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A STUDY OF ANAMOLOUS ORIGIN OF GLUTEAL ARTERIES

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ABSTRACT

Aim: The present study has been taken up to observe the branching pattern of internal iliac artery and its importance for the clinicians in their respective fields.

Methodology: 45 pelvic halves were studied from dissected cadavers. The branches of gluteal arteries were traced carefully by separating the connective tissue surrounding the arteries.

Result: In 4 cadavers, inferior gluteal artery was given off in the gluteal region, in 1 case it is given off from posterior division of internal iliac artery. In 1 case superior gluteal arose in common with internal pudendal artery.

Conclusion: Vascular variations in the gluteal region are important for surgeons and anatomists.

Key Words: Internal iliac artery, Gluteal arteries, Pelvic region, Internal pudendal artery

INTRODUCTION

Each internal iliac artery is about 4 cm long and begins at the common iliac bifurcation level with the intervertebral disc between L5 and S1 vertebrae and anterior to the sacroiliac joint. As it passes downward across the brim of the pelvis it is separated from the psoas major by the external iliac vein and has the internal iliac vein lying somewhat to its posterolateral side. Inferior gluteal artery is the larger terminal branch of anterior division of internal iliac artery and principally supplies the buttock and the thigh.

MATERIALS AND METHODS

A total of 45 pelvic halves had been studied, of which study on 12 pelvis were also included (i.e., 24 pelvic halves) and the remaining 21 being single sides. The study was done on adult cadavers, procured for dissection for undergraduate students Dr. Pinnamaneni Siddhartha Medical College, Gannavaram and Gitam Medical College, Andhra Pradesh. The study was carried out in the dissection hall of the above college. The Common Iliac Artery was identified and the branches were carefully cleared till the terminal bifurcation which were External Iliac and Internal Iliac Arteries(IIA). The tributaries of internal iliac vein along with the main trunk were discarded to visualize the branches of IIA. Connective tissue surrounding the IIA was cleared. Parietal and visceral branches were traced. Some of the branches of IIA were traced till their exit from the pelvic cavity and are called parietal branches. The other branches were traced till they reached the specific pelvic organs and are named as visceral branches.

OBSERVATION

The length of common iliac artery is about 1.5cm long (figure:1). The actual length of common iliac artery is 4cm. Normally the division occurs between the fifth lumbar vertebra and the upper border of the sacrum. In the present study its division occurred above the level of L5. In 1 specimen the inferior gluteal artery was arising from the posterior division of internal iliac artery (figure: 2). In 1 pevic half , a common trunk from IIA has given superior gluteal artery and internal pudendal artery and inferior gluteal artery was arising from the anterior division of internal iliac artery separately (figure: 3). In 4 specimens the inferior gluteal artery and internal pudendal artery were arising from a common stem which has been given off in the gluteal region (figure:4)

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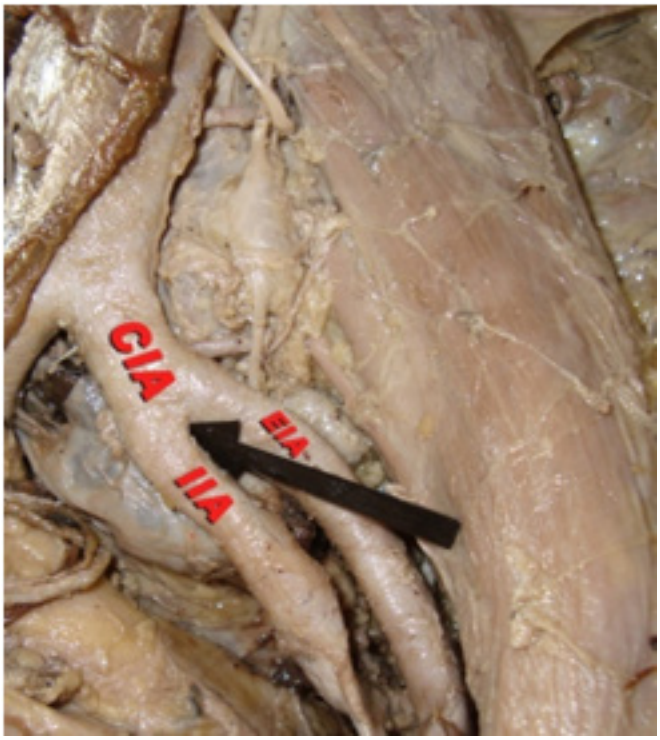

Figure 1: Showing branches of CIA

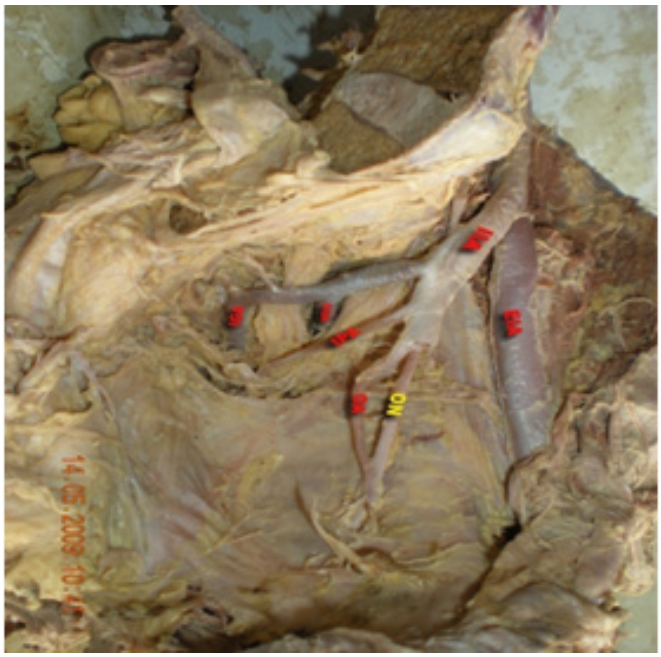

Figure 2: Showing IGA from the posterior division of internal iliac artery

Figure 3: Showing SGA AND IPA from IIA

CIA: COMMON ILIAC ARTERY
EIA: EXTERNAL ILIAC ARTERY
IGA: INFERIOR GLUTEAL ARTERY
OA: OBTURATOR ARTERY
CT: COMMON TRUNK

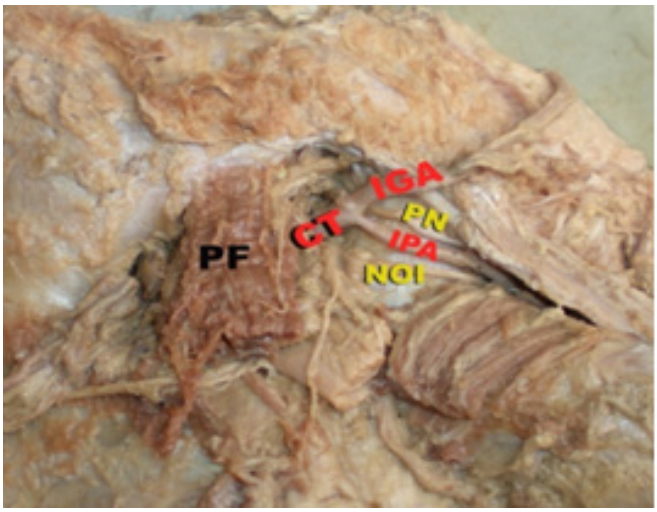

Figure 4: Showing IGA and IPA from CT

IIA: INTERNAL ILIAC ARTERY
SGA: SUPERIOR GLUTEAL ARTERY
IPA: INTERNAL PUDENDAL ARTERY
ON: OBTURATOR NERVE

DISCUSSION

The inferior gluteal artery may be doubled or form a common trunk with superior gluteal artery (Bergman RA et al1988[1]). In a study by Gabrielli et al[2]. the inferior gluteal artery or one of its branches pierced the sciatic nerve in 22.5% of cases (Ga-

brielli et al 1997[2]). In the present study inferior glutel artery arose from the posterior division of internal iliac artery. Variations of gluteal vessels is importance to the orthopedic surgeons dealing with the fractures and dislocations of the hip. In a study by Surekha D Shetty et al 2012[3], there was complete absence of inferior gluteal artery. Inferior gluteal artery may form a common trunk with the superior gluteal (Bergman RA et al 1988[1]). In study of Kawanishi Y et al[4], the IPA originates together with the superior and inferior gluteal artery within 1 cm of each other. In a study of Pavan Pet al 2014[5], inferior gluteal artery took origin from anterior division in 42 specimens (84%),from posterior division in 3 specimens(6%) and was found to be absent in 5 specimens(10%). In the present study inferior gluteal artery arose from posterior division of internal iliac artery in one specimen, in another specimen superior gluteal artery and internal pudendal artery arose as a common trunk and in four specimens inferior gluteal artery arose from a common trunk along with internal pudendal artery in the gluteal region.

CONCLUSION

The knowledge of internal iliac artery and gluteal arteries are very important in pelvic surgeries , hysterectomies and orthopedic surgeries related to hip joint.

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REFERENCES

1. Bergman RA, Thomson SA, Afifi AK, Saadesh FA. Compendium of Human Anatomic Variations. Baltimore, Munich, Urban & Schwarzenberg. 1988; 84.
2. Gabrielli C, Olave E, Sarmento A, Mizusaki C, Prates JC. Abnormal extra pelvic course of the inferior gluteal artery. Surg Radiol Anat. 1997; 19: 139–142.
3. Surekha D SHETTY, Abhinitha P, Sapna MARPALLI, Satheesha NAYAK B Total replacement of inferior gluteal artery by a branch of superior gluteal artery *Int J Anat Var (IJAV). 2012; 5:* 85–86.
4. Kawanishi Y, Muguruma H, Sugiyama H, Kagawa J, Tanimoto S,Yamanaka M, et al. Variations of the internal pudendal artery as a congenital contributing factor to age at onset of erectile dysfunction in Japanese. BJU Int 2008;102(2):259.
5. Pavan P Havaldar , Sameen Taz , Angadi A.V , Shaik Hussain Saheb Study Of Variations In Anterior Division Of Internal Iliac Artery *int j anat res 2014, vol 2(2):363-68. Issn* 2321- 4287.