

Prevalence of piriformis syndrome among university of Lahore male students

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Objective: To find the prevalence of piriformis syndrome among students of University of Lahore.

Methodology: This cross sectional study was conducted in male students of university of Lahore from May 30 to August 30, 2016. Data were collected from 113 randomly selected male students after taking informed consent. A detailed Questionnaire was used to collect information. SPSS version 21.0 was used to analyze the variables.

Results: Out of 113 students, 73(65%) revealed no pain while the 34(30%) had pain. A 5%

prevalence of radiating pain was found. These students had radiating pain in leg along with buttock numbness and pain. These students were not having any medical intervention.

Conclusion: The result showed 5% prevalence of piriformis syndrome in male students of University of Lahore. There was a relationship with long sitting and weak muscles among students and poor body mechanics lead to piriformis syndrome. (Rawal Med J 201;43:306-308).

Keywords: Muscle syndrome, Piriformis, Piriformis syndrome, Pseudo sciatica, Wallet sciatica, Deep gluteal syndrome.

INTRODUCTION

Piriformis syndrome (PS) is neuromuscular disorder causing irritation of sciatic nerve by abnormal piriformis muscle. PS is mostly misdiagnosed or undiagnosed at clinical setting, as it gives symptoms similar to intervertebral disc herniation, lumbar radiculopathy, sacroiliac joint dysfunction and sacrolitis.¹ Occasionally, it is over diagnosed,² or under diagnosed.³ It is an estimation that in 6% patients with low back pain also have PS.^{4,5} In a survey conducted on the general population, 12.2-27% included a lifetime occurrence of PS, while 2.2-19.5% showed an annual occurrence.⁶

Piriformis syndrome is more common in women with a ratio of 3 to 1 and most likely due to the wider quadriceps femoris muscle angle in the OS Coxae. Orthopedic manipulative therapy is effective in PS along with pharmacological treatment.⁷ Prevalence of PS with piercing of sciatica nerve is 17% and with piercing of common peroneal nerve is 81%⁸ and 17.2% of lower back pain patients developed PS.⁹ Piriformis syndrome, a neuromuscular disorder, is also called wallet sciatica or fat wallet syndrome. It

is due to sciatic nerve compression or due to irritation of piriformis muscle, which causes pain and numbness and tingling sensation in the buttock area and along the sciatic nerve pathway up to leg.¹⁰ Piriformis abducts the thigh in flexion of hip position, which is helpful in walking, because it shifts body weight to other side and prevent falling and lateral rotator also opposes the medial rotators action.¹¹ The pain can be relieved by pointing foot outward walk, as this position externally rotate the hip and relax the stretched piriformis muscle. This pain may be worse by putting wallet at affected side rear pocket, hence making it popular as wallet sciatica.¹²

In Lasegue sign, pain is felt on localized area of piriformis muscle area during hip and knee flexion to 90 degree and then extend the knee by keeping hip flex.¹³

Fishman et al applied FAIR (flexion adduction and internal rotation) in recumbent position with position side up, flexing the hip to 60 degree and knee to 90 degree and applying downward force while internally rotating the limb.¹⁴ FAIR test result is positive for sciatica like symptoms.¹⁵ The aim of

this study was to determine the prevalence of PS among students of University of Lahore.

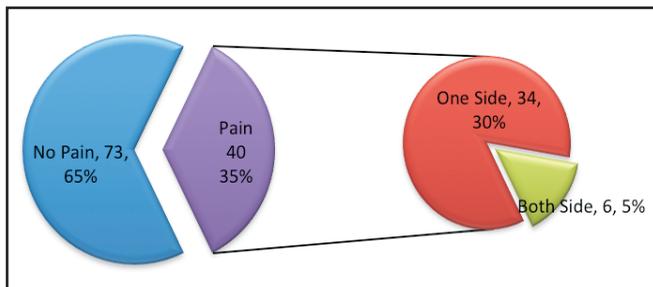
METHODOLOGY

This cross sectional study was conducted in male students in university of Lahore from May 30 to August 30,2016. Data were collected from 113 randomly selected students after taking informed consent. Modified Questionnaire was used to collect data. Inclusion criterion was male students having buttock pain at present time. Students associated with other morbidities, trauma causing buttock pain, patients with tumors and any recent surgery were excluded from the study. SPSS version 21.0 was used to analyze the data.

RESULTS

Out of 113 male students, only 40(35.4%) claimed to have buttock pain. Mean age was 22.75 ± 2.97 years. Among students with buttock pain, 34(30.09%) have localized, while 6(5.31%) have radiating pain. 6(15%) participants had both side pain while 34(85%) had one side buttock pain (Fig.).

Fig. Buttock pain according to pain side.



Pain aggravating factors were long sitting 30(75%), long standing 6(15%) and rest 4(10%). whereas Pain relieving factors were rest 19(47.50%), massage 10(25%), walk 8(20%) and applying heat 3(7.50%) (Fig. 2).

40 students had buttock pain out of which 33(82.5%) used to keep wallet in back pocket while 7(17.5%) students did not put wallet in back pocket. In relation of wallet use and long sitting, 30(75%) students had pain with long sitting, out of which 27(90%) used to put wallet in back pocket along with long sitting, while 3(10%) students didn't give history of keeping wallet but had pain.

DISCUSSION

In this study, 5.3% male students had PS. 5% confirmed the radiating pain causing sciatica symptoms. Hence, they were asked for further testing. Lasegue sign and FAIR tests were applied. 66% were keeping wallet in their back pocket which also adds pressure on buttock area causing sciatica like symptoms due to nerve compression. 83% had radiating pain on one side while 17% had both side radiating pain. These students were not taking any medical intervention and were ignoring this disease. They had long sitting work.

The study found various causes of pain and numbness in buttock. Students having long sitting work, poor posture with weak muscle tone and keeping wallet in rear pocket are the main factors. Although mostly ignored and left untreated, most thought of it as a minor muscle spasm. 66% students had six months and longer pain while 33% had pain of one week duration. 75% said that their pain aggravate with long sitting while 15% blame long standing for pain starting. 47.50% got pain relieve by rest while 25% students used massage to relief pain. 7.50% students applied heat to relive pain but complaining temporary relief.

Piriformis syndrome seems less common but it's increasing in students and young generation due to poor posture, poor eating habits, prolong sitting, sleep disturbance and weak muscle tone. All these factors lead to piriformis muscle syndrome.

Implication of study is to put students in special attention of muscle weakness. Students with long sitting are developing this problem. Misdiagnosed or undiagnosed, it is not well understood in clinical setups. Self-medication and massage is done by most people with such pain to avoid this condition hence mistreated or left untreated. Through experience we found four symptoms occurring in PS patients: buttock pain, pain radiating to back of leg, tenderness over buttock area and pain in piriformis muscle stretch. In this study only male students were allowed to participate while another study was conducted in women which showed that PS was more common in women with a ratio of 3 to 1.

Strengths of this study are standardized measures, which were using two tests for confirming the PS.

Risk factors according to students were measured. Students were selected to see the combination of long sitting with PS. Weaknesses of this study are specified area of a university in Lahore with only certain age people at university.

CONCLUSION

Prevalence of piriformis syndrome among male students of University of Lahore was found 5%. This shows involvement of radiating buttock pain among students who have prolonged sitting work.

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REFERENCES

1. DiGiovanna EL, Schiowitz S, Dowling DJ. An osteopathic approach to diagnosis and treatment: Lippincott Williams & Wilkins; 2005.
2. Stewart JD. The piriformis syndrome is overdiagnosed. *Muscle Nerve* 2003;28:644-6.
3. Durrani Z, Winnie AP. Piriformis muscle syndrome: an underdiagnosed cause of sciatica. *J Pain Symptom Management* 1991;6:374-9.
4. Pace JB, Nagle D. Piriform syndrome. *Western J Med* 1976;124:435.
5. Hallin RP. Sciatic pain and the piriformis muscle. *Postgrad Med* 1983;74:69-72.
6. Boyajian-O'Neill LA, McClain RL, Coleman MK, Thomas PP. Diagnosis and management of piriformis syndrome: an osteopathic approach. *J Am Osteopathic Assoc* 2008;108:657-64.
8. Smoll NR. Variations of the piriformis and sciatic nerve with clinical consequence: a review. *Clinical Anatomy* 2010;23:8-17.
9. Kean Chen C, Nizar AJ. Prevalence of piriformis syndrome in chronic low back pain patients. A clinical diagnosis with modified FAIR Test. *Pain Practice* 2013;13:276-81.
10. Fishman LM, Wilkins AN. *Functional electromyography: provocative maneuvers in electrodiagnosis*: Springer Science & Business Media; 2010.
11. Tonley JC, Yun SM, Kochevar RJ, Dye JA, Farrokhi S, Powers CM. Treatment of an individual with piriformis syndrome focusing on hip muscle strengthening and movement reeducation: a case report. *J Ortho Sports Physical Therapy* 2010;40:103-11.
12. Kirschner JS, Foye PM, Cole JL. Piriformis syndrome, diagnosis and treatment. *Muscle Nerve* 2009;40:10-8.
13. Mitra SR, Roy S, Dutta AS, Ghosh A, Roy R, Jha AK. Piriformis syndrome: a review. *J Evolution Med Dental Sci* 2014;3:3804-15.
14. Fishman LM, Dombi GW, Michaelsen C, Ringel S, Rozbruch J, Rosner B, et al. Piriformis syndrome: diagnosis, treatment, and outcomea 10-year study. *Arch Physical Med Rehabil* 2002;83:295-301.
15. Benzon HT, Katz JA, Benzon HA, Iqbal MS. Piriformis Syndrome: Anatomic Considerations, a New Injection Technique, and a Review of the Literature. *Anesthesiology* 2003;98:1442-8.