



Review

Analysis of the height of origin of profunda femoris artery from the femoral artery with regards to the inguinal ligament

***Nesar Ahmad Esar and Ezatullah Sajad**

Abstract

Khost Shiekhzayed University

*Corresponding Author E-mail:
esar12345@yahoo.com; Tel:
009377808014

To find out the place of height of origin of profunda femoris artery from the arteria femoralis with regards to the inguinal ligament. Materials and methods: Routine dissection of 4 formalin fixed cadavers (2 males and 2 females) on both lower limbs (totally 8 lower limbs) allotted for the 2nd year students of Khost Shiekhzayed medical university Afghanistan. Descriptive cross-sectional study. October 2019 to March 2020. Khost Shiekhzayed University Afghanistan. Among them an unusual origin of profunda femoris artery was observed on the left lower limb of 72 years old female cadaver (9.42%). The profunda femoris artery arose laterally about 0.6 cm from the arteria femoralis distal to the inguinal ligament. It arose normally on the proper lower limb (3.00 cms -4.0cms from the inguinal ligament). A variance tall of origin of profunda femoris artery and its branches will cause changing in the calibers strongly influencing vascularisation quality of belonging flaps. In occlusion of the superficial arteria femoralis, the profunda femoris artery forms an efficient collateral bed between iliofemoral segment and the arteria poplitea and its branches. Percutaneous arteria femoralis cannulation can cause pseudo aneurysms. When this happens the puncture site is usually within the profunda femoris artery, where anatomic relationships make hemostasis difficult to realize. These complications landed up within the study of relations of these arterial complications within the palpable landmarks.

Keywords: Arteria femoralis, High origin, Inguinal ligament, Profunda femoris artery.

INTRODUCTION

The profunda femoris artery (deep arteria femoralis) is that the largest branch that arises laterally from the femoral artery about 3.5cm distal to the inguinal ligament. initially lateral to the arteria femoralis (Standring, 2008; Moore and Dalley, 2006). It spirals posterior to the present and therefore the vena femoralis to succeed in the medial side of the femur. It passes between pectineus and adductor longus, then between the latter and therefore the adductor brevis (Snell, 1992), before it descends between adductor longus and adductor magnus. It pierces adductor magnus and anastomoses

with the upper vascular branches of the arteria poplitea (Snell et al., 2007). This terminal part is usually named because the fourth perforating artery (Prakash et al., 2010). The profunda femoris artery is that the main supply to the adductor, extensor and flexor muscles and also anastomoses with the interior and external iliac arteries above and with the arteria poplitea below (Perera, 1995). As a result, the profunda femoris artery features a great surgical.

The present study is meant to review the work done by previous workers and to show regional variations,

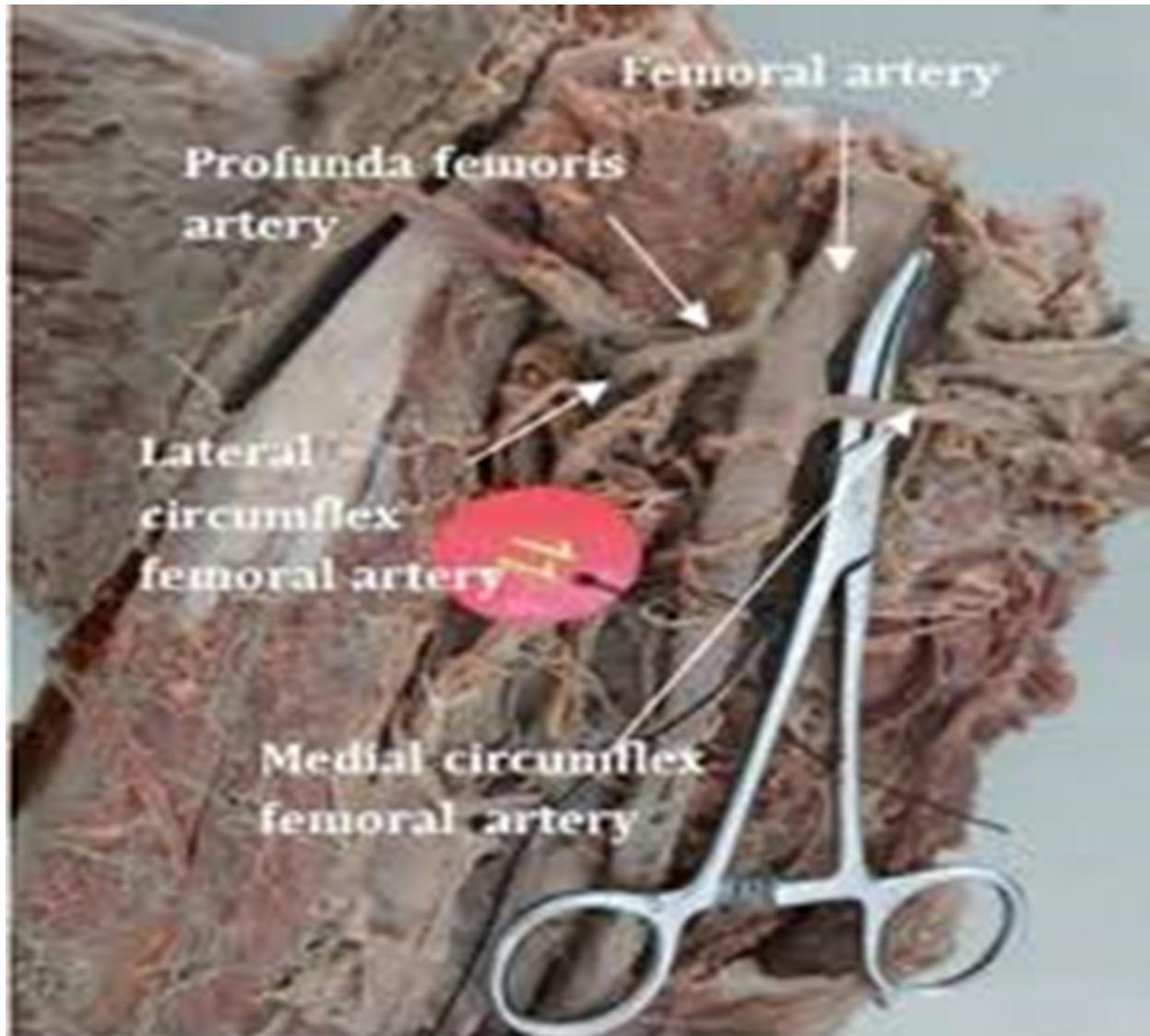


Figure 1. Origin of the Profunda femoris artery from the arteria femoralis 0.5 cms distal to the inguinal ligament.

if any.

MATERIALS AND METHODS

Four formalin fixed cadavers were chosen for this study. there have been two male and two female cadavers with the age range between 35-75 years. Dissection started with skin incision followed by superficial fascia. The superficial inguinal lymph nodes in the superficial vessels were identified and therefore the fascia lata was incised thus exposing the femoral triangle. The canalis inguinalis was identified, so were the adductor longus and sartorius muscles. The femoral sheath was identified and its compartments were dissected thus clearing the arteria femoralis and its major branches. The relation of the

profunda femoris at its origin to the arteria femoralis was studied. the space of the location of origin of the profunda femoris artery from the inguinal ligament was measured in millimeters with a scale.

Routine dissection was administered on 04 formalin fixed cadavers (two male and two female) on both the lower limbs. At that point a 72-year-old female cadaver showed an unusual origin of profunda femoris artery on the right side. The profunda femoris artery was traced out from the origin to termination and relevant measurements were made employing a scale. On the left side, it arose from the lateral aspect of the arteria femoralis at a distance of 0.5 cms (5 mm) distal to the inguinal ligament (Figure 1). On the proper side, it arose normally about 3.5 cms distal to the inguinal ligament. On each side, the profunda femoris artery coursed inferomedially and exited

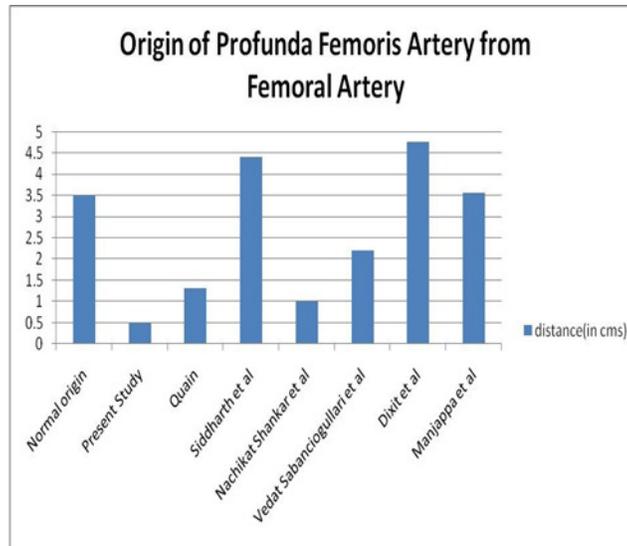


Figure 2. Showing origin of profunda femoris Artery form arteria femoralis in various studies.

the femoral triangle within the intervals between the pectineus and adductor longus muscles. the connection of profunda femoris artery to the structures within the lower a part of the arteria femoralis and its mode of termination didn't reveal any variation on each side. On the left side, the medial and lateral artery arose from the profunda femoris artery normally. No other variations were observed within the branching pattern of the profunda femoris artery on both the edges of the cadaver. altogether the cadavers the profunda femoris artery arose from the lateral aspect of the arteria femoralis.

DISCUSSION

Earlier studies on profunda femoris artery carried by the varied researchers within the in study they found significant various in the origin, course and relations of it (Tanyeli et al., 2006).

The origin of profunda femoris artery is usually described as being from the lateral aspect of the arteria femoralis around 3.5 cms distal to the inguinal ligament. Within the present study the profunda femoris artery arose from the lateral aspect of the arteria femoralis at a distance of 0.5 cms distal to the inguinal ligament (Baptist et al., 2007).

In a study conducted recently on 430 thighs it had been found that the origin of the profunda femoris artery was but 1.3 cms distal to the inguinal ligament in 20 thighs (4.7%). the bulk of the profunda femoris artery arose between 2.5 and 5.1 cms from the inguinal ligament (Colborn et al., 1995).

Another study conducted on 100 cadavers revealed that the profunda femoris artery originated at a medial distance of 4.4. cms from the inguinal ligament. At one

instance it arose at the extent of the inguinal ligament (1%) (Chleoborad and Dawson, 1986).

Recent study commented that the profunda femoris artery originated from the lateral aspect of arteria femoralis at a distance of 4.75 cms distal to the inguinal ligament (Bergman et al., 1988).

In the study conducted suggested that the profunda femoris artery originated at a distance of 2 cms from the midpoint of the inguinal ligament within the arteria femoralis (Siddharth et al., 1985).

Another study reported that the profunda femoris artery originated from the lateral side of the arteria femoralis at a distance of but 1 cm from the inguinal ligament (Dixit et al., 2001).

In this study it is observed that the profunda femoris artery originated from the lateral side of the arteria femoralis at a distance of three .56 cms distal to the mid inguinal point (Vedat et al., 2009).

On a study administered recently the profunda femoris artery arose from the lateral aspect of arteria femoralis just lower to the inguinal ligament (Nachikat and Roopa, 2009) (Figure 2).

CONCLUSION

The relationship of nervus femoralis, vena femoralis and arteria femoralis within the upper a part of the femoral triangle is vital in procedures like femoral arterial and venous puncture and nervus femoralis blocks. A high origin of profunda femoris artery could thus pose difficulties in performing those procedures. Surgical exposure of the profunda femoris artery is usually necessary in vascular reconstructive procedures. Furthermore, plastic surgeons have shown great interest

within the muscular branches of the profunda femoris artery when designing procedures that incorporate myocutaneous flaps. The profunda femoris artery is usually visualized using angiography, ultrasound and Doppler imaging, digital subtraction and resonance imaging. Thus, anatomical variations of the profunda femoris artery and its branches have significant clinical implications.

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