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بعض الدراسات التشريحية على الشريان الصدرى الداخلى
فى الجمل وحيد السنم

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درس فى هذا البحث منشأ ومسار وفروع وكذلك نهاية الشريان الصدرى الداخلى
فى الجمل وحيد السنم ، ونوقشت نتائج هذا البحث مع بثلاثتها على
الحيوانات المستأنسة الاخرى .

SOME ANATOMICAL STUDIES ON THE INTERNAL THORACIC ARTERY
OF THE ONE HUMPED CAMEL (*CAMELUS DROMEDARIUS*)
(WITH ONE FIGURE)

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SUMMARY

The origin, course, branches and termination of the internal thoracic artery in the one-humped camel were carefully described. The vasculature of the sternal callosity (pad) which is found only in this species of animals was also completely described.

INTRODUCTION

The anatomical knowledge about the vasculature of the trunk in the one-humped camel is meagre. The aim of this study is to describe the blood supply of the ventral part of the thorax and the sternal callosity (pad). The obtained results were completely discussed with that of the other domestic animals.

MATERIAL AND METHODS

The present study was carried out on 7 adult and 2 full term feti of the one-humped camel (*Camelus dromedarius*) of both sexes and different ages. The animals were bled and injected through the common carotid arteries with 10% formalin solution, and after two days with red coloured gum milk (latex). The nomenclature used is that adopted by *Nomina Anatomica Veterinaria* (1973).

RESULTS AND DISCUSSION

The internal thoracic artery (1/3) is given off the ventral aspect of the subclavian artery at the level of the first intercostal space. Its origin in camel resembles that described by WILKENS and MUNSTER (1976) and SIMONES ET AL. (1979) in most domestic animals.

It descends subpleurally in a ventrocaudal direction forming a gentle curve till the level of the 3rd costal cartilage where it lies ventral to the transverse thoracic muscle. On reaching a level of the 7th costal cartilage, it pierces the sternal part of the diaphragm to continue caudally as the cranial epigastric artery a condition which is described GLAGOLEV (1969) in most animals. The internal thoracic artery detaches the following branches:

Rr. intercostales ventrales:

The segmental ventral intercostal branches (1/5) are given at each interchondral space, their number vary between V-VI. The first branch is a single vessel, while the rest are represented by a precostal and postcostal branches which originate either separately or together. The postcostal branch (1/5) is the larger and ascends subpleurally along the caudal border of the rib to join its corresponding dorsal intercostal artery. It sends fine twigs to supply the intercostal and rectus thoracis muscles, similar to that found in goat by OTTO (1961) and cattle by SELDLER (1966). The precostal branch (1/5') crosses its corresponding intercostal space ventrally to reach the cranial border of the following rib where it joins a collateral branch of the corresponding dorsal intercostal artery. Similar pre-and post costal branches are described by OPFIZ (1961) in cat, MARTHEN (1939) and MILLER ET AL., (1964) in dog and OTTO (1961) in goat.

Rr. perforantes:

The perforating branches (1/4) are given from the ventrolateral side of the internal thoracic artery. They vascularize the transverse thoracic muscle and emerge through their corresponding interchondral spaces

to supply the pectoral muscles and skin of the sternal region and anastomose with branches from the external thoracic artery. The 3rd, 4th and 5th perforating branches are represented by two vessels due to the presence of the sternal callosity or pad at this area. The presence of the before mentioned double branches was not mentioned by LESBRE (1903) in camel.

A. musculophrenica:

The musculophrenic artery (1/9) is given off the internal thoracic artery at a level with the caudal border of the sixth costal cartilage. In five examined cases it arose at the level of the 7th costal cartilage. According to WILKENS and MUNSTER (1976) the artery originates at the level of the 6th intercostal space in pig, 7th ruminants and 7th to 8th in carnivora and horse. It courses in a caudodorsal direction, pierces the costal part of the diaphragm at a level with the 7th costal cartilage. It continues subperitoneally on the inner surface of the costal arch to terminate in the transverse abdominal muscle opposite to the 8th rib or intercostal space. The musculophrenic artery detaches 3 muscular branches for the transverse abdominal muscle, in addition to the 6th and 7th ventral intercostal branches which divide into a pre- and postcostal branches. The latter unite with the corresponding dorsal intercostal arteries. The ventral intercostal branches are similar to that found in cat by MARTHEN (1939) in dog, BRADLEY (1947) in horse KAHLER (1960) and GHOSHOL (1975) in pig, OPTIZ (1961) and CROUCH (1969) and SEIDLER (1966) in cattle. MUNTER (1962) stated that all the ventral intercostal branches are detached in sheep from internal thoracic artery, while the musculophrenic artery supplies the diaphragm only.

Rr. phrenicae:

Two phrenic branches are detached either separately or by a stem vessel from the 7th ventral intercostal branch or from the musculophrenic artery. They ascend in the substance of the costal part of the diaphragm to end just ventral to its tendinous center. Similar branches are also described in goat by OTTO (1961), in sheep by MUNTER (1962) and in cattle by SELDLER (1966).

At the level of the caudal border of the 7th costal cartilage, the internal thoracic artery detaches a stem vessel for the pericardiophrenic and the cranial superficial arteries. It passes caudally under the transverse thoracic muscle and divides into the medial smaller pericardiophrenic artery and the lateral larger cranial superficial epigastric artery. A similar stem vessel was not described by LESBRE (1903) in camel or by WILKENS and MUNSTER (1976) in other domestic animals.

A. pericardiophrenica:

The pericardiophrenic artery (1/7) divides into a pericardiac branch (1/7) and a phrenic branch (1/7"). The former ascends along the caudal border of the sternopericardiac ligament and the pericardium supplying it and the fat situated along its caudal border. The phrenic branch courses on the thoracic surface of the sternal part of the diaphragm in a dorsal direction to end near the ventral aspect of the foramen for the caudal vena cava.

A. epigastrica cranialis superficialis:

The cranial superficial epigastric artery (1/8) passes caudalwards to gain the angle between the costal arch and the xiphoid process where it pierces the straight abdominal muscle to reach the skin of the sternal region. It detaches branches to the transverse thoracic and straight abdominal muscles, in addition to vessels to the caudolateral part of the sternal callosity or pad. Its branches anastomose with that of the cranial epigastric artery.

WILKENS and MUNSTER (1976) mentioned that the cranial superficial epigastric artery is present only in carnivores and ruminants.

A. epigastrica cranialis:

From the level of the caudal border of the 7th costal cartilage, the cranial epigastric artery (1/10) continues the direction of the internal thoracic artery. It courses caudalwards between the straight abdominal muscle and the aponeurosis of the transverse abdominal muscle. Dorsal to the 2nd tendinous intersection of the former muscle it divides into a medial and a lateral branch. The medial branch supplies the medial part of the

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straight abdominal muscle, while the lateral one vascularize the lateral part of the same muscle and the transverse abdominal muscle it also anastomoses with the 8th and 9th dorsal intercostal arteries. The cranial epigastric artery gives off medial and lateral collateral branches for the abdominal muscles and the skin of the ventral abdominal wall. An anastomosis between the cranial and caudal epigastric arteries as stated by WILKENS and MUNSTER (1976) in most domestic animals was not observed in the camel.

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LEGENDS

A 1st rib, b costal arch, c last rib, d sternal callosity (pad), e sternum.

1 superficial cervical artery, 2 axillary artery, 3 internal thoracic artery, 4 perforating branch, 5 ventral intercostal branch, 5' precostal branch, 5" post-costal branch, 6 stem vessel for: 7 pericardiacophrenic artery, 7' pericardiac branch, 7" phrenic branch and 8 cranial superficial epigastric artery, 9 musculophrenic artery, 10 cranial epigastric artery.

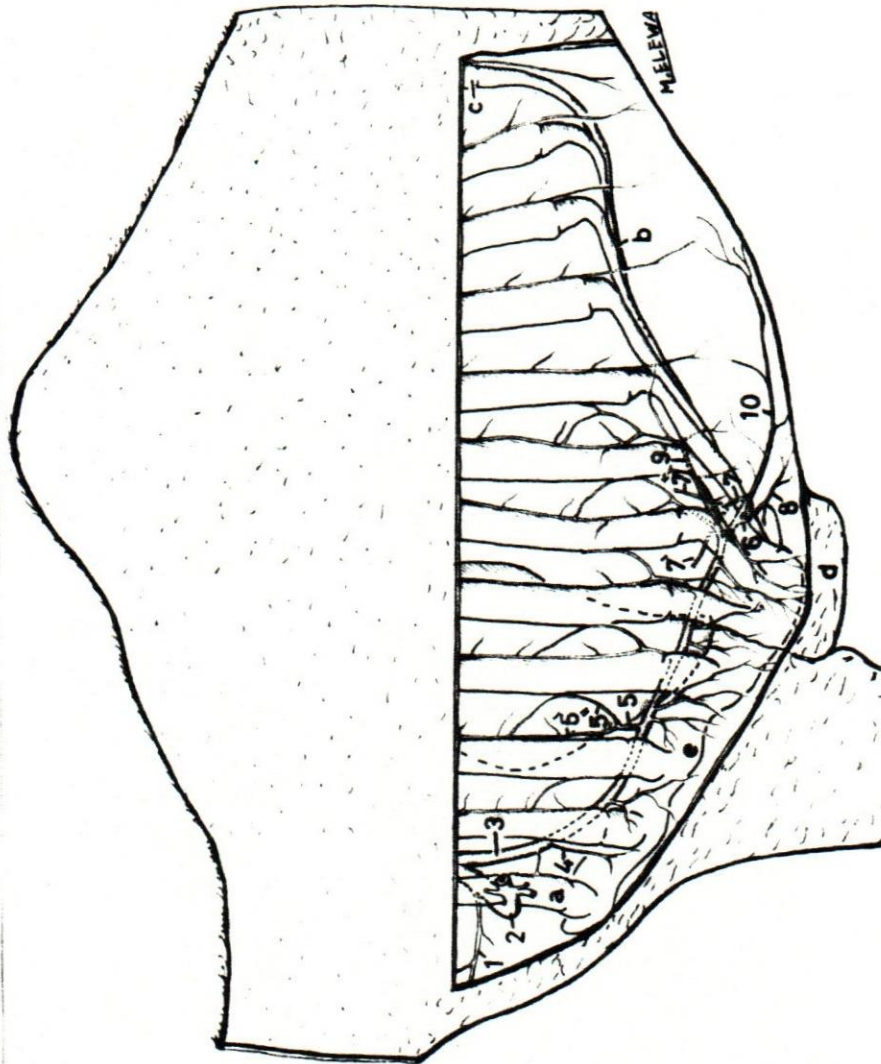


Fig. 1: Internal thoracic artery of the Camel, left side.