

EFFECTS OF GRASTON TECHNIQUE ON ILIOTIBIAL BAND SYNDROME

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ABSTRACT

Objective: To determine the effects of Graston Technique on Iliotibial Band Syndrome.

Design: Two student researchers certified in Graston Technique examined the participants in the Graston study. The study was a randomized clinical trial with two separate treatments over a one-week period. Participants were divided into an experimental group treated for Iliotibial Band Syndrome(ITBS), and a control group treated with a sham treatment.

Setting: All research was done in the Research Department of the Science Building at Logan College of Chiropractic (Chesterfield, MO).

Subjects: Fourteen students of Logan College of Chiropractic were chosen after satisfying the criteria of between the ages of 18-40, history of physical activity, and a positive Ober's test.

Interventions: Two Graston Technique(GT) treatments on the Iliotibial Band(ITB) or a control sham treatment for two minutes over a one-week period.

Outcome Measures: All participants were screened using Ober's orthopedic test, which demonstrates Iliotibial Band tightness, and palpation of the ITB. The participants were asked to write down what activities they did on a regular basis. They were asked whether or not they had pain or tightness to the lateral thigh or knee and also to verbally rate this pain or tightness on a 0-10 VAS scale. The VAS scale measures symptoms as 0 being no pain or symptoms at all and 10 being the worst symptoms ever experienced. Ober's test, palpation, and the VAS scale were performed pre and post treatment.

Results: All persons that received Graston Technique for Iliotibial Band Syndrome demonstrated pain relief following each of the two treatments. All participants' subjective pain number was lowered post treatment. Five of the seven persons treated with GT had a negative Ober's Test following treatment as well as a 0/10 on the VAS scale. The participants receiving the sham treatment demonstrated little to no pain relief on the VAS scale and none had a negative Ober's test following treatment.

Conclusion: Graston Technique on Iliotibial Band Syndrome resulted in a decrease in subjective symptoms and an improvement in muscle function.

INTRODUCTION

The iliotibial band (ITB), also referred to as iliotibial tract, Maissiat's band, or simply the IT Band, is a fibrous continuance of the Tensor Fascia Lata muscle that runs longitudinal down the lateral aspect of the thigh. The iliotibial band originates on the anterolateral iliac crest and inserts on the lateral condyle of the tibia. The actions of the ITB include flexing, abducting and medially rotating the hip. The ITB also functions to stabilize the lateral knee during both flexion and extension, especially during activity. Iliotibial Band Syndrome occurs when the ITB becomes hypertensive and causes excessive friction between the ITB and the lateral knee. ITBS is referred to as an overuse injury. Pain can occur anywhere along the ITB, but most often occurs at the knee around where the ITB inserts on the tibia. Pain can occur during the activity, after the activity is over, or both. Some common causes of ITBS are running consistently on a banked surface, uneven leg length, supination of the foot, over-pronation of the foot, or weak hip abductor muscles. Conservative treatments for ITBS include rest, ice, compression, elevation, therapeutic ultrasound, electrical stimulation, orthotics, McConnell's Taping, or IT band compression wrap. NSAID's, steroid injections and surgery to mobilize the ITB are reserved in the case that conservative has failed. Graston Technique therapy uses several different stainless steel instruments to help locate and identify fibrous adhesions and fascial restrictions. Once the fibrous adhesions are identified with the stainless steel instruments, the necessary tissues are then treated using Graston Technique.

METHODS AND MATERIALS

Ober's orthopedic test was an inclusion criterion for all participants in this study, whether they were in the treatment group or the sham group. Ober's test is an orthopedic test to determine the hypertonicity of the ITB. The participants lie on the contra lateral side of complaint while the doctor takes the thigh and leg, just below the knee, into flexion. The thigh and knee are then extended simultaneously to determine ITB tightness. In a negative test, the knee is allowed into adduction. In a positive test, the knee will not adduct due to the tight ITB.

The Graston Technique tools used in this study were the GT1 and GT3 instruments. In addition, the Graston emollient was used to lubricate the treatment area. GT therapy was used in this study to splay and stretch connective tissue and muscle fibers and stimulate fibroblast activity in the treatment area. The GT1 instrument was used to scan for fibrous adhesions and treat these adhesions concentrating on the entire length of the ITB. The GT3 was used to treat adhesions focusing more on the insertion of the ITB on the lateral tibial condyle. Several strokes using the instruments were performed including the sweep, fan, brush and scoop strokes. The subjects that received the sham treatment were treated with GT of the poster lateral thigh.

RESULTS

Fourteen subjects participated in the Graston Technique study, 7 receiving treatment of the ITB and 7 being part of the sham treatment group. All of the participants that were treated with GT stated having less pain and tightness following the treatments. After each treatment, all subjects VAS pain scale was decreased from pre-treatment. Also, five of the seven persons treated with GT went from a positive Ober's Test pre-treatment to a negative Ober's Test post-treatment. The participants treated with the sham treatment had little to none decrease in their VAS pain scale following treatment. All seven persons treated with the sham treatment still had a positive Ober's Test following treatment.

DISCUSSION

The research study was designed to determine what effects, if any, Graston Technique had on Iliotibial Band Syndrome. This was a randomized controlled study, which separated the participants into two groups, a treatment group and a control group. The purpose of this study was to decrease the symptoms of ITBS, including pain, range of motion and flexibility in all of the participants. The GT used in this study may decrease tightness, tenderness and trigger points that are found in the ITB offering symptom relief to the participants.

The treatment group was treated with GT over the ITB where the researchers discovered adhesions or trigger points. The results of the VAS scale and the Ober's test were recorded before and after treatment. The GT would be considered effective if the VAS scale was lowered, the Ober's test went from positive to negative or both. The sham group was treated with GT over the poster lateral thigh. The participants were not aware that they were part of the sham treatment group but could have obtained relief from symptoms due to tightness or trigger points in the hamstrings. The sham group should not have any change of a positive Ober's test after their treatment. Both groups were treated twice over a one-week period. Any participant that received a GT treatment between the study treatments or miss a study treatment would be excluded from the study. In addition, any participant to present with a contraindication to GT in between study treatments would also be excluded.

All participants were released following the second treatment of this study. Throughout the duration of the study, all pre and post treatment results were recorded to ensure progress or recession of the participants. All recorded information and results were analyzed after the completion of the study to determine the effects of GT on ITBS.

CONCLUSION

This research project was designed to demonstrate the possible effects of Graston Technique on Iliotibial band syndrome. The researchers feel that the study was a success due to the continual decrease of pain and symptoms in the participants that were treated with Graston Technique compared to the control group. All of the participants involved in the research study initially showed a positive Ober's test, and the subjects in the experimental group all had a decrease in pain and symptoms and many of them had a demonstrated a negative Ober's Test after being treated. In conclusion, the Iliotibial band tightness of the subjects in the experimental group were much less tight after treatment when compared to the control group. The researchers feel that further research involving additional subjects and numerous treatments over a longer duration is necessary to truly evaluate the effect of Graston Therapy on Iliotibial Band syndrome.

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