قسم التشريح - كلية الطب البيطرى - جامعة أسيوط.
رئيس القسم : دكتور/ عبد الله حفنى .

دراسة تشريحية على الوريد الوجهى الغائر فى الجمل وحيد السنام

عبد الله حفنى ، أحمد قناوى ، كمال هاشم

تم فى هذا البحث دراسة ومسار وفروع الوريد الوجهى الغائر للجمل وحيد السنام هذا وقد تم مقارنة هذا البحث مع ما كتب عن الوريد الغائر فى الحيوانات الأخرى .

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

ANATOMICAL STUDIES ON THE V. FACIEI PROFUNDA OF THE ONE HUMPED CAMEL (CAMELUS DROMEDARIUS)

(With One Figure)

By

A. HIFNY, A.K. AHMED and K.E. HASHIM

(Received at 1/9/1980)

SUMMARY

The origin, course and branches of the deep facial vein of the one humped camel have been carefully dissected and described. The differences between the deep facial vein in the camel and other domestic animals are completely discussed.

INTRODUCTION

In domestic animals, the deep facial vein originates from the facial vein as stated by WILKENS and MONSTER (1976). PREUSS (1954) stated that this vein is present in all animals except ox. HEESCHEN (1958) in sheep, SCHWARZ (1959) in goat, McLEOD (1958) and LEROUX (1959) in cattle described the deep facial vein under the name V. buccinatoria. BECKER (1960) reported that the deep facial vein in pig forms one of the two terminal divisions of the V. facialis communis.

The abovementioned authers described also the course, distribution and branches of the deep facial vein in different domestic animals.

The aim of this work is to study the origin,course and distribution of the deep facial vein in the one humped camel in comparison with that of other domestic animals.

MATERIAL AND METHODS

Ten heads of adult camels of the species Camelus dromedarius were used for this work. The heads were injected with coloured gum milk Latex through the right and left facial veins after ligation of both external jugular veins. The specimens were preserved in 10% formalin.

RESULTS AND DISCUSSIONS

The deep facial vein (10) originates separately in 65% of the examined cases from the V. facialis at the proximal part of the rostral border of the M. masseter. In the rest, it arose either with the V. glandulae buccalis or with the latter and the V. labialis mandibularis profunda.

The deep facial vein passes in a caudodorsal direction between the M. masseter laterally and the Pars molaris of the M. bucinator medially where it receives the Sinus buccalis (28) and detaches the V. palatina descendens. It continues dorsomedially in a vascular groove situated just lateral to the maxillary tuber to pierce the periorbita. Within the periorbita, it detaches 2-3 considrable branches which form the Plexus ophthalmicus. It then leaves the periorbita and passes in a rostral direction to enter the infraorbital canal as the V. infraorbitalis. The deep facial vein joins the V. transversa facie through two anastomotic branches.

The V. facialis profunda forms in cattle the Plexus. V. faciei profunda, while in the pig and horse it becomes ampulated to form the Sinus V; faciei profunda (WILKENS and MUNSTER, 1976). In camel a Plexus or Sinus V. faciei profunda were not demonstrated.

V. Palatina Descendens:

The descending palatine vein arises from the V. faciei profunda about 0.5 cm after the latter receives the Sinus buccalis. It passes in a caudomedial direction within the pterygopalatine fossa medial to the Corpus adiposum extraperiorbitale where it terminates by dividing into V. palatina major and V. sphenopalatina. According to

WILKRND and MUNSTER (1976), the descending palatine vein forms one of the end branches of the deep facial vein in all animals except pig. In such animal the vein is considered as one of the terminal branches of the maxillary vein.

V. Palatine Major:

The greater palatine vein passes in a rostroventral direction together with its homonymous artery and nerve till the level of the aboral palatine foramen. At this level, it runs separetely on the medial aspect of the tuber maxillare to reach the hard palate where it forms the palatine plexus with its fellow of the other side. The V. palatina major detaches the minor palatine vein which passes ventrally to terminante in the soft palate. Unlike that of the camel, the V. palatina mauor in the dog and other domestic animals is detached from the deep facial vein as stated by MILLER et al. (1964) and WILKENS and MUNSTER (1976). However, the last authers added that the greater palatine vein in the pig is given from the plexus pterygoideus while BECKER (1960) stated it arises from the V. buccinatoria in the same animal.

V. Shenopalatina:

The sphenopalatine vein is considered to be the direct continuation of the V. palatina descendens. It passes rostrally through the sphenopalatine foramen to gain the nasal cavity where it divides into several branches that share into the formation of the nasal plexus.

Plexus Ophthalmicus:

The ophthalmic plexus is formed mainly by 2-3 branches from the deep facial vein in addition to similar branches from the pterygoid plexus. BECKER (1960) stated that, the ophthalmic plexus in the pig is formed by the V. ophthalmica externa which originates from the deep facial vein. FRENZEL (1967) described the plexus in the cat to be formed by Vv. ophthalmica externa superior, faciei profunda and maxillaris, while RUMPLER (1967) mentioned that the same plexus in the dog was formed mainly by branches from the Vv. ophthalmicae superior and inferior as also stated by WILKENS and MUNSTER (1976). The ophthalmic plexus is situated between the periorbita ventrally and the occular muscles dorsally. It joins the cavernous sinus through the Foramen orbitorotundum. The connection between the Plexus ophthalmicus and the Sinus cavernosus is stated also in the pig by BECKER (1960) under the name V. cerebralis orbitalis and in the dog by RUMPLER (1967) under the name V. emissaria foramins rotundi.

The ophthalmic plexus detaches Rr. musculares et adiposae for the occular muscles and the Corpus adiposum intraorbitale, in addition to the following branches:

V. Ethmoidalis Externa:

The external ethmoidal vein arises from the medial wall of the Plexus ophthalmicus. It pierces the periorbita and continues dorsomedially to leave the orbita through the ethmoidal foramen to be distributed in the caudal part of the nasal cavity.

V. Ophthalmica Externa Dorsalis:

The dorsal external ophthalmic vein originates from the dorsomedial aspect of the Plexus ophthalmicus. It has a similar direction to piere the preceding vessel the periorbita to join the V. frontalis after its emergence from the supraorbital canal.

The V. ophthalmica externa dorsalis detaches 4-5 branches which pass in a caudodorsal direction to join the caudal continuation of the Plexus ophthalmicus and the branches of the V. ophthalmica externa venteralis.

The V. ophthalmica (superior) as stated by FRENZEL (1967) in the cat and RUMPLER (1967) in the dog forms the direct continuation of the V. angularis oculi, while the V. ophthalmica externa forms the direct continuation of the V. temporalis superficialis or a branch from it as mentioned by LE ROUX (1959) in cattle and SCHWARZ (1959) in goat.

V. Ophthalmica Externa Ventralis:

The ventral external ophthalmic vein is detached from the ventral aspect of the plexus ophthalmicus. It passes in a caudomedial direction ventral to the eye muscles then it divides into several branches which join the ophthalmic plexus and the V. ophthalmica externa dorsalis. This plexus extends caudally to surround the optic nerve before the latter enters the optic foramen.

V. FACIEI PROFUNDA, CAMEL

From the V. ophthalmica externa ventralis, the V. ophthalmica interna is detached. It passes at the ventromedial aspect of the optic nerve to enter the cranium through the optic formaen, where it joins the Sinus cavernosus.

Vv. Ciliares:

The ciliary veins are represented only by two twigs, a dorsal and a ventral one. Each originates from the corresponding aspect of the ophthalmic plexus, and pierces the sclera nearly at the equator to be distrbuted in the vascular tunic of the eye.

V. Supraorbitalis:

The supraorbital vein originates from the dorsolateral part of the Plexus ophthalmicus. Immediatly after its origin, it leaves the periorbita and passes in rostrodorsally to join the V. ophthalmica externa dorsalis before its connection with the V. frontalis.

V. Lacrimalis:

The lacramial vein arises from the ophthalmic plexus near the origin of the V. supraorbitalis. It passes in a dorsolaterally to reach the lacrimal gland, where it terminates after detaching fine conjuctival branches.

V. Malaris:

The malar vein arises by three roots from the ventral aspect of the plexus ophthalmicus. It drains the third eyelid through the V. palpehrae tertiae. In addition, it gives off 4-5 fine branches to the conjuctiva. The V. malaris receives a connecting branch from the V. infraorbitalis.

V. Infraorbitalis:

The infraorbital vein is the direct continuation of the deep faial vein. It pierces the periorbita and passes in a rostral direction to enter the infraorbital canal through the maxillary foramen in company with its homonymous artery and nerve.

It leaves the canal through the infraorbital foramen where it joins the V. labialis maxillaris profunda in 85% of cases, and in the rest, the vein joined both the before mentioned one and the V. facialis.

During its course within the canal the infraorbital vein detaches Rami dentales to the maxillary cheeck teeth.

The origin of the infraorbital vein in the camel is similar to that present in the dog (MILLER et al., 1964), pig (BECKER, 1960), horse (SISSON and GROSSMAN, 1968) and in most animals except cat (WILKENS and MONSTER, 1976). ACCORING to HEESCHEN (1958) in sheep, LE ROUX (1959) in cattle; the infraorbital vein arises from the V. buccinatoria, while SCHWARZ (1959) stated that in goat this vein is detached either from the V. sphenopalatina or the V. buccinatoria.

REFERENCES

Becker,H. (1960): Arterien and Venen am kopf Schweines. Hannover, Tierarztl. Hochsch, Diss. Med. Vet.

Frenzel,K. (1967): Venen am kopf der katze. Hannover, Tierarztl. Hochsch. Diss. Med. Vet.

Heeschen,W. (1958): Arterien und Venen am kopf der Schaf. Hannover, Tierarztl. Hochsch., Siss. Med. Vet.

Le Roux,J.M.W. (1959): Die Venen am kopf des Rindes. Hannover, Tierarztl. Hochsch., Diss. Med. Vet.

McLeod,W. (1958): Bovine anatomy. 2nd, ed. Burgess publishing Co-Minneapolis, Minnesota.

Miller,M.E., G.C. Christensen and Evans (1964): Anatomy of the dog. W.B.Saunders Company.Philadelphia. London.

Nomina Anatomica Veterinaria (1973): International Committee on Veterinary Anatomical Nomenclature. 2nd. ed. World Association of Vet. Anatomists, Vienna.

Preuss,F. (1954): Is there a vena reflexa. Tierarztl. Umsch., 9, 3886389.

Rumpler,G. (1967): Venen am kopf des Hunds. Hannover, Tierarztl. Hochsch. Diss. Med. Vet.

Schwarz,R. (1959): Arterien und Venen am kopf der Ziege. Hannover, Tierarztl. Hochsch., Diss. Med. Vet.

Sisson,S. and J.Grossman (1968): Anatomy of the domestic animals. W.B. Saunders Company. Philadelphia. London.

Wilkens,H. and W.Munster (1976): Arterien und Venen in: R. NICKEL, A. SCHUMER und E. SEIFERLE: Lehrbuch der Anatomic der Haustiere, Bd. 3. Verlag Paul Parey, Berlin-Hamburg.

Deep Dissection Of The Veins Of The Head Of The Camel, Left Sides.

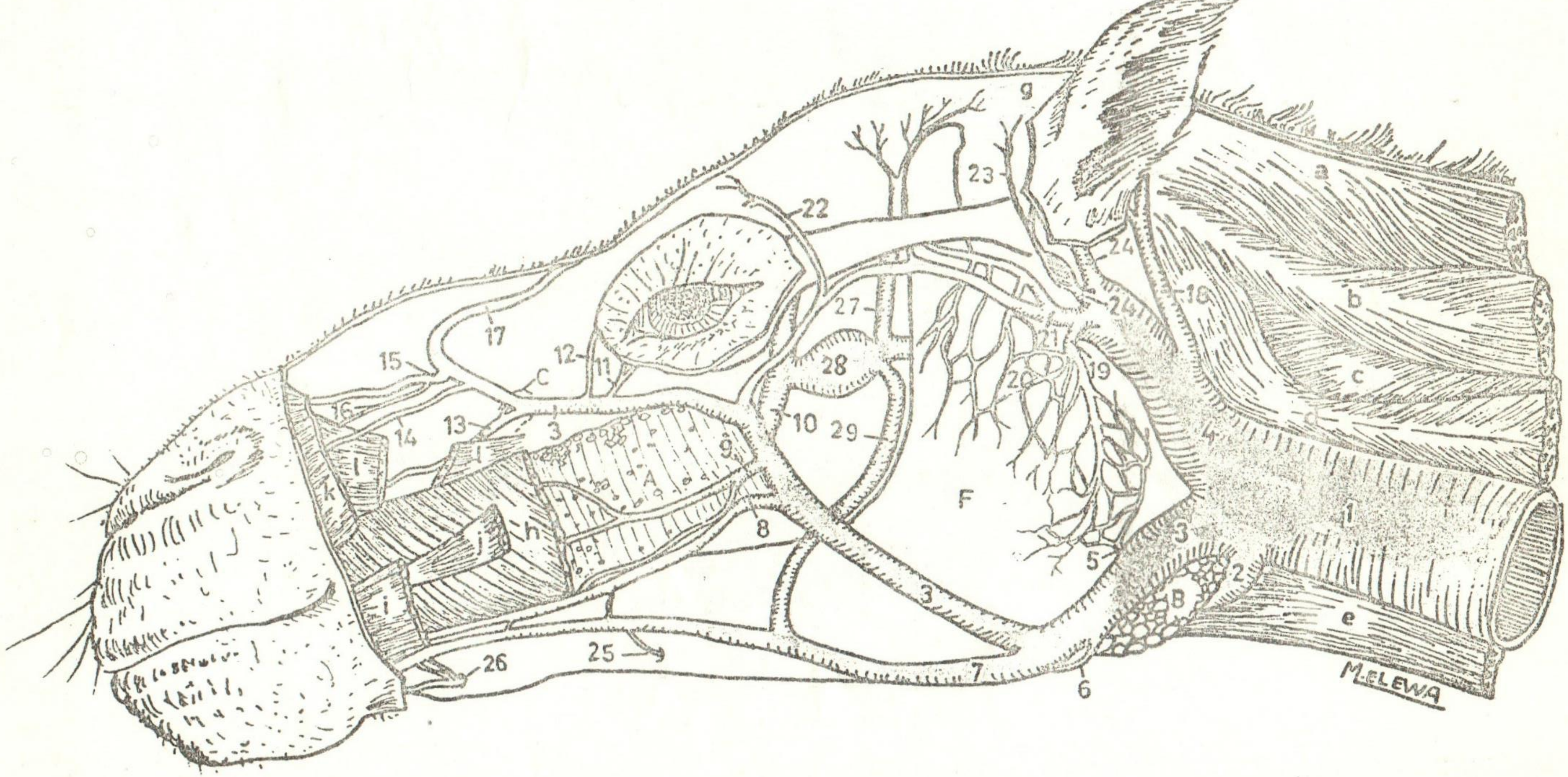
A- Gl. buccalis intermedia.

B- Lymphnod mandibularis.

C- Foramen infraorbitale

a- M. semispinalis capitis.
b- M. longissimus capitis.
c- M. obliquus capitis caudalis.
d- M. longissimus atlantis.
e- M. sternothyrohyoideus.
f- M. masseter.
g- M. temporalis.
h- M. burcinator.
i- M. cutaneus faciei.
k- M. levator nasolabialis.
l- M. caninus.

1- V. jugularis externa.
2- V. lingualis.
3- V. facialis.
4- V. maxillaris.
5- R. massetricus.
6- V. submentalis.
7- V. labialis mandibularis superficialis.
8- V. labialis mandibularis profunda.
9- V. glandulae buccalis.
10- V. faciei profunda.
11- V. palpebralis inferior medialis.
12- V. palpebralis superior medialis.
13- V. labialis maxillaris profunda.
14- V. labialis maxillaris superficialis.
15- V. dorsalis nasi.
16- V. lateralis nasi.
17- V. angularis oculi.
18- V. auricularis caudalis.
19- V. masseterica ventralis.
20- Plexus massetericus.
21- V. transversa faciei.
22- V. palpebralis superior lateralis.
23- V. temporalis superficialis.
24- V. emissaria foraminis retroarticularis.
25- V. mentalis caudalis.
26- V. mentalis rostralis.
27- V. temoralis profunda rostralis.
28- Sinus buccalis.
30- Anastomotic branch of the V. labialis mandibularis superficialis with the Sinus buccalis.



M.ELEWA