



Arthroscopic Release in the Treatment of Deep Gluteal Nerve Syndrome and Piriformis Syndrome



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Abstract

The aim of this study was to evaluate the outcomes of Arthroscopic release of piriformis to treatment of Deep Gluteal Nerve syndrome (DGNS) and piriformis syndrome. DGNS painful sitting with or without radiculopathy. 19 patient applied our clinic 2014-2022 and that underwent Endoscopic Piriformis release and sciatic nerve decompression.

All patients was evaluated Radiologic of the series X-ray and MRI neuroconductive studies EMG and SSEP. Clinical outcomes of patients the preoperative and postoperative documentations were analyzed. Regarding clinical outcomes, were significantly improved. Arthroscopic piriformis release provides a safe and effective treatment for deep gluteal syndrome.

Keywords: Hip Arthroscopy; Deep Gluteal Syndrome; Piriformis Endoscopic Release

Introduction

Piriformis syndrome is the most common type of deep gluteal syndrome. It is characterized by numbness and pain radiating from the gluteal region to the leg [1-3].

Metropolitan lifestyles increasing sitting habits, extremely intense sports activities, frequent and repeated social and sportive activities, incentives for new experiences can create eccentric loads in the external rotator and obturator muscle region, which is risky of strain in the hip region. Like the piriformis, unexpected stretches and strains in the genellius superior, obturator internus muscles, healing tissue and fibrosis, which develop differently depending on the degree of injury, cause nerve entrapments [4,5].

Sciatica or pudendal entrapments, characterized by nondiscogenic pelvic pain, are developing under the title of "deep gluteal nerve syndrome = DGNS". Piriformis syndrome is a one of the deep gluteal syndrome disorders that increases with sitting right after the obturator outlet where the sciatic nerve is trapped and should be differentiated from typical sciatic pain and discogenic pain causes [6]. The biggest challenge in the diagnosis of Piriformis syndrome is that it presents findings that are confused with discogenic pain. Although MRI techniques

have been developed in non-discogenic pain, the absence of pathological signal in the muscle region in the chronic stage reveals the importance of examination in the diagnosis. In physical examination, provocative tests (fair, ober, faber, etc.) [7,8].

Fair test (in a side-lying patient, it is pathognomonic as it causes local pain by trapping the sciatic nerve at the fibrotic piriformis dislocation when the hip is passively brought to 90 degrees while adduction and internal rotation is forced. A reproduction of the patient's local buttock pain is a positive test for piriformis involvement. A fair test must be repeated dynamically during the EMG test and electrophysiological findings should be recorded.

Endoscopic decompression is preferred in patients who are permanent, decrease a lot with rest, start immediately with light activity, have not benefited from conservative treatment or relapsed in a short time after treatment. A head of time, we were performing sciatic decompression by cutting the piriformis muscle using open or miniopen endoscopic techniques. As our experience in hip arthroscopy increased, we preferred separating the piriformis muscle from the musculotendinous junction due to its low mortality and patient comfort [7-17].

Materials and Methods

Early surgical results of 19 patients you have treated with hip arthroscopy in our clinic in the last seven years; We evaluated the functional results of 19 patients, 7 male and 12 female, who were treated by the same single surgeon between 2014 and 2022, mean age 46: mean follow-up time: 11 months (6-18 months)

All patients were evaluated preoperatively and postoperatively by radiological MRI and electrophysiological reassessment at 6 weeks and 6 months.

Arthroscopic piriformis release was performed via posterior proximal portal and accessory proximal portal lateral decubitus position or prone position. After cleaning the bursa around the K wire, which is placed under the scope of the 30-degree arthroscope from the proximal portal to the fossa piriformis, the piriformis tendon is separated from insertion which is near the gluteus medius neighborhood with a total tenotomy. Subsequently, adhesions are removed by following up to the piriformis obturator foramen. The sciatic nerve is exposed and neurolysis is performed distally to ensure that there is no pressure up to the quadratus level.

Results

18 patients' single side one patient bilaterally was achieved Arthroscopic piriformis complete tenotomy. The tendon adhesion of the capsule was released in all cases. No injuries to the sciatic nerve or inferior gluteal artery occurred. All patients were mobilized at the third hour postoperatively. Stretching exercises were applied to all patients for 3 weeks and heavy exercises were avoided. After six weeks, sports activities were allowed. Vitamin B1 supplementation was given for six months [18].

Discussion

Piriformis syndrome is diagnosed after the misdiagnosis of discopathy or spinal disorders and treatment of pelvic sacroiliac disorders due to difficulty sitting and coccydynia, which often progress with radiculopathy. Vallerian degeneration healing pain caused by delayed entrapment neuropathy may be a problem after these patients who have received dozens of treatments have benefited from best endoscopic treatment.

Piriformis syndrome is an important differential diagnosis for Clinicians which consider medical management and conservative management in the initial treatment plan for piriformis syndrome. Patients exhausted to been received many options within the conservative management much promise regarding such as physical therapy, steroid injections, botulinum toxin injections, and dry needling are all potentially effective therapies with few adverse effects [19,20].

Arthroscopic piriformis tenotomy would be as gold standard,

when conservative management has failed, and the symptoms are significant to affect daily living activities. Endoscopic decompression of the sciatic nerve with release of the piriformis tenotomy highest success and a low complication rate. Current literature shows that the endoscopic way over the open approach is due to improved outcomes and decreased complications.

Conclusion

Releasing the sciatic decompression from the piriformis thoracanthic attachment is an effective and safe method in piriformis syndrome. It has been reported that the risk of neurovascular injury is high due to different variations in the open or endoscopic methods that we loosen except for the tendinosis region of the piriformis.

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