PARTICULARITIES OF COLLATERALS AND TERMINALS OF EXTERNAL ILIAC ARTERIES IN HORSE

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Abstract: The present study deals with some anatomical aspects observed during in the circulatory system in horse during the normal didactical activities in the Department of Comparative Anatomy of Faculty of Veterinary Medicine Cluj Napoca. Based on the dissections carried on 20 horse hind limb parts we concluded that there is a certain amount of individual plasticity in the case of some arteries, considered as collaterals or terminals in the pelvic and thigh area.

INTRODUCTION

The external iliac artery (Arteria iliaca externa) in horse is one of the terminals of the abdominal aorta. This artery is placed at the side of the pelvic inlet, alongside the external iliac venous trunk and descends obliquely from sublombar area to the internal inguinal ring. From here, the artery is called the femoral artery (A.femoralis).

The chief branches of the external iliac arteries are: the circumflex iliac artery (A.circumflexa ilium profunda), the external spermatic (cremasteric) artery (A.spermatica externa) in male or the middle uterine artery (A.uterina media) in female.

As one of the main collaterals of the femoral artery (A.femoralis), the deep femoral artery (A.profonda femoris) is short (4-5 cm) and ends with the pudendo-epigastric trunk (Truncus pudendoepigastricus) and the circumflex femoral medial artery (A.circumflexa femoris medialis).

The circumflex femoral medial artery (A.circumflexa femoris medialis) passes at the medial part of the femur, in between the iliacus and pectineus muscles, giving off branches in caudo-lateral muscles of the thigh.

The pudendo-epigastric trunk (Truncus pudendoepigastricus) may arise directly from external iliac artery in some cases, having a cranial trajectory, dorsally from the inguinal ring, giving off 2 branches: the caudal epigastric artery (Arteria epigastrica caudalis) and external pudend artery (Arteria pudenda externa). The caudal epigastric artery (Arteria epigastrica caudalis) passes above the deep inguinal ring and follows the lateral border of the rectus abdominis muscle. The external pudend artery (Arteria pudenda externa) is larger than the previous one, enters the inguinal canal, at the posterior rim of it, in between the inguinal ring and vaginal canal. The artery leaves the inguinal canal at the level of the superficial inguinal ring and gives off 2 branches: the cranial penian artery (A.penis cranialis) and superficial caudal epigastric artery (A.epigastrica cranialis superficialis) that gives off preputial branches (rami preputialis) in male and mammary branches (rami mammarii).

MATERIAL AND METHOD
Our investigations were carried out in the period of 2002/2005, during regular dissection classes with II-nd year vet students.Approx. 20 horse limb parts were studied in the Anatomy Labs of our faculty. Usual dissections were made and our anatomical observations were noted, photographed and drawn in some cases.

RESULTS AND CONCLUSIONS

As a result of our investigations at one 12 years old male individual the absence of the circumflex femoral medial artery (A.circumflexa femoris medialis) was noticed.

Topographically, the deep femoral artery (A.profonda femoris) is placed above the femoral ring, few centimeters before the external iliac artery ends. The circumflex femoral medial artery (A.circumflexa femoris medialis) is placed above the femoral ring, arising from the femoral artery as a direct caudal branch of this artery. Compared with the deep femoral artery (A.profonda femoris) in terms of its caliber, the circumflex femoral medial artery (A.circumflexa femoris medialis) is much larger even though (according the anatomical sources) this artery represents one of its terminals.

In this case the deep femoral artery (A.profonda femoris) may be assimilated as the pudendo-epigastric trunk (Truncus pudendoepigastricus) which, in all other cases observed by
us and according to anatomical literature, represents together with the circumflex femoral medial artery (A.\textit{circumflexa femoris medialis}) its terminal branches.

So, in the present case, one can notice that the pudendo-epigastric trunk (\textit{Truncus pudendoepigastricus}) and the deep femoral artery (A.\textit{profonda femoris}) may be considered as collaterals of the external iliac artery (Arteria \textit{iliaca externa}) while the circumflex femoral medial artery (A.\textit{circumflexa femoris medialis}) becomes collateral of the femoral artery (A.\textit{femoralis}).

CONCLUSIONS

These observations show that in the case of the vascular morphology there is a large individual plasticity, in terms of origins, placement and distribution for some blood vessels.

In terms of caliber differences we tend to think that this is a consequence of the destination of this single animal-draught horse- knowing that the circumflex medial artery is one of the main blood sources for the caudo-lateral muscles (propulsor) of the thigh.

The reduced dimensions and caliber of the deep femoral artery or of the pudendoepigastic trunk may be a result of the castration, as a physiological adaptation due the lack of sexual activity.

BIBLIOGRAPHY