قســـــــم : التشريح والهستولوجيـــا ـ كلية الطب البيطرى ـ جامعة أسيوط.
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مسار وتوزيع الشريان الصافن فى الجمل وحيد الســـــــنام

حلمى بدوى ، أحمد قناوى ، أشـــرف صبحـــــــــى

ينبع الشريان الصافن من الشريان الفخذى ويكمل مساره عند منتصف القصبة تقريبا كفرع ذيلـــى لنفس الشريان حيث أن الفرع الامامى لنفس الشريان لا وجود له فى الجمل .

هذا وقد وجد أن الفرع الذيلى للشريان الصافن يعطى الشريان الاخمص الانسى الذى ينقسم بدوره الى فرع سطحى وآخر غائر كما أنه يعطى كل من الفرع السطحى والفرع الغائر للشريان الاخمصى الوحشى كل على حدة وهذه الحالة لاتوجد الا فى الجمل . ويغير كل من الفرع السطحى لكل مـــن الشريان الاخمصى الانسى والوحشى اسمه الى الشريان الاخمصى العام الخاص بالاصابع الثانـــــى والرابع بالترتيب عند الثلث القاصى من عظم مشط القدم الثالث والرابع.

اما الافرع الغائرة للشرايين الاخمصية الانسى والوحشى فأنها تتحد مع بعضها مكونة القـــوس الاخمصية الغائرة.

هذا ويغير الفرع الذيلى للشريان الصافن اسمه عند الثلث القاصى من عظم مشط القـــــدم الثالث والرابع الى الشريان الاخمصى العام الخاص بالاصبع الثالث بعد اتحاده مع كل من الشـــريان الاخمصى العام والخاص بالاصبع الثانى والخاص بالاصبع الرابع.

Dept. of Anatomy & Histology,
Faculty of Vet. Med., Assiut University,
Head of Dept. Dr. A. Hifny.

COURSE AND DISTRIBUTION OF A. SAPHENA IN THE ONE-HUMPED CAMEL (CAMELUS DROMEDARIUS)

(With One Figure)

By

H. BADAWI, A.K. AHMED and A.S.M. SABER

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SUMMARY

The division of the saphenous artery into a cranial and a caudal branch as it is found in the horse, does not take place in the camel. In this case, the camel is similar to the pig and other ruminants. However, the distal continuation of the caudal branch of the saphenous artery does not occur in other ruminants.

INTRODUCTION

The saphenous artery and its branches were examined and discussed in cat by BIEL (1960) and DALLMAN and McCLURE (1971); in dog by HERRMANN (1940) and MILLER, CHRISTENSEN and EVANS (1964); in pig by BICKHARDT (1961); in cattle by GHOSHAL and GETTY (1968 b, 1970); in sheep by FREYTAG (1962) and in goat by SALAMANCA and SCHWARZ (1960). Moreover, GHOSHAL (1975) and WILKENS and MUNSTER (1976) gave a comparative description about the arteries of the pelvic limb in domestic animals except camel. LESBRE (1903) gave a little about the saphenous artery in camel. Owing to the recent Nomenclature in the Vet. Anatomy, the results were discussed only with WILKENS and MUNSTER (1976).

MATERIAL and METHODS

The present study was carried out on 10 pelvic limbs of the one-humped camel (Camelus dromedarius) of both sexes and of different ages. The specimens were injected at first with 10% formalin and after two days with coloured latex. The Nomenclature adopted by Nomina Anatomica Veterinaria (1973) have been used in this study.

RESULTS

The saphenous artery originates from the femoral artery together with A.genus descendens at the level of the distal third of Os femoris. It descends between Mm.sartorius and gracilis, then continues parallel to the cranial border of the medial head of M. gastrocnemius. About the middle of the tibia,the saphenous artery continues its course as R.caudalis of A.saphena.

R. Caudalis:

The caudal branch of A.saphena (1/1) descends medial to its corresponding vein till it reaches the tibiotarsal articulation where it passes caudal to the Sustentaculum tali. It then continues distally medial to the flexor tendons to the distal third of Os metatarsale III et IV, where it receives Aa.digitales plantares communes II et IV (the continuation of Rr.superficiales of Aa.plantares medialis and lateralis). At this level, the caudal branch of A.saphena continues its distalward course caudal to the flexor tendons of the digits as A. digitalis plantaris communis III.

Along its course, the caudal branch of A.saphena detaches about four cutaneous branches to the skin of the hock and fetlock regions and a branch to the tendon sheath of the flexor tendons. In addition, it gives off the following branches:

R. Calcaneus:

The calcaneal branch (1/2) is detached at the level of the tuber calcanei. It gains the lateral aspect of the tuber where it shares in the formation of Rete calcanei together with branches from A.tibialis cranialis and an anastomotic branch from A.plantaris lateralis.

R.malleolaris medialis:

The medial malleolar branch is given off about 5-6cm proximal to the tibio-tarsal articulation. It courses medially to reach the plantar surface of the distal extremity of the tibia where it supplies the medial and lateral malleoli and the ligaments of the tibiotarsal articulation. It also anastomoses with a branch from A. tibialis cranialis.

A.plantaris lateralis:

The lateral plantar artery is represented by a R.profundus and a R.superficialis, each has a separate origin from the parent vessel The deep branch (1/3) is detached about 6-7 cm distal to the level of tuber calcanei. It descends along the lateral aspect of the calcaneus to reach the plantar surface of Os metatarsale III et IV. It passes between the latter bone and M.interosseus medius to join R.profundus of A.plantaris medialis and a branch from A.tarsea perforans proximalis to form Arcus plantaris profundus.

The superficial branch (1/4) is given off few millimeters either proximal or distal to the origin of A. plantaris medialis. In only two examined cases, it arose by a stem vessel with R.superficialis of A.plantaris medialis (1/7). It descends between the flexor tendons as A.digitalis plantaris communis IV. The latter ends by joining R.caudalis of A.saphena at the distal third of Os metatarsale III et IV.

A.plantaris medialis:

The medial planter artery (1/5) is detached at a level with the base of Os metatarsale III et IV and divides into R.profundus and R.superficialis.

The deep branch (1/6) courses between the plantar surface of Os metatarsale III et IV and M.interosseus medius to join R.profundus of A.plantaris lateralis and a branch from A.tarsea perforans proximals forming Arcus plantaris profundus.

The superficial branch (1/7) descends along the lateral surface of the deep flexor tendon as A.digitalis plantaris communis II till about the middle of Os metatarsale III et IV where it joins R.caudalis of A.saphena.

Arcus plantaris profundus:

The deep plantar arch (1/3 & 6) is formed by the union of Rr.profundi of both Aa.plantares medialis and lateralis and a branch from A.tarsea perforans proximalis. It lies at the proximal part of the plantar surface of Os metatarsale III et IV under cover of M.interosseus medius. From this arch,the well developed A.metatarsea plantaris III and the ill developed A.metatarsea plantaris IV are detached.

The third plantar metatarsal artery (1/8) descends along the plantar surface of Os metatarsale III et IV to which it detaches 2 nutrient arteries. At the distal thrid of the bone, it gives off A.metatarsea plantaris II and both of them end by joining te articular branches of A.interdigitalis.

The fourth plantar metatarsal artery (1/8") descends betwwen the plantar surface of the lateral border of Os metatarsale III et IV and V.metatarsea plantaris IV for about 5-7 cm before it fades out in the periostium.

DISCUSSION

The division of A.saphena into R.cranialis and R.caudalis as stated by WILKENS and MUNSTER (1976) in cat, dog and horse does not take place in camel, pig and ruminants.

The distal continuation of R.caudalis of A. saphena in camel is similar to that stated by WILKENS and MUNSTER (1976) in dog and pig. The before mentioned authers added that the caudal branch of the saphenous artery terminates in ruminants and horse by dividing into the medial and lateral plantar arteries.

According to WILKENS and MUNSTER (1976), the lateral plantar artery in pig, ruminants and horse divided into R.superficialis and R.profundus, while in cat and dog, the vessel continue its course as R.profundus without giving a superficial branch. However,the separate origin of the deep and supeficial branches of the lateral plantar artery, as found in camel, was not described in any other domestic animal.

The deep plantar arch in camel resembels that found in ruminants in which R.perforans proximalis III shares in its formation as desceibed by WILKENS and MUNSTER (1976). The before mentioned authers added that the deep plantar arch gives rise to either Aa.metatarsea plantares II-III in horse or II-IV in cat,dog,pig and ruminats. The latter arteries are well demonstrated in camel.

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LEGENDS

Fig. (1): Diagram showing the distribution of A.saphena, plantar aspect.

A- Tibia; B- Talus; C- Calcaneus; D- Os tarsi centrale;
E- Os tarsi III; F- Os tarsi IV; G- Os metatrsale III et IV; H- Phalanx proximalis;
I- Phalanx media; J- Phalanx distalis; K- Ossa sesamoidea proximalia.

1- R. caudalis of A. saphena; 2- R. calcaneus;
3- R. profundus of A. plantaris lateralis; 4- R. superficialis of A. plantaris lateralis;
5- A. plantaris medialis; 6- R. profundus of 5;
7- R. superficialis of 5; 3+6 Arcus plantaris profundus;
8- A. metatarsea plantaris II; 8' A. metatarsea plantaris III; 8'' A. metatarsea plantaris IV;
9- Nutrient arteries to Os metatarsale III et IV;
10-12- Aa. digitales plantares communis II-IV;
13- A. interdigitalis; 14- Aa. digitales plantares propriae III et IV axialis;
15- Aa. digitales plantares III et IV abaxialis;
16- Rr. plantares phalangis proximalis and media;
17- plexus terminalis 18- A. tarsea perforans proximalis;
18'-R. ascendens of 18; 18"-R. descendens of 18;
18"'-branch to Arcus plantaris profundus.

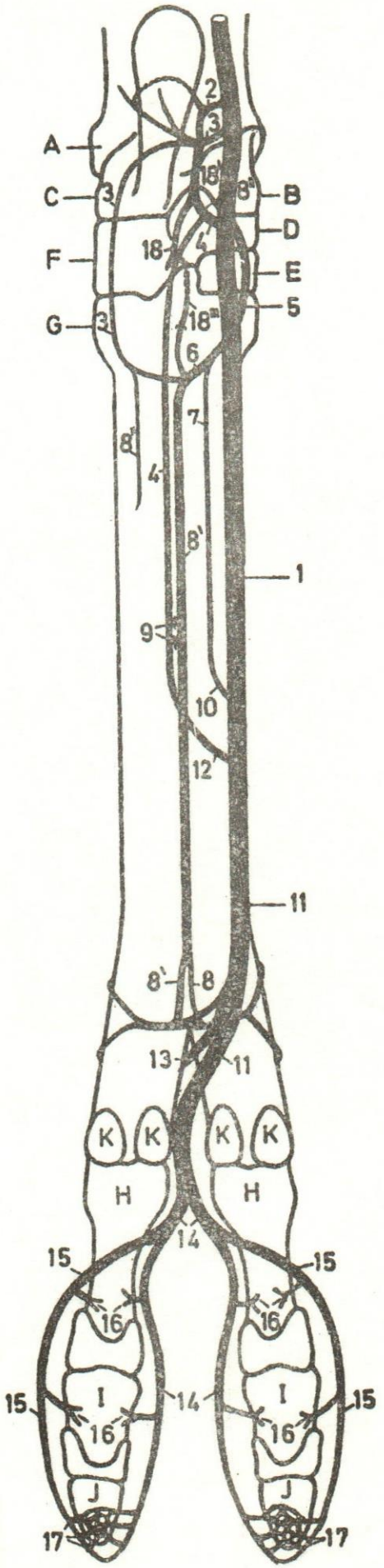

Fig. 1