Variation of Origin Patterns of Profunda Femoris Artery and its Branches in Egyptians Anatomical & Angiographic study

Thesis

Submitted in partial fulfillment of the requirements of Master Degree in Anatomy and Embryology

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2019

Summary and Conclusion

Variation of origin patterns of profunda femoris artery and its branches in Egyptians: anatomical & angiographic study

The present study was assigned to investigate the different origin patterns of the PFA and its branches. Knowledge of anatomic variation of FA, PFA, LCFA and MCFA origin was especially significant in vascular, plastic and reconstructive surgery, in order to prevent necrosis of transplantation flap. Also, it was significantly helpful in attempts to decrease the incidence of femoral head avascular necrosis in procedures such as arterial catheterization or hip surgery.

Multidetector computed tomographic (MDCT) angiography has created a new diagnostic strategy in peripheral arterial circulation, with widespread clinical applications and diagnostic accuracy when compared to MR angiography, trans-catheter digital subtraction angiography and duplex ultrasound. It is becoming more accurate and has the attraction of being noninvasive, quick procedure. Three dimensional images provide information about the imaged vessels and adjacent structures.

The present study was carried out on ten lower extremities of adult human cadavers obtained from formalin fixed cadavers conducted for medical undergraduate and postgraduate students in Department of Anatomy and Embryology, Faculties of Medicine of Cairo and Fayoum universities and 3D angiographic images of 49 patients obtained from Radiology Department of EL Kasr Alainy Hospital and El Ahram scan

center in Giza in addition to El Amal scan radiology center in EL-Fayoum.

Several variations were observed in the dissected cadavers. Early division of the common femoral artery into DFA and SFA at the mid–inguinal point was observed. Origin of MFCA and LCFA from the common femoral artery as well as origin MCFA in a common trunk with the DFA was reported.

In the radiological images, the distance between the origin of PFA and the mid-inguinal point was nearly found similar in males and females. Five different original sites of the PFA were detected and origin of PFA from the posterolateral aspect of the FA was the most commonly reported in both males and females. MCFA was found mostly originated from CFA either directly or by a common stem with PFA while LCFA was found mostly originated from the lateral aspect of the PFA in both males and females cases.

The mean distance between origin of PFA from FA and origin of MCFA from PFA was found commonly between 5-18mm while the mean distance between origin of PFA from FA and origin of LCFA from PFA was found commonly between 7-25mm. Origin of MCFA was found higher than origin of LCFA in most of male and female cases. The mean number of perforating arteries of PFA was found 3.7 ±0.66 (range 3–5) in male and female cases on both sides. Left to right variation in number of perforating vessels was not significant (p-value >0.05).

It could be concluded that variations of PFA and its branches are common in Egyptian population. It is most important to know variant origin of PFA and its branches as they have an important role during preoperative clinical evaluation for surgical and interventional revascularization of the ileo-femoral and femoro-popliteal segments. Accordingly variations in femoral region vasculature in relation to population, gender and side should be taken in consideration during radiological and vascular interventions.