بعض الدراسات التشريحية على الشريان الفخذي في الجمل وغيره

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يعتبر الشريان الفخذي الاتصال الطبيعى المباشر للشريان الرئيسي الخارجي وهو السائل عن نقطة تقاء القناعات الخلفية للجمل. هذا يعتبر الجمل هو الحيوان الوحيد الذي يسخ في الشريان الفخذي الغائر من الشريان الفخذي. وقد وجد أن الشريان الفخذي الشمالي يعطى نقطة الشريان الدائر الفخذي الأخرى، إلا أنه يوجد في بعض الحيوانات المستأنسات حيث ينتمي الشريان الفخذي الغائر إلى كل من الشريان السابق ذكره والجذع الاستنباطى شرشفى.

بنتلك كل الشريان الفخذي كل من الشريان الدائر الفخذي الوحشي، الشـريان الغاذى الفخذي وجذع عام لكل من الشريان الركعي النازل والشريان الصافى إلى جانب ثلاثة من الشرايين الفخذي الخلفية.
SOME ANATOMICAL STUDIES ON THE FEMORAL ARTERY OF THE ONE HUMPED CAMEL 
(CAMELUS DROMEDARUS)

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SUMMARY

The level of origin, course and branches of the femoral artery were completely described. The similarity and differences in its anatomical features were discussed with that of other domesticated animals. However, the continuation of the femoral artery and the caudal branch of the saphenous artery were not included.

INTRODUCTION

Only little information was given by LE SIRE (1903) about the vasculature of the pelvic limb in the one-humped Camel. In order to throw light on this subject, the course and branches of the femoral artery were described in detail. Its comparative features were discussed with that of other domestic animals.

MATERIAL and METHODS

This study was carried out on 10 pelvic limb of the one-humped camel (Camelus dromedarius) of both sexes and different ages. For studying the course and distribution of the arteries, the specimens were injected at first with 10% formalin solution and after 2 days with red coloured gum-milk (Latex). The Nomenclature used is that adopted by the NOMENCLATURA ANATOMICA VETERINARIA (1973).

RESULTS

The femoral artery (1/4) is the distalward continuation of the external iliac artery as the latter gains the Lacuna vasorum. It passes in the femoral canal to reach the distal extremity of the femur where it continues between the two heads of M.gastrocnemius as A.poplitea.

Along its course, the femoral artery detaches several muscular branches to the cranio-medial muscles of the thigh, in addition to the following branches:

A.Profunda femoris:

The deep femoral artery (1/5) is detached about 3 cm proximal to the trochanter minor of the femur and descends along the caudal surface of the femur to terminate in M.vastus lateralis. It vascularizes Mm.pectineus, semimembranosus, vastus intermedius and biceps femoris. The deep femoral artery gives origin to the obturator branch and the medial circumflex femoral artery.

The obturator branch is detached from the deep femoral artery just before the latter curves around the trochanter minor ossis femoris. It ascends between Mm.adductor and obturator externus to end by anastomosing with a branch from the obturator artery. It detaches an acetabular branch at the level of the neck of the femur to supply the articular capsule of the hip joint and penetrates its caudomedial wall to supply the proximal extremity of the femur.

The medial circumflex femoral artery (1/6) seems to be the distalward continuation of the deep femoral artery. It pierces the adductor muscle where it divides into ascending and descending branches. The ascending branch terminates in the semimembranosus and vascularizes the quadratus femoris, external obturator and adductor muscles, in addition to a small twig to the periosteum of the ischial tuber. The descending branch supplies Mm.adductor, semitendinosus and semimembranosus.

A.circumflexa femoris lateralis:

The lateral circumflex femoral artery (1/7) is detached at the same level of origin of the deep femoral artery, but in some cases it arose about 2 cm distal to the before mentioned level. It detaches a descending branch then divides into an ascending and transverse vessels.

The descending branch is a large vessel which passes between Mm.rectus femoris cranially and vastus medialis and intermedius caudally. It terminates either in rectus femoris or vastus lateralis.

The ascending branch passes between rectus femoris and vastus lateralis to terminate between Mm.gluteobiceps and tensor fasciae latae.

The transverse branch courses distally between Mm.vastus lateralis and intermedius, and vascularizes the before mentioned muscles in addition to M.rectus femoris and the periosteum around the trochanter major of the femur.

A.nutritia femoris:

The nutrient artery of the femur is detached from A.femoralis within the femoral canal. It descends between the medial border of the femur and M.adductor to enter the nutrient foramen of the femur.

At the level of the distal third of the femur, the femoral artery detaches a stem vessel (1/8) for the descending genicular and saphenous arteries.

A.genus descendens:

The descending genicular artery (1/9) descends along the medial surface of M.adductor till it reaches the medial condyle of the femur where it divides into two branches. One of these branches anastomoses with twigs from A.femoralis and A.caudalis femoris distalis. The second branch pierces the capsule of the femoro-tibial articulation to supply the cruciate ligaments and the tibial spine.

A.Saphena:

The saphenous artery (1/10) descends between M.sartorius cranially and M.gracilis caudally to reach the middle of the tibia where it continues distally as R.caudalis. The latter artery (1/11) detaches a R.calcanoeus, R.malleolaris medialis, A.plantaris lateralis (1/12,13) and A.plantaris medialis (1/14) then continues distally in the foot.

A.caudales femoris:

The femoral artery detaches three caudal femoral arteries, namely the proximal, middle and distal. The proximal caudal femoral artery is given off the femoral artery just as it leaves the femoral canal. It courses between Mm.adductor and gracilis to terminate in M.semimembranosus. The middle caudal femoral artery is detached 1.5-2 cm distal to the proximal one and vascularizes Mm.adductor and gracilis, and terminate in M.semimembranosus.

The distal caudal femoral artery (1/19) is given off at the distal fourth of the femur. It descends between the lateral head of M.gastrocnemius laterally and M.adductor and semimembranosus medially. It detaches a double proximal branch then divides into a caudal and a distal branch. One of the proximal branches supplies Mm.vastus lateralis and intermedius while the second one supplies Mm.adductor, semimembranosus and the deep face of gluteobiceps. The caudal branch distributes in the distal part of M.gluteobiceps and terminates in M. semitendinosus. It detaches also a small twig to the poplital lymph node. The distal branch descends between the two heads of M.gastrocnemius then along its tendon till the distal third of the tibia where it anastomoses with a branch from the caudal branch of A.saphena. It detaches A.comitans n.tibialis which terminates at about the middle of the tibia by joining R.caudalis of A.saphena.

DISCUSSION

According to WILKENS and MUNSTER (1976), the deep femoral artery arises from the external iliac artery in
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all domestic animals, a case which is not found in Camel. However, the same authors added that the artery in dog and pig continues distally along the caudal surface of the femur similar to that found in camel. GHOSHAL and GETTY (1970); WILKENS and MÜNSTER (1976) as well as DALLMANN and McCULLE (1971) stated that the deep femoral artery gives off the pudendopreigastric trunk and the medial circumflex femoral artery in all domestic animals, while in camel, only the latter vessel is detached from the deep femoral artery.

The acetabular branch which is detached in camel from the obturator branch of A.profundus femoris, is detached in all domestic animals from the medial circumflex femoral artery as stated by WILKENS and MÜNSTER (1976).

The ascending branch of A.circumflexa femoris lateralis is found in camel as in other domestic animals except horse as stated by WILKENS and MÜNSTER (1976).

MORCOS (1955) described A.genus descendens in camel under the name A.genus medialis distalis. WILKENS and MÜNSTER (1976) stated that the A.genus descendens in dog originates separately and can also arises by a stem vessel together with A.saphena as the case present in camel.

DALLMANN and McCULLE (1971) as well as WILKENS and MÜNSTER (1976) stated that the cat and dog have a proximal, middle and distal caudal femoral arteries similar to that of camel, while the rest of domestic animals, according to the latter authors, have only the A.caudalis femoris distalis which divides into a caudal, proximal and distal branches. However, the same artery divides into an ascending and descending branch in pig (BICKHARDT, 1961 and KOCH, 1965); in ox and other animals (GHOSHAL and GETTY 1970); in sheep (FREYTAG, 1962); in goat (SALAMANCA and SCHWARZ, 1960) and in horse (ZIETZSCHMANN, 1943 and SCHWARZ and SCHRODER, 1964). Only DOBBERSTEIN and HOFFMANN (1964) stated that the A.caudalis femoris is absent in cattle.

REFERENCES


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