An unusually rich occurence of globule leukocytes in the bileducts of a roedeer (*Capreolus capreolus* L).

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A liver from a roedeer (male, approximately 6–7 months old, killed by a hunter) was submitted to the department of pathology, the National Veterinary Institute, Uppsala.

In the liver, on surface and cutsurface, were present several small rounded, 1–2 mm, discrete, whitish, foci.

Histopathology revealed these foci to be a chronic cholangiohepatitis characterized by a marked increase of the connective tissue surrounding the bile ducts. The connective tissue was infiltrated with a moderate amount of mononuclear cells, some few neutrophils, mainly eosinophils and occasional mast cells. The bile ducts were not dilated but had a thickened epithelium. Parasites were not found neither by means of histopathology nor by means of parasitological methods.

In the epithelium of affected bileducts was foand a considerable number of globule leukocytes (Fig. 1).

The identification of the globule leucocytes was confirmed by the use of staining methods according to Rahko and Nikander (1990 a) and by electron microscopy (Rahko 1971), Nikander & Rahko, 1990). The globules of each individual cell were numerous and of varying size, electrondensity and shape (Fig. 1).

Globule leucocytes occur only in the epithelium of mucous membranes and their function is not clear (Nikander & Rahko,1990). They, however, are considered to be associated with the immune response to parasitic infections, taking part in the «self-sure» phenomena in a large variety of animals; mammals, birds and fish (Nikander, 1991).

The connection with a «self-cure» state seems to be the situation in this case as no parasites were found.

In most animals globule leucocytes form a very small proportion of the cells of the epithelium, 1–2 per 1000 (Nikander, in press). Experimentally it has been possible to increase the number to approximately 5% of the epithelial cell population (Cantin & Veilleux 1972).

In reindeer, however, the number of globule leucocytes may be quite numerous (Rahko & Nikander, 1990 b, Rehbinder unpublished observations), but the estimated number, more than 1/3:rd of the epithelial cell population, as seen in most affected bile ducts of this roedeer liver (Fig 1) seems not to have been earlier reported.

As both roedeer and reindeer are cervidae, it is possible that deer are more prone than other animals to respond to parasitic infections with a marked proliferation of globule leucocytes. However, concerning other cervidae there seems to be no reports available on the presence of globule leucocytes.

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References

Cantin, M. and **Veilleux, R.,** 1972. Globule leucocytes and mast cells of urinary tract of magnesium-deficient rats. A cytochemical and electron microscopic study. - *Lab. Invest.,* 27: 495 - 506.

Nikander, S. and **Rahko, T.,** 1990. Ultrastructure of granulated cells in the bile duct of reindeer. - *Rangifer,* Special Issue No. 3: 363 - 367.

Nikander, S., 1991. Origin, morphology, histochemistry and function of the mucosal mast cell and the globule leucocyte. A review. - *Rangifer,* 11(1): xx - xx.

Rahko, T., 1971. Studies on the pathology of bovine and murine liver infected with *Fasciola hepatica* with reference to the mast cell and globule leucocyte. - *Ann. Acad. Sci. Fenn. Series A., V. Medica* No 184, 62 pp.

Rahko, T. and **Nikander, S.,** 1990 a. Histochemical studies of the common bile duct in reindeer. - *Rangifer,* 10 (1): 9 - 15.

Rahko, T. and **Nikander, S.,** 1990 b. Macroscopical and microscopical studies of the common bile duct in reindeer (*Rangifer tarandus tarandus* L). - *Rangifer,* 10(1): 9 - 15.

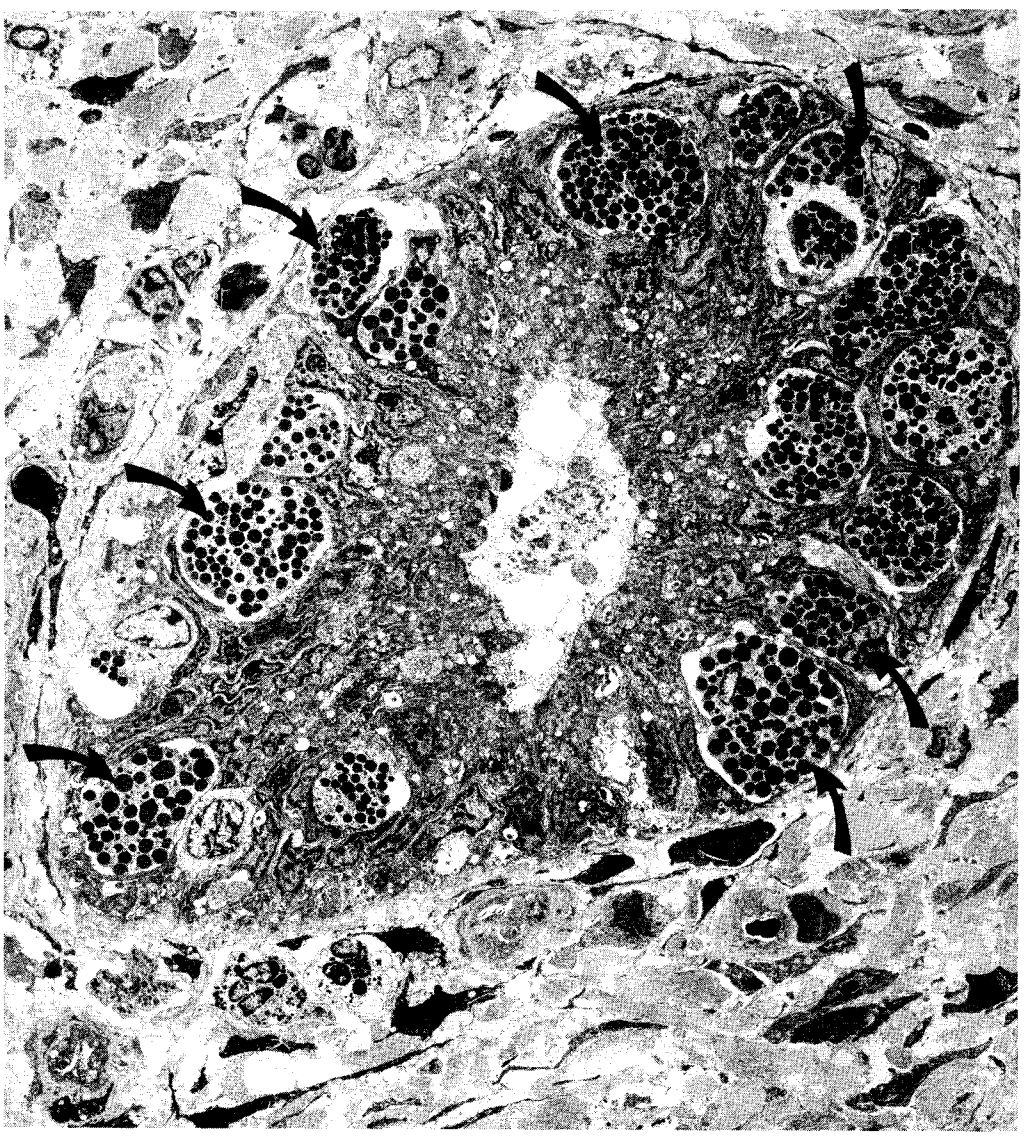

Fig. 1. Bile duct in liver from roedeer. Note, in the epithelium, the large globule leucocytes (arrows) with pleiomorph globules. Electron micrograph x 1200.