Online Journal of Animal and Feed Research

Volume 5, Issue 3: 74-77; Mar 25, 2015 ISSN 2228-7701

TOPOGRAPHIC CHARACTERISTICS OF THE LYMPH NODES OF THE DROMEDARY (*Camelus dromedarius)*

P. Gavrylin, D.E. Rahmoun, M. Lieshchova

Department of Normal and Pathological Anatomy of agricultural Animals, Faculty of Veterinary Medicine, Dnepropetrovsk State Agricultural and Economic University, Dnepropetrovsk, Ukraine
*Email: deddine44@hotmail.com

ABSTRACT*:* The architecture of the lymph node dromedary (Camelus dromedarius) differs from that shown in the conventional patterns of other mammalian animals, generally formed of a plurality of aggregates, the latter are surrounded by a connective tissue which extends over the whole area surface lymph node and each cluster is a node itself. Vascular distribution in these lymphoid aggregates is relatively abundant and each node receives one or two afferent lymphatic's and is drained by four or five efferent lymphatics. In approximately half of nodes examined, there was extra nodal communications between the lymphatic vessels (afferent and efferent), allowing to bypass the lymph node. Lymph nodes are characterized by their dromedary lobule appearance and size. This lobulated appearance is acquired with age. Indeed in a camel one day we noticed that although the lymph nodes are large, but rather the lobulation is not clear. All forms are possible was lymph nodes ovoid, flattened, elongated, notched, triangular or rounded in some cases.

Keywords: Lymph Nodes, Lymphoid Aggregates, Dromedary, Lobule.

ORIGINAL ARTICLE
pii: S222877011500012-5
Received 15 Apr. 2015
Accepted 15 May. 2015

INTRODUCTION

Dromedary lymph nodes are studied but often wrongly attributed in scientific journals. We used several different lymph nodes. Aspects of lymph nodes of the dromedary are discussed. The position of the lymph nodes camel is summarized and illustrated in anatomical charts explaining the position and precise topography of each unit. Studies have been conducted to investigate gross aspects, histological of lymph nodes in dromedaries Gahlot (1992), as was the lack of information on the precise anatomy and topography of the lymph nodes on this animal, we made a very advanced to know with certainty what the lymph node is composed of the dromedary and what is its anatomical structure study. According to the authors, it was found that the morphology and structure (Abdel-Magie (2012), and Osman (1988), lymph node dromedary has intermediate characters that take both the mammalian general that the special case of the pig. This animal is usually kept for meat and it is strongly believed that the detailed anatomical data should be made regarding lymph nodes that they play an important part of the defense mechanism of the body against the invasion of body foreigners (Saunders, 2013). In addition, these lymph nodes, this can be easily palpated in animals during the inspection of the meat. Studies have been conducted to investigate gross, histological aspects of lymph nodes in dromedaries, as was the lack of information about the anatomy and topography of the lymph nodes on this particular animal Barone (1976, 2012) and Cauvet (1925), we had a very advanced knowledge with certainty that the lymph node is composed of the camel and what is the study of the anatomical structure. According to the authors, it was found that the morphology and structure Heath (1986) and Kayouli (1995), lymph nodes dromedary intermediate characters who are both large mammal that the particular case of pigs.

MATERIAL AND METHODS

The present study is carried out in the southern part of Algeria; the location of the desired node was traversed by using a very accurate diagram of the anatomy of the namely animal anatomical topography accurate lymph nodes. The recognition of the location of the 10 lymph nodes, we have collected and studied at the abattoir and laboratory; 5 somatic: (the Parotid, submandibular, superficial cervical, axillary, popliteal) and 5 visceral: (medial retropharyngeal, caudal mediastinal, portal, jejunum).The measurement of the length and width of each lymph node is made after preparation of lymph node using a scalpel Pack of 5 HS No. 10A and the results are listed on Table and lymph nodes were identified by visual inspection of each image. The identification process is purely visual are: analysis of the size, shape, color, location and proximity of the surrounding structures has proven to be useful for the identification of particular lymph node (Heath, 1987). Observations obtained were compared with

To cite this paper: Gavrylin P., Rahmoun D.E., Lieshchova M. 2015. Topographic characteristics of the lymph nodes of the dromedary (*Camelus Dromedarius*). *Online J. Anim. Feed Res*., 5(3): 74-77.
Scienceline/Journal homepages: http://www.science-line.com/index/; http://www.ojafr.ir

lymph node to better reach a consensus of opinion that has been validated in general in relation to the anatomy atlas. The main characteristics of the majority of lymph nodes detected identified on the images. When the identification process is completed, each lymph node is defined by a contour with a marker and the distribution of the lymph nodes requires a detailed topography of the other organs of the dromedary Mukasa-Mugerwa (1985), which corresponds to a relation between the descriptions of the lymph nodes relative to adjacent organs. The greatest difficulty, however, is the construction of a model of the architecture of the whole lymph node good preparation of lymph node quote us have the details of all of the unit that may have this schema.

RESULTS AND DISCUSSION

The observations were compared to best reach a consensus of opinion that has been validated in general with reference to the atlas of anatomy. The main characteristics of the majority of lymph nodes detected, identified on the images (Table 1).

Table 1 - Number conglomerate form and color of the lymph nodes camel

Lymph nodes	Length of L.N. cm	Width of L.N. cm	Number of kongregate	Form	Color
Parotid	3	1	8	Flattened, elongated	Gray
Sub-mandibular	9	4	15	Ovoid	Light brown
The superficial cervical	9	2	11	Ovoid	Dark or light brown
Axillary	5	4	5	Ovoid, flattened	Gray
Popliteal	7	4	4	Elongate	Light brown
Medial retropharyngeal	35	6	4	Flattened, triangular	Pink or light brown.
Caudal mediastinal	35	21	13	Elongated, triangular	Light brown.
Portal	6	21	4	Ovoid	Pink
Jéjunal	3	2	5	Triangular	Light brown
Medial iliac	7	2	3	Elongated, notched	Light brown

Most lymph nodes are detected in accordance with the above characterization Junqueira (1986), and Saley (1986), either round, randomly shaped, and lymph nodes with sharp limits were also found, as shown in. In the dromedary, we noticed that the lymph node is surrounded by a fibrous capsule, consisting of collagen fiber, reticular fibers and some elastic fibers. Truss extends the fibrous capsule in the lobules and delimits the parenchyma of the node; these fibrous septae increasingly thin towards the center of the body and the support are the blood vessels and nerves Popesco (1962). The color is very variable, (pink, gray, black and pale brown). In the dromedary, the average is 131 lymph nodes divided into 34 groups of 25 and 9 inconstant constant.

On palpation confirmed that the occurrence of lymph node is dented rough to the touch, this consistency is due to its rich fibrous tissue. The fibrous tissue is very abundant not only in the capsule and the number of partitions. This fibrous zone is traversed by numerous blood and lymphatic vessels, an overview has given a clear picture of several regular nodes (mammalian deviation) and juxtaposed together in the same housing (Gui-Fang et al., 2000). The cortex is observable under the capsule with the follicles and germinal centers; but is also observed in the middle of the node, in contact partitions. Each unit shows the usual one node with its cortex and medulla available. Among somatic lymph nodes examined; we have the parotid lymph node; is constant and unique. There is flattened on one side to the other and measure an average of 3 cm in length by 1 cm wide (Figure 1). We have also observed the submandibular lymph node is located in the caudal angle of the mandible laterally to the region of the throat, cervico-facial under the platysma muscle. It is related to the ventral extremity of the parotid gland and responds to the ventral board of the facial vein. It is the surface, on its rear board and omohyoideus muscle, in connection with the sublingual vein; it is between 9 cm in length and 4 cm width (Figure 2).

The cervical lymph node superficial is unique and constant. It is a large oval lymph node and elongated measurement an average of 9 cm long and 2 cm wide. It is located along the cranial edge of the biceps muscle in the space formed by the biceps muscles and omo-transversarius neck. It is covered by the brachiocephalic muscle (Figure 3). As also we found that the axillary lymph node (Figure 4) is always constant, more or less flat almost circular shape. Its dimensions range from 4.5 cm of length to width of 4 cm. He stands up to the 30th ribs on the chest and serratus muscle below the axillary vein. Its deep surface is related to the large round muscle and the thoracodorsal artery.

The popliteal lymph node is unique and constant. It has an ovoid shape. It is located in the popliteal fossa, the gastrocnemius muscles of the leg to the point of greatest convexity of the muscle belly (Figure 5). The popliteal lymph node is, however, almost hidden by the thick elastic blade strengthens the tibial is fascia surface. This blade

To cite this paper: Gavrylin P., Rahmoun D.E., Lieshchova M. 2015. Topographic characteristics of the lymph nodes of the dromedary (*Camelus Dromedarius*). *Online J. Anim. Feed Res.*, 5(3): 74-77.
Scienceline/Journal homepages: http://www.science-line.com/index/; http://www.ojafr.ir

extends from the ischia tuberosity to the calcaneus. The node responds to the dorsal edge of the gastrocnemius muscle and caudal edges of the semitendinosus and biceps femoris, it measures 7cm in length and 4 cm wide.

Figure 1 - Parotid lymph nodes.

Figure 2 - Submandibular lymph nodes.

Figure 3 - Cervical lymph nodes.

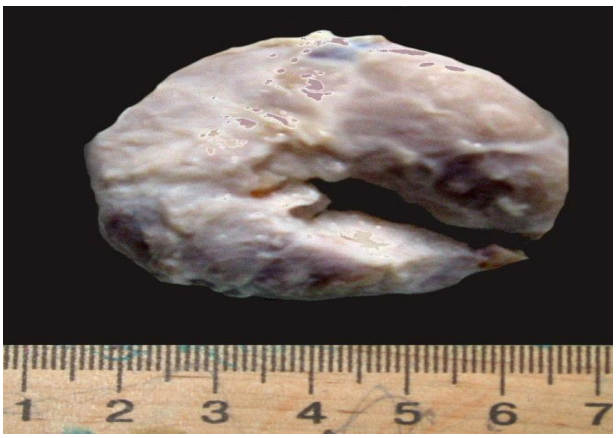

Figure 4 - Axillary lymph nodes.

Figure 5 - Popliteal lymph nodes.

For visceral lymph nodes studied were selected the retro pharyngeal lymph node is a bulky lymph node dug by a gutter which houses the common carotid artery. It is based on the common carotid artery. It is related to the surface with the mandibular gland and dorsally with occipital artery, it is between 7 cm in length and width of 6 cm. caudal mediastinal lymph node is always constant and united. This is an enlarged lymph node measuring 35 cm in length 21cm wide. It has the shape of a curvilinear triangle. It is located far back in the caudal mediastinum after passing through the esophagus into the hiatus. It is placed lateral-dorsally on the esophagus, along the ventral edge of the abdominal aorta and based in part on the central portion fleshy pillars of the diaphragm. This extends the ganglion 10th thoracic vertebrae of the vertebral body to the level of the first lumbar vertebra. The hepatic portal

To cite this paper: Gavrylin P., Rahmoun D.E., Lieshchova M. 2015. Topographic characteristics of the lymph nodes of the dromedary (*Camelus Dromedarius*). *Online J. Anim. Feed Res.*, 5(3): 74-77.
Scienceline/Journal homepages: http://www.science-line.com/index/; http://www.ojafr.ir

lymph node is elongated and has 4 lobes. They are constant and their size varies from 6 cm length 2 cm wide. Own liver lymph nodes are located in the attachment of the lesser omentum in the portal fissure and against the portal vein. They are partly hidden by the pancreas. So the further jejunum lymph node is smaller, located along the spiral colon. They throw themselves into the para-aortic lymph nodes. It measure 3 cm in length and 2 cm wide. The medial iliac lymph nodes are not large. They are irregularly shaped and formed an indentation where the external iliac artery passes. It was noted that it is located in the angle formed by the external iliac and the internal iliac artery. Most of these nodes are based on the small psoas muscle. It measure 6 cm in length and 4 cm in width.

CONCLUSION

Macroscopically, the lymph nodes of the dromedary congregate; they are partially fused, structural-functional units (small units) without evidence of the specific attitude. The architecture is formed of a plurality of aggregates, the latter are surrounded by a connective tissue which covers the entire surface of the lymph node is a cluster and each node lymphatic itself. For after our research can have that lymph node dromedary with its structure is similar to all mammals and specially the pigs.

Acknowledgements

The authors wish to thank the abattoir to Ouargla, in southern Algeria for the support and assistance, also the scientific research center of bio-safety and environmental control of agro-industrial complex Dnepropetrovsk state agrarian university for the assistance.

REFERENCES

Abdel-Magied EM, Taha AAM and Al-Qarawi AA. (2012). The parotid, mandibular and lateral retropharyngeal lymph nodes of the camel (Camelus dromedarius). Anat. Histol. Embryol., 30: 199 -203.

Barone R. (1976). Anatomie comparée des mammifères domestiques. R. Barone. Tome III: splanchnologie. Tome 1: appareil digestif, appareil respiratoire. Lyon, ENV, Laboratoire d'anatomie, p. 879.

Barone R. (2012). Anatomie comparée des mammifères domestiques /R. Barone. Angiologie Tome 5 (2eme Edition): VIGOT. P. 152—236.

Cauvet C. (1925). Le chameau. Anatomie, physiologie, race extérieur, vie et moeurs, élevage, alimentation, maladies, rôle économique. Tome I., pp. 784. J. B. Baillere et fils ed. Paris.

Kayouli C, Jouany J.P, Dardillat C and Tisserand J.L. (1995). Particularités physiologiques du dromadaire: conséquences Pour son alimentation. Options Méditerranéennes. Pp. 143-155.

Gahlot TK, Gahlot AS and Saber, S.K (1992). Anatomy and Histology of Camels Ed. T.K... Nagpal and Jianlin Wang.

Gui-Fang B, Dugarsuren B, Erdemtu D and Manglai Y. (2000). On the morphology of the liver in the two humped camel (Camelius bactrianus), /H. Endo, C. Anat. Histol. Embryol. 29: 243—246.

Heath TJ. (1987). Pathways of lymph flow to and from the medulla of lymph nodes in sheep. T. J. Heath, H. J. Spalding. Journal of Anatomy. 155: 177-188.

Heath TJ. (1986). Afferent pathways of lymph flow within the popliteal node in sheep / T. J. Heath, R. L. Kerlin, Spalding HJ. Journal of Anatomy. 149: 65-75.

Junqueira L, Carneiro J and Long J. (1986). Basic of Histology. A text book Libraries du Liban. 5th ed. Nopajaroosri, C; Luch, S. C. and Simon.

Mukasa-Mugerwa E. (1985). Le chameau (Camelus dromedarius): etude bibliographique. ILRI (aka ILCA and ILRAD), p. 111.

Osman DI. (1988). Morphological observations on the supramammary lymph node of the dromedary camel. D.I. Osman J. Vet. Sci. Anim. Husbandry. 27: 38-53.

Popesco P. (1962). Atlas d'Anatomie topographique des mammifères domestiques /Popesco P. Vanders Ed. Paris.

Saley M. (1986). Topographie ganglionnaire et inspection des carcasses de dromadaire (Camelus dromedarius) au Niger. These de Doct. Vet. №15, EISMV /Saley M. Dakar, Senegal.

Saunders C. (2013). Memo-fiches anatomie vétérinaire - Thorax et abdomen Chien - Chat - Cheval Vache. C Saunders ELSEVIER. MASSON. 15p.