

Histological and Immunohistochemical Study on Iberian Red Deer (*Cervus elaphus hispanicus*) Haemal Nodes

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Haemal nodes are capsulated, lymphoid organs with haemal circulation. Their parenchyma is distributed in primary and secondary lymphatic nodes in the cortical and medullar zones. In these zones the lymphatic tissue may adopt a cord-like shape and it is composed by plasma cell, macrophages and B and T lymphocytes. Blood circulates through the sinuses situated underneath the capsule, around the trabeculae and in the marrow (Figs. 1, 2) [1, 2].

On the other hand, they are independent organs only found in bovines and ovines, both ruminants [3]. In this work we described the haemal nodes of Iberian red deer, another ruminant, and the result showed that they are very similar to the bovine and ovine haemal nodes previously described. In the cervine haemal nodes we have found megakaryocytes situated in the parenchyma and in contact with blood vessels. We have also detected them by using scanning electron microscopy (Fig. 3). The presence of megakaryocytes in bovine haemal nodes has been previously reported [4].

An indirect immunohistochemical technique over 3-4 µm thick sections of the cervine haemal nodes, on xylanized slides, was performed. The primary antibody was a polyclonal antibody anti-CD3 diluted to 1/5, incubated for 2 hours in damp-chamber at room temperature. As secondary antibody, a polymer of EnVision+™ peroxidase conjugated and incubated 30 min. at room temperature was used. The immunostained samples were revealed with diaminobenzidine and contrasted with haematoxylin (Fig. 4).

Figure 4 shows lymphocytes T positives to antibody anti-CD3 in the paracortex of a cervine haemal node. Lymphoid circulant cellular elements and hemosiderin were also observed (Fig. 5).

Erythrophagocytosis in cervine haemal nodes was demonstrated precisely by the presence of hemosiderin. This situation has been previously reported in bovines [4].

In a preliminary conclusion, these organs may have, in the cervine, a similar functional role as they have in other ruminants. They may be involved in the destruction and replacement of old degenerated red cells and platelets. These organs behave immunologically as the normal lymphatic nodes and as the spleen as [5] have suggested. More investigations are necessary to elucidate these and another questions.

References

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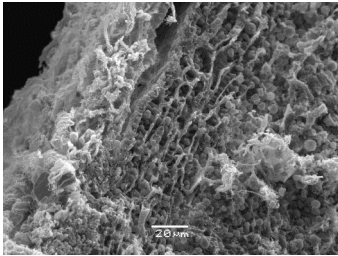


Figure 1. SEM.

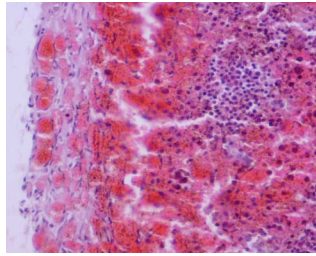


Figure 2. H-E.

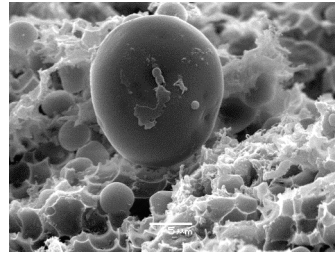


Figure 3. SEM.

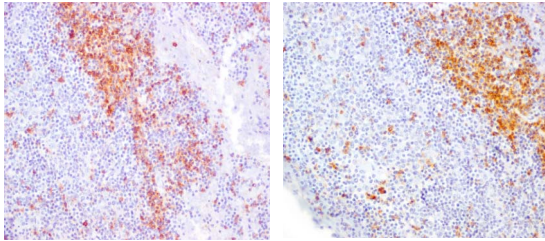


Figure 4. IHQ. Approximate magnification x400.

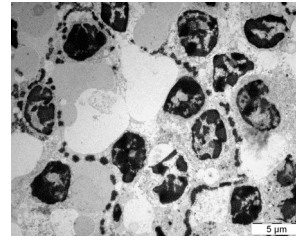


Figure 5. TEM.

SEM, Scanning Electron Microscopy; H-E, Hematoxylin-Eosin staining; IHQ, Immuno-Histo-Chemical staining; TEM, Transmission Electron Microscopy.