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Effect of a physical rehabilitation program with therapeutic massage for men with piriforms muscle syndrome (40 - 50)

Hossam Darwish Ahmed [1]

ABSTRACT

Background: Piriforms syndrome is a neuromuscular condition characterized by hip and buttock pain. This syndrome is often overlooked in clinical settings because its presentation may be similar to that of lumbar radiculopathy, primary sacral dysfunction, or innominate dysfunction. The ability to recognize piriforms syndrome requires an understanding of the structure and function of the piriforms muscle and its relationship to the sciatic nerve.

Methods two experimental groups of (5) cases suffering from pain of the musculoskeletal syndrome and they were rehabilitated until the dynamic range was restored and the angle of the hip rotation was restored to the inside and outside and improved step, balance and muscular compatibility in a short period

RESULTS: The chief investigator demonstrated excellent effect on the measurements. Restoring elasticity, improving the motor range and restoring the angle of hip rotation inside and outside, patient's return to normal condition rapidly.

Conclusions: results confirm that subjective assessment, restoring the thigh angle and , rotation of the inside and outside angle, restoring motor range, , restoring flexibility of piriformis muscle.

Keywords: piriforms , syndrome sciatica, diagnoses. Rehabilitation.

Introduction:

[1] Point of researcher: Helwan University- Faculty of physical Education for Boyes in Cairo – sports hygiene Department of Health

Lori et all 2008 asserts that Piriformis syndrome is a neuromuscular condition characterized by hip and buttock pain. This syndrome is often overlooked in clinical settings because its presentation may be similar to that of lumbar radiculopathy, primary sacral dysfunction, or innominate dysfunction. The ability to recognize piriformis syndrome requires an understanding of the structure and function of the piriformis muscle and its relationship to the sciatic nerve. (23)

Symptoms of piriformis syndrome. Symptoms appears in patients with piriformis syndrome(PS) is increased pain after sitting for longer than (15 to 20) minutes. Many patients complain of the pain of the piriformis muscle(PS) (ie in the buttocks), especially on the muscle attachments in the disability and middle and large round. Symptoms that may be from sudden onset or gradual, usually associated with muscle spasm or sciatic nerve compression. Moreover, causing severe pain and difficulty in walking and movement.

Mohammed Qadri Bakri and Siham Al-Ghamri pointed out that the implementation of motor, sports therapy is accompanied by the activation of the circulatory system that helps in its activity to deliver oxygen, and the elements of the multi-food to muscle tissue, especially those who need to rebuild to repair the injuried tissue. (9: 18)

Atef Morsi also points out that exercise and sports medicine are considered the most

MATERIALS AND METHODS

Subjects

This study was approved by a Research Ethics Subcommittee at sport medicine and rehabilitation center

for male volunteers aged 40 to 50 years of age fulfilled the

inclusion criteria. Exclusion criteria were any indication of chronic injury , subject to other treatment, been treated surgically in the spine.

On completion of the first sitting measurements, subjects were asked to seet the injuried leg other knee with holding it move trunk forward

Attachments and course

This is a flat pyramid-shaped muscle that arises from the anterior surface of the sacrum, between the sacral foramina. It passes laterally to exit the bony pelvis through the greater sciatic foramen. It inserts onto the greater trochanter, posterosuperior to the insertion site of the conjoined tendon of gemellus superior, obturator internus and gemellus inferior.

The muscle divides the greater sciatic foramen into two foramina (suprapiriform and infrapiriform). The superior gluteal artery and nerve (L4-S1) leave the pelvis through the suprapiriform foramen. The sciatic nerve, inferior gluteal nerve (L5-S2) and artery, posterior femoral cutaneous nerve (S1-S3) and the nerve to quadratus femoris (L4-S1)

important stages of treatment. It is possible for exercise and physical medicine to kill the pain and strengthen the back muscles surrounding the bones of the dorsal vertebrae. As one study) Prior to measuring : Visual Analogous Scale (v.a.s) participants were asked sit on chair for measurement( )

Measuring the angle of rotation of the thigh internal and external) Measure the Range of Motion at the hip by Goniometer.

to ensure sitting position of subject between measures) and adopt a comfortable sitting position that felt natural to hem On completion of the measurements, subjects were asked to put the the injured leg on the other leg and flex trunk forward

Internal External rotation

And use ginometer

Measure the HIP Range of Motion at the	
Hip angle	**Measurement position**

leave the pelvis through the infrapiriform foramen. The pudendal nerve (S2-4) also leaves the pelvis through the infrapiriform foramen, wraps around the sacrospinous ligament, and re-enters the pelvis by passing back into the lesser sciatic foramen. After re-entering the pelvis, it is joined by the internal pudendal artery and vein. The gluteus medius and minimus are medial rotators, and hence oppose the action of the lateral rotators**.**

Innervation

The nerve supply to piriformis is from a specific nerve of the lumbosacral plexus (nerve to piriformis, L5-S2).

Blood supply

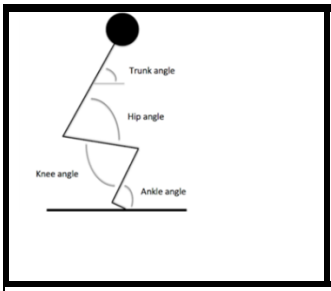
The arterial supply is from the inferior gluteal, superior gluteal and internal pudendal arteries, all branches of the internal iliac artery.

Clinical Points of Piriformis syndrome

This is a syndrome that occurs when the sciatic nerve is compressed or irritated (i.e. a sciatica) by the piriformis muscle. This condition is more likely to occur in individuals with anatomical variations of the sciatic nerve and piriformis. Other causes of sciatica include a herniated disc between L5 and S1. This can be diagnosed by a MRI scan, and treated with surgery**.**

The symptoms of piriformis syndrome include:

Buttock pain



Worsening of pain during sitting and when performing movements, which increase tension in the piriforms, muscle (Flexion/Adduction/Internal Rotation of the hip).

Variant anatomy

There is variation in the location of the insertion footprint of piriformis on the greater trochanter of the femur. The relationship between piriformis and the sciatic nerve can also vary. In the vast majority of individuals, the sciatic nerve leaves the bony pelvis via the greater sciatic foramen, below piriformis and divides into tibial nerve and common peroneal nerve distally to piriformis. In some people, the nerve divides proximally. Examples of variations include a bifid sciatic nerve passing inferior to a hypertrophied piriformis, or a common peroneal nerve passing between the two bellies of a bifid piriformis, the tibial nerve passing inferior to piriformis. Both the tibial and common peroneal nerves can also pass through or superior to piriformis**.**

Tenderness over the greater sciatic notch

Table 1. Subject Demographics

The interval between appointments was one hour

Variables	**Subjects (n=8)**
Age (years)	45.25
Body height (cm)	178.8
Body weight (cm)	86.8

A total of 8 asymptomatic subjects MALE were recruited for this study. Subject demographic data is presented

Sample Size Estimation

Sample was selected in15/10/2015 to 25/5/2016 in a deliberate manner by the patients at the Rehabilitation Center and the Center for sport y Medicine were injured with sciatica without a cartilage slip at age (40 to 50) of the non-athletes. The injury was recent, never before, Groups as follows.

The first group (4) injured patient these group performs a physical therapy and deep massage. The second group (4) patient patient injured and treated with program of physical and electrical therapy.

Procedure

All testing was conducted in the same room at center rehabilitation by Those individuals who agreed to participate and met the inclusion criteria and did not fulfil

the exclusion criteria were invited to attend in two appointments, approximately one hour apart. On the first appointment subjects were given a full explanation of the test procedure, a warned of any potential risk factors and asked to sign informed consent documentation by the second investigator. weight, height and age were recorded.

asking each subject when the pain occurs and at which degree of range of motion contralateral knee was stabilized by examiners an attempt to reduce movement

Three ginometer readings, determined when the subject reported the range of motion and pain degree.

All angles were recorded after the first measurement session

Each examiners take the session individually interval between appointments was one hour

A total of 8 asymptomatic subjects male were recruited for this study.

Sample Size Estimation

Sample size was selected in15/10/2015 to 25/5/2016 in a case control observation double blind study of (4) case study by the patients at the Rehabilitation Center for sport medicine

were injured with sciatica without a cartilage slip at age (40 to 50) of the non-athletes Obtained from attendee of experimental between in15/10/2015 to 25/5/2016 all patient complained of sciatica . The injury was recent, never before, Groups as follows. And control group (4) injured patient these group performs a physical therapy and deep massage. The second group (4) patient injured and treated with program of physical and electrical therapy.		

RESULTS

Table (2)

program	Variables	Pre			Intermediate			post		
		mean	SD	coefficient	mean	SD	coefficient	mean	SD	coefficient
Physical	R o m	48.	5.62	33.1	-21.	4.17	44.3	-99.	4.26	85.62
	Rotate inside	-.55	7.92	35.6	0.01-	6.5	33	0.01	7.26	29.25
	Rotate out	31.0	3.74	37.66	35.	1.66	33.25	0.23	4.35	28.1
	Degree of pain	48.	26.	2.3	21.-	83.	3.1	-99.	75.	10
Electricity	R o m	-48.	2.6	42.5	-88.	99.	46.2	-48.	4.17	86.25
	Rotate inside	-01.	5.71	33.12	4.	6.10	29.1	42.	6.30	25
	Rotate out	-10.	2.81	34.7	4.	2.41	30.12	50.	2.56	25
	Degree of pain	-.48	.51	3.6	1.38	51	6.6	1.38	51	10

mean, standard deviation and coefficient of the two programs (n = 8)

The mean values responses differed on the variables in both the (physical / electrical) program in all the measurements. coefficient limited (± 3), indicating the data moderation

Table (3)

Percentage of improvement in all measurements for each group separately(n) = 8

Program	Variables	Post / pre (%)	Post / pre (%)	Post / pre (%)
physically	**rom**	53	25	65
	Enternal (rotation	13.5	16.3	33.4
	External rotation	12.8	35.4	26.4
	Pain	67.3	25	75
electricty	**rom**	46.3	8.1	50
	Enternal(rotation)	11.4	15.2	21.5
	External rotation	5.8	13.8	20.4
	Pain	31.2	45	62.5

The rates of improvement in each group varied on the variables under study, with the highest rates of improvement in all measurements for all variables in the program.

DISCUSSION

The primary focus of this study was to evaluate the reliability of clinical methodology for measuring the range of motion , **Enternal, external (rotation**) and pain degree . Analysis of the results obtained in this study suggest that the technique employed by the chief investigator demonstrated reliability acceptable for clinical application Based on the results of the statistical results and within the measurements that were made, and within the framework of the sample of the research, will discuss the extent of achievement of the objectives and the validity of hypotheses. The purpose of the study was to identify the

the impact of the use of the program Physical therapy and electrotherapy on the visual analouge scale and the angle of rotation of the thigh inside and outside

The results of the study indicate the variance of the mean. The sample response in the motor range between the two programs was the mean of the dynamic range of the physical program (85,62) and the electric program (86,62) indicating the moderation of the data and its development in the physical program for the electric program) (1)

This is consistent with a study conducted by Mohamed Hussein Mohamed Saad, which aimed to study the effect of the suggested program of electrical stimulation and

effect of the difference between the electrical program and the physical program on motor muscle syndrome And according to the results of this study, which included arithmetic mean, standard deviation, and torsion coefficient.

As well as the difference between the two groups of research in the pre measurement and telemetry, as well as the analysis of the variance of the variables of the study of the physical program and then the significance of the differences between the measurements of the electrical and physical program and then determine the rate of improvement in all measurements for each group separately and hypotheses, there are no statistical hypotheses for The results of the study indicate that the mean value of the sample response between the two programs in the femoral angle for the inside and outside was different in the physical program .(29)(25) (27) (19) (5)
(35.6) and electrical program (25) and developed to (33.12) and was developed in favor of physical program. This achieves the third hypothesis and the third goal .

The results of the study also indicate that the mean value of the sample response between the two programs in (hip rotation abroad) where it was in the physical program (12,828) and developed until. (37.66)
And the electric program (25) and developed to (34.7) and was development in favor of the physical program and this is consistent with David 2016 and also agrees with Yurtani 2012 and Hinsow 2009. This is what fulfills the fourth hypothesis and the fourth goal.
The results in the differences between the two groups in the pre measurement indicated that there were no statistically significant differences between the two groups in the pre measurement. The average of the physical program in the motor range (5.6) and the mean of the electrical program (5.40)) And the electrical program (5.5) as measured in the outside of the thigh (5.5) for the physical program and (5.5) for the electrical program.
The visual analouge scale of pain intensity was (5.5) for physical program and (5.5) for electrical program.

therapeutic exercises on the decline and disappearance of inflamation and also agree with Hajar Nazih and also agrees with Durrani 1991 and also agrees with Indrekvam (2001))
And Lori A. Boyajian (2008). This achieves the first hypothesis and achieves the first goal. (7)

Also in the physical program, the pain scale (9.25) was developed up to (322) degrees while in the electric program (8.95) and evolved to (3.6) where the values varied between the two programs in pain measurement (1) Achieving the second hypothesis and achieving the second goal. (10)
indicate that there are statistically significant differences in the pre measurement and the intermediate measurement in favor of the intermediate measurement in all the variables. There were also statistically significant differences between the intermediate and the distance for the benefit of the post measurement in all the variables of the study. The differences were between the physical measurement of the kinetic range of the pre measurement (86.25), the internal measurement (45.25) and the dimension measurement (42.5) while the degree of pain for the measurement of pre (9.6) and the intermediate measurement (7) and post measurement. (4)

The differences between the measurement of the kinetic range in all the variables of the study were (85) for the pre measurement and (44.3) for the intermediate measurement and (33.1) for the post measurement while the rotation of the thigh to the inside in the pre (28.15) while in physical (3.25) 37.6). In the measurement of the hip rotation outside, it was in the pre measurement (29.25), in the intermediate measurement (33), in the distance measurement (35.6), and in the
this condition is necessary for optimal patient care. Additional research is needed for patients with piriformis syndrome
and should give therapists confidence when using this method of measurement to help guide treatment progression
The findings of this study compare favorably with

The results in the differences between the two groups in the pre measurement
study. While the measurements of the physical program were less than the electrical program as follows, where the parameters of the pre and post measurement of the physical movement of the physical program were (46.3, 8.1, 50).)
The parameters of the pre and post measurements of the inward rotation of the electrical program (5.8, 13.8, 20.4).
Where the parameters of the pre and remote measurement of the rotation of the thigh to the inside of the program (11.4, 15.2, 21.5).)
Where the parameters of the pre and remote measurement of the pain scale of the electrical program (31.2, 45, 62.5).
Where the highest rates of improvement in all measurements for all variables in the physical program Table (7).

CONCLUSION

The methods employed in this study have demonstrated Excellent clinical reliability in measurement to measure angle of hip, eternal eternal rotation and pain degree
Advantages associated with this reliable method of measurement are that it is simple to use, time efficient, and relatively inexpensive to maintain. These positive characteristics lend further support to the use of this instrument within clinical practice,
There are many gaps in knowledge regarding piriformis syndrome. An increase in the breadth and depth of our understanding of
as a better way to return the patient to normal life.
5- Interest in the continuation of the exercise of the appropriate sports activity for the suitable stage.

previous studies, especially as this was one of the first investigations to utilize both a large

measurement of the degree of pain was in the pre measurement (9.5) It was in the post measurement (2.3) .
The results of the variance analysis of the study variables showed that there are no statistically significant differences between the measurements of the physical program in the measurement of the motor range and the degree of pain, while there are statistically significant differences in the other variables of the

Recommendations

1-It is necessary to pay attention to the treatment of injuries after the onset of pain and after careful diagnosis to rapid treatment and rehabilitation and avoid the occurrence of complications
2-Attention to follow the proposed physical rehabilitation program when the treatment procedures before the development of the situation negatively
3-interest in strengthening the muscles of the front and back thigh and increase the dynamic range to maintain the safety of the injured person
4-Attention to the implementation of the proposed physical rehabilitation program

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