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INFORMATION

Hokkaido University confered the degree of Bachelor of Veterinary Medicine to the following 43 graduates of the School of Veterinary Medicine on March 25, 1999.

The authors summaries of their theses are as follows:

Morphological characteristics of cryptopatch as a proliferating nest for intraepithelial lymphocytes

Yuko Ito

Laboratory of Anatomy,
Department of Biomedical Sciences,
School of Veterinary Medicine,
Hokkaido University, Sapporo 060–0818, Japan

The intestinal epithelium is rich in T lymphocytes (intraepithelial lymphocytes, IELs). They differentiate thymus-independently but their origin is unknown. On the other hand, small infiltrations of lymphocytes exist throughout the intestinal mucosa and are reputed to be precursor forms of lymphoid follicles or small inflammatory nests caused by invasion of antigens. Recently, these small lymphoid colonies, termed cryptopatches (CPs), have been shown to be composed of c-kit-positive lymphocytes [Kanamori et al. 1996], suggesting that CP is a proliferating nest of IELs [Saito et al. 1998]. The present study aims to elucidate morphological characteristics of CPs and relationship with IELs.

CPs were regularly distributed throughout the intestinal mucosa in the mouse. Typical CPs were small, 100～500 μm in diameter, and essentially localized in the lamina propria among crypts. An immunohistochemical analysis confirmed that numerous CP cells are c-kit-positive and that a small number of CD3- positive lymphocytes occur at the peripheral region of CPs. It was also shown that a large number of CD3-positive lymphocytes gathered within the epithelium adjacent to CPs. Electron microscopy demonstrated that a major population of CP cells are small lymphocytes and intermingled with macrophages, reticular cells and blood capillaries. Thus, it was suggested that CPs with constant distribution and cell-composition are not involved in a inflammatory event. Ultrastructurally, numerous IELs were present in the epithelium adjacent to CP, some of them crossing the basement membrane, possibly from the CP to the epithelium. Scanning electron microscopy of epithelium-detached specimens demonstrated that the basement membrane covering CPs has many holes, but no such holes occur in the other regions.

In addition to a definite finding by Ishikawa's group that in IEL-deficient mice the number of IELs was recovered by transplantation of c-kit-positive cells derived from CPs, the present morphological findings suggested that IELs may proliferate in CPs and migrate directly into the adjacent epithelium.