

## Hip Gluteus Medius and Minimus Endoscopic Treatment Results in Patient Satisfaction



---

**Abstract:** Greater trochanteric pain syndrome includes a spectrum of hip pathology, including trochanteric bursitis, gluteus medius or minimus tendinosis, partial abductor tear, full-thickness tear, and full-thickness tear plus retraction (with or without fatty atrophy). Physical diagnosis includes palpation for tenderness at the greater trochanter and evaluation for strength loss, including observation of gait. Women are significantly more likely to have a tear of the hip abductors than men. Endoscopic treatment results in patient satisfaction, improved strength and gait, and few complications. Fatty degeneration of the abductor muscles or associated scoliosis has a negative effect on the outcome of gluteus medius repair.

---

**H**ip arthroscopy (sigh) for those of us who haven't trained or subspecialized in hip arthroscopy, we've tended to avoid it in the clinic and neglect it in the literature, occasionally paying enough attention to grasp the basics of femoroacetabular impingement (FAI) syndrome, including cam and pincher lesions, or labral debridement, reconstruction, or repair. In our clinics, we frequently see patients with trochanteric pain, whom we dutifully inject, but the results seem less successful than when we inject elsewhere. And let's not forget the humble but troublesome loose body, a pathology any arthroscopic surgeon can understand, and which some boldly chase into an otherwise unfamiliar joint.

We who have not trained or subspecialized in hip arthroscopy are thankful for and extremely impressed by those who have. Frankly, we are amazed by the expertise of hip arthroscopy subspecialists, with their ability to perform physical diagnosis; interpret advanced imaging; properly indicate surgery; position their patients; access an anatomically, deeply positioned, and tightly constrained joint; manage traction and fluoroscopy; debride, resect, repair, and reconstruct; navigate in and around the joint, soft tissue, muscles, tendons, ligaments, capsule, and nerves (big and small); and generate arthroscopic and endoscopic images (and outcomes) comparable to the best of us who limit our practices to knee, shoulder, or the smaller and more superficial wrist, elbow, or ankle. Adding to our

admiration, many hip arthroscopy specialists are accomplished arthroplasty surgeons. Finally, dedicated hip arthroscopic and related researchers have created an evidence-based body of literature and rapidly advanced their subspecialty field. In the last decade, hip arthroscopy has had a meteoric rise.<sup>1,2</sup>

This editorial calls to the attention of readers, including those who do and do not actively perform hip arthroscopy, two important articles among the hip papers published in the current issue of the journal.

But just one moment please. Before we indicate another potentially misdirected injection, and before blindly referring our patients to the hip specialist, let's take a step back and try to better understand the basics of hip abductor pain and pathology.

Briefly, greater trochanteric pain syndrome includes a spectrum of pathology, including trochanteric bursitis, tendinosis, partial abductor tear, full-thickness tear, and full-thickness tear plus retraction (with or without fatty atrophy).<sup>3</sup> Physical examination includes palpation for tenderness at the greater trochanteric lateral facet (suggesting gluteus medius pathology) and at the anterior facet (suggesting pathology of the gluteus minimus). Strength loss is consistent with either partial or complete gluteus medius and minimus tendinopathy. The gluteus medius strength test is best performed with knee flexion in the lateral decubitus position so as to release the gluteus maximus and iliotibial band. Next, overall abductor strength is evaluated with the knee in extension.<sup>4</sup> Observation of gait is additionally requisite, and a Trendelenburg gait can be telling, in which case radiographs and advanced imaging can distinguish osteoarthritis, bursitis, tendinosis, or a tear. Women are significantly more likely to have a tear of the hip abductors than men.<sup>5</sup>

Repair of hip abductor tears has been investigated in the biomechanics lab. Compared with single-row repair, double-row repair results in superior footprint restoration of the gluteus medius attachment at the lateral greater trochanteric facet.<sup>6</sup> Clinically, in a series reporting minimum 2-year outcomes of trans-tendinous repair of partial-thickness undersurface tears of the abductor tendons in 25 patients, substantial clinical benefit was shown: of 14 patients with a Trendelenburg gait, 12 had a normal gait at final follow-up.<sup>7</sup> A prospective case series including 15 hips having isolated endoscopic repair of full-thickness hip abductor tears with a minimum 2-year follow-up resulted in 100% patient satisfaction.<sup>8</sup> Fatty degeneration of the abductor muscles<sup>9</sup> or associated scoliosis<sup>10</sup> has a negative effect on the outcome of gluteus medius repair.

Thus informed (and we editors certainly learned a great deal writing this concise review), we now call your attention to 2 articles this month: “Clinical Outcomes After Endoscopic Repair of Gluteus Medius Tendon Tear Using a Knotless Technique With a 2-Year Minimum Follow-Up” by Kirby, Fried, Bloom, Buchalter, and Youm,<sup>11</sup> and “Mid-Term Outcomes of Endoscopic Gluteus Medius Repair With Concomitant Arthroscopic Labral Treatment: A Propensity-Matched Controlled Study” by Meghpara, Yelton, Annin, Shapira, Rosinsky, Maldonado, Lall, and Domb.<sup>12</sup> What do these well-performed studies show? We’ll wrap up this editorial, so you can get to reading.

In 2015, Dr. Lubowitz commented, admittedly naively, on “Rotator Cuff Tears of the Hip.”<sup>13</sup> In 2020, we’ve come a long way in our understanding, and clearly, hip abductor tears require no analogy to the shoulder to be appreciated. Although some of you, and we ourselves, may still be less expert regarding greater trochanteric pain syndrome than our expert, hip arthroscopy authors, careful reading has provided us with a better understanding of gluteus medius and minimus pathology, diagnosis, and treatment.

James H. Lubowitz, M.D.  
*Editor-in-Chief*

Jefferson C. Brand, M.D.  
*Assistant Editor-in-Chief*

Michael J. Rossi, M.D., M.S.  
*Assistant Editor-in-Chief*

## References

1. Zhang AL, Feeley BT. The rise of hip arthroscopy: Temporary trend or here to stay? *Arthroscopy* 2018;34:1831-1832.
2. Bonazza NA, Homcha B, Liu G, Leslie DL, Dhawan A. Surgical trends in arthroscopic hip surgery using a large national database. *Arthroscopy* 2018;34:1825-1830.
3. Lall AC, Schwarzman GR, Battaglia MR, Chen SL, Maldonado DR, Domb BG. Greater trochanteric pain syndrome: An intraoperative endoscopic classification system with pearls to surgical techniques and rehabilitation protocols. *Arthrosc Tech* 2019;8:e889-e903.
4. Martin HD. Pioneering the gluteal interval: Understanding and treating undersurface and full-thickness gluteus medius tears of the hip. *Arthroscopy* 2017;33:2168-2169.
5. Alpaugh K, Chillelli BJ, Xu S, Martin SD. Outcomes after primary open or endoscopic abductor tendon repair in the hip: A systematic review of the literature. *Arthroscopy* 2015;31:530-540.
6. Kahlenberg CA, Nwachukwu BU, Jahandar H, Meyers KN, Ranawat Amar S, Ranawat Anil S. Single- versus double-row repair of hip abductor tears: A biomechanical matched cadaver study. *Arthroscopy* 2019;35:818-823.
7. Hartigan DE, Perets I, Ho SW, Walsh JP, Yuen LC, Domb BG. Partial-thickness undersurface tears of the abductor tendon: Clinical outcomes with minimum 2-year follow-up. *Arthroscopy* 2018;34:1193-1199.
8. Nazal MR, Abraham PF, Conaway WK, Quinlan NJ, Gillinov SM, Gibbs JS, Upadhyaya S, Alpaugh K, Martin SD. Endoscopic repair of full-thickness gluteus medius and minimus tears—Prospective study with a minimum 2-year follow-up. *Arthroscopy* 2020;36:2160-2169.
9. Thauinat M, Clowez G, Desseaux A, Murphy CG, Sbiyaa M, Noël E, Sonnery-Cottet B. Influence of muscle fatty degeneration on functional outcomes after endoscopic gluteus medius repair. *Arthroscopy* 2018;34:1816-1824.
10. Saltzman BM, Louie PK, Clapp IM, Beck EC, Neal WH, Ukwuani GC, Nho SJ. Assessment of association between spino-pelvic parameters and outcomes following gluteus medius repair. *Arthroscopy* 2019;35:1092-1098.
11. Kirby D, Fried JW, Bloom DA, Buchalter D, Youm T. Clinical outcomes after endoscopic repair of gluteus medius tendon tear using a knotless technique with a 2-year minimum follow-up. *Arthroscopy* 2020;36:2849-2855.
12. Meghpara MB, Yelton MJ, Annin A, Shapira J, Rosinsky PJ, Maldonado DR, Lall AC, Domb BG. Mid-term outcomes of endoscopic gluteus medius repair with concomitant arthroscopic labral treatment: A propensity-matched controlled study. *Arthroscopy* 2020;36:2856-2865.
13. Lubowitz JH. Rotator cuff tears of the hip. *Arthroscopy* 2015;31:2068.