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ORIGINAL ARTICLES

Pathological Study of Cattle Lymph Nodes

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ABSTRACT

Lymph nodes are very importance organs of body for distinguish of some disease. The present study was undertaken to elucidate the gross and histopathological lesions of abnormal lymph nodes of slaughtered cattle. A total number of 1200 lymph nodes of cattle irrespective of breed, sex and age were examined from different slaughtered houses in Tabriz areas, only 189 exhibited gross changes. Gross examination shows which maximum and minimum of lesions was in Bronchial and Retropharyngeal lymph nodes respectively. From histopathological findings Enlarged and Caseated were maximum and minimum of lesions in these lymph nodes respectively. Also In histopathological maximum of lesions in Bronchial lymph nodes with 49 numbers were observed.

Key words: lymph nodes, cattle, pathological study.

Introduction

Lymph nodes are part of the lymphatic system, which carries waste products and other materials away from the cells in body. These materials are carried to the lymph nodes in a colorless fluid called lymph. Lymph nodes filter this fluid before it returns to the blood stream. Lymph nodes also store white blood cells (called *lymphocytes*) that help fight infection. Pathological studies of lymph nodes are of paramount importance while giving diagnosis of certain diseases. Perusal of available literature revealed meager information, hence present communication Reports the gross, and microscopic lesions of different regional lymph nodes of indigenous cattle and their etiological relationship. This study is the first report in Iran.

Material and methods

Lymph nodes from cattle were collected from the slaughter houses which were located Tabriz area (center of East Azerbaijan province). Seven different regional lymph nodes (Retropharyngeal, Mesenteric, Supramammary, Bronchial, Portal, Prescapular and Internal iliac) were selected for the investigation during the period of October, 2010 to September, 2010. The lymph nodes exhibiting any gross pathological lesions were cut into two halves by a sharp sterile knife. One half of each lymph node was put into 10% neutral buffered formalin and processed routinely for histopathological examination. In this study for samples staining from Hemotoxylin and eosin were used.

Results and Discussion

All results of this study consist of gross examination and microscopic examination in following tables has been shown.

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Table 1: Result of gross examination of cattle lymph nodes.

Regional lymph nodes	Number	%
Retropharyngeal	20	10.92
Mesenteric	32	16.93
Supramammary	23	12.56
Bronchial	37	19.57
Portal	29	15.34
Prescapular	26	13.75
Internal iliac	22	12.02
Total	189	100

Table 2: Frequency of different types of pathological lesions in different regional lymph nodes in cattle

-	Enlarged	Haemorrhagic	Pigmented	Caseated	Eosinophilic lymphadenitis	Total
Retropharyngeal	11	8	-	9	-	28
Mesenteric	14	11	8	-	-	33
Supramammary	14	8	3	-	-	5
Bronchial	15	6	18	6	4	49
Portal	15	13	-	-	15	43
Prescapular	18	11	3	-	-	33
Internal iliac	16	13	1	-	-	30
Total	103	70	33	15	19	-

Among 1200 lymph nodes of cattle examined for any gross pathological lesions, only 189 were found to be abnormal. According to results of gross examination lesions in Bronchial, Mesenteric, Portal, Prescapular, Supramammary, Internal iliac and Retropharyngeal respectively with 19.57, 16.93, 15.34, 13.75, 12.56, 12.02 and 10.92 were distinguished. In fact in gross examination maximum lesions in Bronchial lymph nodes were observed. By attention to results of microscopic findings enlarged lymph nodes were found with highest frequency because this type of alteration was the earliest finding of any type of antigenic stimulation.

Study on lesions of lymph nodes of cattle or sheeps is very rare and our present article is very similar to one study by Maity and et al. Maity et al. in 2000 on slaughtered cattle of Calcutta and Rural areas worked on Prescapular, Supramammary, Bronchial and Mesenteric and maximum of lesions in Mesenteric lymph nodes and Minimum of lesions in lymph nodes belong to prescapular lymph nodes were reported (4). Grossly, enlarged lymph nodes were found to be edematous, turgid, somewhat soft and cut surface buldged slightly. Most of lymph nodes were pale in color. Histopathologically, enlarged lymph nodes usually showed a reactive follicular hyperplasia. The lymphoid follicles were increased in number and size. Haemorrhagic lymph nodes were also swollen, dark red or bright red in color. Hyperemia was a constant feature. The cut surface of the nodes were deep red or bright red in colour. Histopathologically, haemorrhagic lymph nodes showed large number of erythrocytes in lymph sinuses. Congestion and extravasation of erythrocytes were found in some vessels. Large numbers of erythrocytes were found in the lymph sinuses of the lymph nodes. The gross and histopathological features of haemorrhagic lymph nodes were in accordance with the earliest findings (1, 2, and 3). Caseated lymph nodes were enlarged, hard in consistency, indurated and contained greyish-white caseous mass. Sections of the few lymph nodes showed presence of calcified mass which were surrounded by fibrous capsules. Microscopically, caseated lymph nodes depicted early caseation intermingled with lymphoblasts and lymphocytes. Presence of macrophages, epithelioid cells and langhans type of giant cells were predominantly found. The epithelioid and giant cells were the products of reticuloendothelial cell proliferation suggesting the phagocytic activity against the foreign bodies, lesions of the caseated lymph nodes corroborated with the earlier reports (3, 5, and 6). Pigmented lymph nodes were dark black or brown in colour, dry and hard in consistency. The cut sections showed a black center of varying shape surrounded by a lighter zone. Histopathologically, the Pigmented lymph nodes revealed the presence of pigments confined to the trabeculae of medullary part, in the form of black grains in the cytoplasm of enlarged reticular cells. These lesions were in accordance with the earlier descriptions (2, 5). In present study the most type of pigmentation in lymph nodes was of Anthracosis and hemosiderosis. In cases of Eosinophilic lymphadenitis mononuclear cells and eosinophil were observed. In end must say this study is first report in, in fact as base for other studies in present region for determine the agents of these lesions.

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