Fusion of the short lateral rotators of the thigh and posterior fibers of the gluteus medius with a variant course of the common fibular nerve

Chernet Tessema Bahru

INTRODUCTION

The short lateral rotator muscles of the thigh that belong to the deep group of gluteal muscles, include the piriformis, superior gemellus, obturator internus, inferior gemellus, and quadratus femoris. All of these muscles, with the exception of quadratus femoris, attach directly or indirectly to the greater trochanter. Sometimes, the posterior edge of the gluteus medius may blend with the piriformis muscle [1]. Frequently, the superior and inferior gemelli fuse with the corresponding sides of obturator internus tendon before it inserts to the greater trochanter forming a conjoint tendon [1, 2]. This gemelli-obturator internus complex was called as triceps coxae muscle [2]. The tendon of piriformis muscle can be partially blended with the common tendon of obturator internus-gemelli complex [3].

The separate tibial and common fibular parts of the sciatic nerve are held together by connective tissue and frequently pass through the greater sciatic foramen inferior to the piriformis muscle [2]. Occasionally they remain separate in which case the tibial nerve passes inferior to the piriformis muscle, while the common fibular nerve pierces through or passes superior to the piriformis muscle [2, 4-6]. The short lateral rotator muscles and the surrounding tissue are closely related to the sciatic nerve in the subgluteal space and could involve in non-discogenic extra-pelvic sciatic and other nerve entrapments causing deep gluteal syndrome [7, 8]. The sciatic nerve takes variable course in relation to the piriformis muscle. In a study done on 51 cadavers it is found that in 89% of these cases it passed inferior to the piriformis muscle as undivided nerve. In the rest of the cases it is divided into common fibular and tibial nerves, where the common fibular nerve showed frequent variations in its course. In about 8.8% of these cases it passed through the piriformis muscle, while in about 2.9% of the cases superior to the piriformis [9, 10].

CASE REPORT

During the 2018/2019 summer dissection of the left gluteal region of an 80-year-old male cadaver, fused tendons of four lateral rotators of the thigh and the posterior portion of gluteus medius muscle that attached to the greater trochanter of femur through a common tendon were detected. The common fibular nerve coursed between the posterior fibers of gluteus medius and piriformis muscles and merged with the tibial nerve in the subgluteal space. Variations of the lateral rotators of the thigh and the course of the sciatic nerve divisions is widely reported but no report similar to this case has been found. The addition of the posterior fibers of the gluteus medius to the lateral rotators on the common tendon would probably reinforce the ability of these muscles in laterally rotating the thigh. Such variation of attachment with variant course of the common fibular nerve could also be associated with different pain syndromes in the gluteal region.

Key Words: External rotators; Gluteus medius; Common tendon; Variant course

DISCUSSION

Anatomic variations of distal attachment patterns of the short lateral rotator...
Figure 2) Posterior view of a dissected left gluteal region showing the attachment of the common tendon of insertion to the medial aspect of the greater trochanter of the femur and the course of common fibular nerve between the posterior fibers of gluteus medius muscle and piriformis muscle and it merger with the tibial nerve in the subgluteal space. The anterior fibers of gluteus medius are detached from the greater trochanter and reflected superiorly and laterally to show the common tendon. CFN: Common Fibular Nerve; TN: Tibial Nerve.

The anterior fibers of gluteus medius and piriformis muscle are detached from the greater trochanter and reflected superiorly and laterally to show the common tendon. CFN: Common Fibular Nerve; TN: Tibial Nerve.

The variant course of the common fibular nerve inferior to the, through or superior to the piriformis muscle is a long-known fact and its course superior to the piriformis muscle is a long-known fact and its course superior to the piriformis muscle was considered as an addition to the lateral rotators and probably reinforces the ability of these muscles in laterally rotating the thigh.

CONCLUSION

In conclusion, even though there is a wide variation of the relationship between the short external rotators of the thigh and the course of the sciatic nerve and its divisions, no report similar to this case involving the gluteus medius, the short lateral rotators and the common fibular nerve has been found. These variation of attachment of the gluteal muscles with variant course of the common fibular nerve could be associated with different pain syndromes in the gluteal region and the awareness of such a variation would help in the interpretation of various imaging findings, in carrying out anesthesiologic, surgical and other clinical procedures to diagnose and treat problems of the gluteal region. It is particularly important in posterior approach hip replacement therapies (arthroplasty) to avoid iatrogenic injury or damage of these structures that would affect the treatment outcome, which consequently affects patient’s quality of life.

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REFERENCES