

Anatomical Variation of Adductor Brevis Muscle – A Case Report

Dr. Meenakshi Meena¹, Prof. Sunil Kumar², Dr. Isha Hershawani³, Dr. Neha Sharma¹

¹MD Scholar, ²Professor, ³Assistant Professor,

^{1,2,3}Department of Rachana Sharir, National Institute of Ayurveda

Deemed to be University (de- novo) Jaipur, Rajasthan, India

ABSTRACT

Adductor group of muscles are present in the medial compartment of the thigh. In this group adductor longus, adductor brevis, adductor magnus, gracilis, obturator externus and pectineus muscles are present implementing the function of adduction and medial rotation. Deviations from normal anatomy are rare and hardly reported. The occasional mention of additional bellies of adductor brevis muscle is present in surveys of anatomical archives. The present study reports an extra belly of adductor brevis (AB) muscle on the right side found during a cadaveric dissection for postgraduates in the national institute of Ayurveda, Jaipur, Rajasthan. This case report is an effort to present the clinical applications of multiple bellies of the adductor brevis muscle of the thigh. It is possible to classify these muscular variations upon specialized radiological procedures such as CT and MRI scans only if the radiologist owns satisfactory knowledge of the variant anatomy of this region. These extra muscular slips can be fairly used in the reconstruction.

KEYWORDS: Adductor Brevis, Reconstructions, Variations

INTRODUCTION

Adductor Brevis muscle arises from a thin attachment from the external facet of the body and inferior ramus of pubis, among gracilis and obturator externus. Adductor Brevis muscle inserts via an aponeurosis into the femur, along a line from the lesser trochanter to the linea aspera, and on the upper part of the line immediately behind the pectineus and the upper part of adductor longus¹. The nerve supply was an anterior division of the obturator nerve. The obturator nerve has 2 divisions; the anterior division passes vertically downward on its anterior surface and the posterior division passes down behind it. The upper border of the adductor longus lies between the femoral and the profunda femoral vessels² and the upper border of the adductor brevis thus lie between the two-part of the obturator nerve. The main action of the adductor muscle group is to medially rotate the thigh, towards or past the median plane. To stabilize the standing posture on both feet, to correct lateral control of the trunk, or side to side shift of the surface on which one is standing (rocking a boat, standing on a balanced

board) of a person, adductor group of muscles are used. In kicking with the medial side of the foot in soccer and in swimming, the Adductor group of muscles are used. Adductor muscles contribute to flexion and extension thigh when running or against resistance. The adductors as a group contribute a large muscle mass³ and they are also important in many activities; it has been shown that a reduction of as much as 70% of their mass or function will result in only a slight to moderate impairment of the hip joint⁴.

CASE REPORT:

On routine postgraduate dissection, in the Department of Rachana Sharir, National Institute of Ayurveda, Jaipur, Rajasthan, we dissected a female cadaver of age 55 where there were two bellies of adductor brevis unilaterally [Fig A]. From the outer surface of the body and inferior ramus of the pubic bone, the tendon of the adductor brevis originates. The nerve supply, origin, and insertion of Adductor group muscles were studied and outlined. The variation was

How to cite this paper: Dr. Meenakshi Meena | Prof. Sunil Kumar | Dr. Isha Hershawani | Dr. Neha Sharma "Anatomical Variation of Adductor Brevis Muscle – A Case Report" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-4, June 2022, pp.610-612, URL: www.ijtsrd.com/papers/ijtsrd49593.pdf



IJTSRD49593

Copyright © 2022 by author(s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



photographed [Fig B]. On Right lower limb, the adductor brevis has a variant muscular slip.

After sectioning and reflecting adductor longus muscle and pectineus muscle, adductor brevis was

observed. This muscle having typical origin but was seen in two parts, and inferior down its fibers merged with the fibers of adductor longus muscle. The nerve supply was from anterior division of obturator nerve.

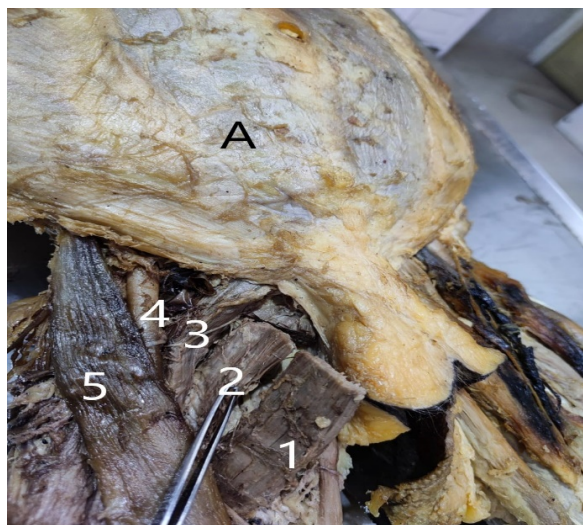


Fig.A. medial to lateral medial compartment of thigh showing muscle with extra slip of AB

- 1.medial slip of adductor brevis
- 2.lateral slip of adductor brevis
- 3.pectineus muscle
- 4.femoral artery
5. sartorius muscle

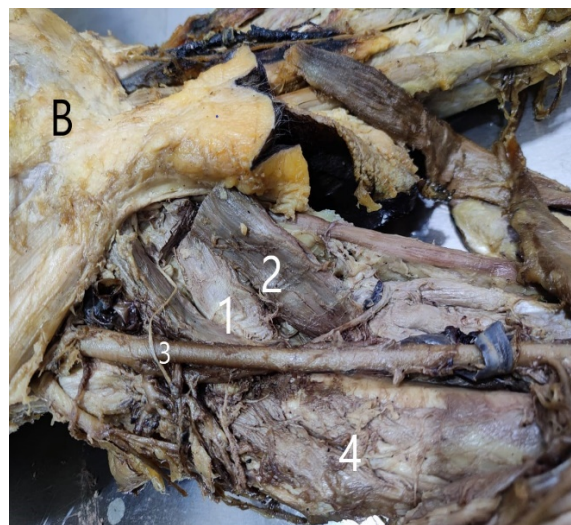


Fig.B. showing muscles of medial compartment of thigh with femoral artery

- 1.lateral slip of adductor brevis
2. medial slip of adductor brevis
- 3.femoral artery
- 4.vastus lateralis

DISCUSSION:

Adductor Brevis is said to have two or three separate parts or may be integrated into the adductor magnus⁵. Separation may be at the origin or insertion or complete⁶. A case reported by Ocheltree in which two separate divisions of the adductor brevis have quite separate insertions into the linea aspera but he did not mention it as a different muscle. To merit the separate name Maybe the gap between the two insertions was not enough⁷. A nonstandard adductor brevis in addition to the usual one encountered by Singh et al. It originated from the anterior surface of the inferior pubic ramus and was inserted into the upper part of linea aspera and adjoining part of the line from the linea aspera to the lesser trochanter. It was separated from the normal adductor brevis⁸. Thus, infrequent cases of bifurcation of adductor brevis are reported off and on. Division of adductor brevis into two distinct fasciculi near the insertion may be even normal⁹.

CLINICAL IMPLICATIONS:

Not only for anatomists but also for orthopaedic surgeons and radiologists the variant and additional

muscles are useful. Functionally, they may add or subtract to the strength of a particular group (adductor in this case). Myelodysplastic patients with subluxation or dislocation of the hip may be treated surgically by transferring the origin of the adductor brevis along with other adductors to the ischial tuberosity¹⁰. As a result of the transfer, the adductor group of muscles may be weakened for the functioning of adduction¹¹, the additional belly of the adductor brevis could possibly be utilized for this purpose. For athletes, variant adductor muscle strain may prove to be incapacitating. If rehabilitative procedures fail to cure the patient of pain and fragility, sports surgeons may have a choice to adductor release and tenotomy¹². In scrotal reconstruction, the adductor minimus has been used as a myocutaneous flap. For the same purpose, an additional belly of the adductor brevis can be also used.

CONCLUSION

It can be concluded that a variant adductor complex of the thigh happens due to greater or less fusion of different muscles of the adductor group. Anatomical

knowledge of these variations of the medial side of the thigh with the possible muscular variations is needed for the proper performance of surgeries and reconstructions.

REFERENCE

- [1] Salmon S. Muscle In: Gray's Anatomy. The Anatomical Basis of Clinical Practice. William PL, Bannis-ter LH, Berry MM, Collins P, Dyson M, Dussek JE, Ferguson MWJ. Edrs. 38th Ed. Edinburg. Churchill Livingstone. 2005; pp 874-5.
- [2] Sinnatamby CS. Lower limb. In: Last's Anatomy. 12th Ed. Edinburgh: Churchill Livingstone. 1998; p. 121-2.
- [3] Moore KL, Dalley AF. Clinically Oriented Anatomy. 5th Ed., Philadelphia, Lippincott Williams and Wilkins. 1999; 597-8.
- [4] Merkede G, Stener G. Function after removal of various hip and thigh muscles for extirpation of tumors. Acta Orthop Scand. 1981; 52:373.
- [5] Salmon S. Muscle In: Gray's Anatomy. The Anatomical Basis of Clinical Practice. William PL, Bannis-ter LH, Berry MM, Collins P, Dyson M, Dussek JE, Ferguson MWJ. Edrs. 38th Ed. Edinburg. Churchill Livingstone. 2005; pp 874-5.
- [6] Hollinshead, W.H. Buttock, Hip Joint and Thigh. In: Anatomy for Surgeons, Vol 3. 2nd Ed. New York, Harper and Row. 1969; pp 720-1.
- [7] Ochiltree, A.B. Some muscular anomalies in lower limb. J Anat Physiol. 1912; 47:31.
- [8] Schaeffer JP. Musculature of the lower limb. In: Morris' Human Anatomy- Complete Systemic Treatise. J.C. B. Grant. 10th Ed. Philadelphia, Toronto. The Blakiston Company. 1947; pp 539-40.
- [9] Upasna, Rajan Kumar Singla, Arun Sharma, Mannat Singla. BILATERALLY BIFID ADDUCTOR BREVIS: A CASE REPORT. Int J Anat Res 2016; 4(2):2405-2408. DOI: 10.16965/ijar.2016.210.
- [10] London JT, Nichols O. Paralytic Dislocation of the Hip in Myelodysplasia. The role of adductor transfer. J Bone Joint Surg Am. 1975; 57(4):501-6.
- [11] London JT, Nichols O. Paralytic Dislocation of the Hip in Myelodysplasia. The role of adductor transfer. J Bone Joint Surg Am. 1975; 57(4):501-6.
- [12] Nicholas SJ, Tyler TF. Adductor muscle strains in sport. Sports Med. 2002; 32:339-344.