these results are compelling, all data must be considered within the context of its limitations. First, the primary outcome relies on patient-reported pain and function scores. Self-reported data is inherently subjective, and thus may introduce reporting bias. Additionally, due to feasibility constraints, participants were not matched across conditions, introducing the possibility of confounding variables affecting outcome data. The small sample size, and the use of only one physician's practice in this study may also limit generalizability of the findings to a broader patient population.

SIGNIFICANCE/CLINICAL RELEVANCE: These results suggest that endoscopic surgical bursectomy and ITB lengthening are effective at reducing pain and improving function for patients with chronic GTPS and should be considered for patients who are unresponsive to conservative management.

REFERENCES:

Strauss, Eric, et al. "Iliotibial Band Syndrome: Evaluation and Management." Journal of the American Academy of Orthopedic Surgeons (2011): 728-736.

Pennock, A. T., Bomar, J. D., Johnson, K. P., Randich, K., & Upasani, V. V. (2018). Nonoperative Management of Femoroacetabular Impingement: A Prospective Study. The American journal of sports medicine, 46(14), 3415–3422.

Khoury, A. N., Brooke, K., Helal, A., Bishop, B., Erickson, L., Palmer, I. J., & Martin, H. D. (2018). Proximal iliotibial band thickness as a cause for recalcitrant greater trochanteric pain syndrome. Journal of hip preservation surgery, 5(3), 296–300.

Mitchell, J. J., Chahla, J., Vap, A. R., Menge, T. J., Soares, E., Frank, J. M., Dean, C. S., & Philippon, M. J. (2016). Endoscopic Trochanteric Bursectomy and Iliotibial Band Release for Persistent Trochanteric Bursitis. Arthroscopy techniques, 5(5), e1185–e1189.

Lustenberger, D. P., Ng, V. Y., Best, T. M., & Ellis, T. J. (2011). Efficacy of treatment of trochanteric bursitis: a systematic review. Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine, 21(5), 447–453.

Horner, N. S., Ekhtiari, S., Simunovic, N., Safran, M. R., Philippon, M. J., & Ayeni, O. R. (2017). Hip Arthroscopy in Patients Age 40 or Older: A Systematic Review. Arthroscopy : the journal of arthroscopic & related surgery : official publication of the Arthroscopy Association of North America and the International Arthroscopy Association, 33(2), 464–475.e3.

IMAGES AND TABLES:

Table 1:

	Group 1, n = 17	Group 2, n = 13	P value
Total ADL score, median (IQR)	43.75 (27.94, 60.29)	91.18 (72.06, 95.59)	< 0.001
Current level of function during usual activities, median (IQR)	45.0 (10.0, 50.0)	80.0 (75.0, 95.0)	0.001
Total function score, median (IQR)	34.52 (25.96, 56.77)	90.22 (72.06, 92.31)	0.001
Current level of function during sports, median (IQR)	25.0 (5.0, 50.0)	80.0 (57.5, 97.5)	0.001
Modified Harris hip score, median (IQR)	33.0 (24.0, 51.0)	77.0 (53.0, 85.0)	< 0.001
UCLA activity scale, median (IQR)	3.0 (2.0, 4.0)	6.0 (3.0, 9.0)	0.028

P values were obtained from Wilcoxon rank-sum tests under the assumption that two groups were independent.
IQR: interquartile range