

細胞質内免疫グロブリンGを伴う豚のリンパ形質細胞性リンパ腫

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著者	中島, 弘美 橋本, 夏美 門田, 耕一
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Lymphoplasmacytic Lymphoma with Cytoplasmic Immunoglobulin-G in a Pig

Hiromi NAKAJIMA, Natsumi HASHIMOTO¹⁾, and Koichi KADOTA²⁾

Kennan Meat Inspection Office, Prefecture of Ibaraki, 2-7-38 Shimotakatsu, Tsuchiura 300, ¹⁾Kumagaya Substation, Meat Inspection Office, Prefecture of Saitama, 179-1 Shimomasudamichimatsu, Kumagaya 360, and ²⁾National Institute of Animal Health, 3-1-1 Kannondai, Tsukuba 305, Japan

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Lymphoplasmacytic lymphoma is a neoplasm characterized by malignant growths of both lymphoid and plasmacytoid cells. We have observed a swine lymphoma composed of large lymphoid and plasmacytoid cells and the latter had cytoplasmic immunoglobulin-G (CIgG) [3]. Human lymphoplasmacytic lymphomas are divided into three subtypes and require small neoplastic cells in any subtype [5]. In this paper we describe a case of swine lymphoplasmacytic lymphoma with various sized neoplastic cells. Such a cell type has not been recorded previously in swine lymphoma and an investigation of the lymphoma-type may be useful in studying B-cell differentiation.

A 6-month-old crossbred hog was brought to an abattoir as an apparently healthy animal. At necropsy the spleen and abdominal lymph nodes were enlarged and the liver had an accentuated lobular pattern. Tiny nodules were scattered in the kidneys. Tissues were fixed in 10% formalin, processed and embedded in paraffin wax, and sections were stained with haematoxylin and eosin (HE), Giemsa and periodic acid-Schiff (PAS). For demonstration of CIg selected sections were stained by the peroxidase antiperoxidase (PAP) method of Taylor [9] using the anti-sera described previously [2].

Microscopically, original architecture of the most abdominal lymph nodes was effaced by the neoplastic cells except for slightly invaded capsules. Scattering of macrophages were common in these neoplastic tissues. The red pulp was almost completely replaced by the neoplastic tissue, but the white pulp remained. Neoplastic involvement was severe in the interlobular connective tissue of the liver, though was mild in sinusoids and around centrilobular veins. Slight infiltrates were found in the kidneys, adrenal glands and thyroid glands. Some blood vessels in the affected organs contained many neoplastic

cells. Although the bone marrow could not be examined, there were severe extramedullary haematopoiesis in the liver and spleen and slight erythropoiesis in other involved organs. Haemorrhages were frequently seen.

The neoplastic cells were characterized by an admixture of lymphoid and plasmacytoid cells. These cells were variable in size and appearance except that the nuclei were generally round or oval with moderately clumped chromatin (Figs 1, 2). Small lymphoid cells had small nucleoli and an extremely scanty cytoplasm, and large lymphoid cells possessed moderately prominent nucleoli and small to moderate amounts of cytoplasm. Small to large plasmacytoid cells with a relatively broad, basophilic cytoplasm contained CIgG (Fig. 3) and their nuclei were not so eccentric as in typical plasma cells. Large plasmacytoid cells with centrally placed nuclei and marked nucleoli resembled immunoblasts. The nuclei of smaller plasmacytoid cells were similar to those of the lymphoid cells. Transitional forms from the lymphoid cells to the plasmacytoid cells were observed in all cell sizes. Although the proportion of sizes of neoplastic cells varied among neoplastic tissues, small lymphoid cells usually predominated. Mitotic figures were sometimes seen.

The absence of typical plasma cells indicates these plasmacytic cells are of neoplastic nature. This neoplasm could be distinguished from plasma cell tumours composed of pure growths of plasmacytoid cells by the characteristic admixture of lymphoid and plasmacytoid cells [3].

It is generally accepted that the phenotypes of malignant lymphoid cells are comparable to at each level of differentiation of the normal counterparts [1]. In normal plasmacytogenesis small B-lymphocytes differentiate by way of follicle-centre cells to immunoblasts and finally to plasma cells, and these stages correspond to follicular centre cell lymphoma, immunoblastic sarcoma and plasmacytoma, respectively [6]. Although these various B-cell lymphomas may represent

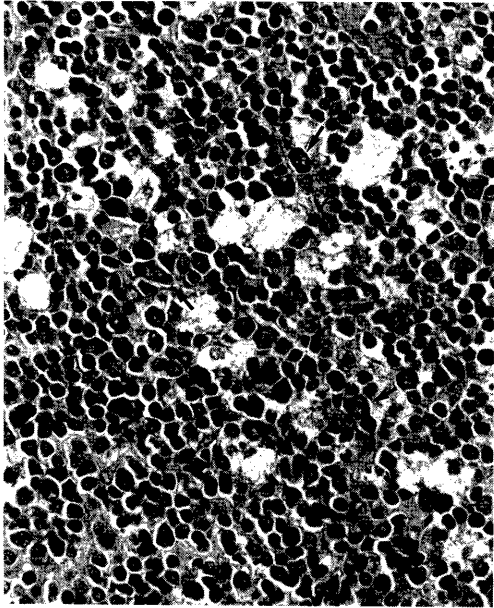


Fig. 1. Neoplastic cells vary in size from large plasmacytoid cells (arrows) to small lymphoid cells and among them degenerative macrophages are scattered. Lymph node. HE. $\times 400$.

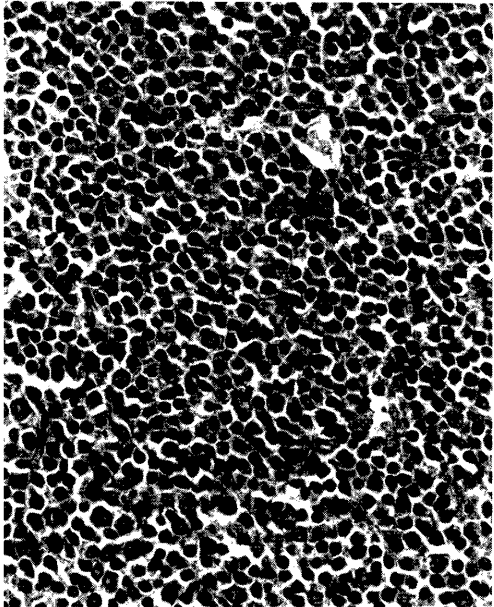


Fig. 2. Relatively small cells predominate in this field, which was obtained from the same section as in Fig. 1. HE. $\times 400$.

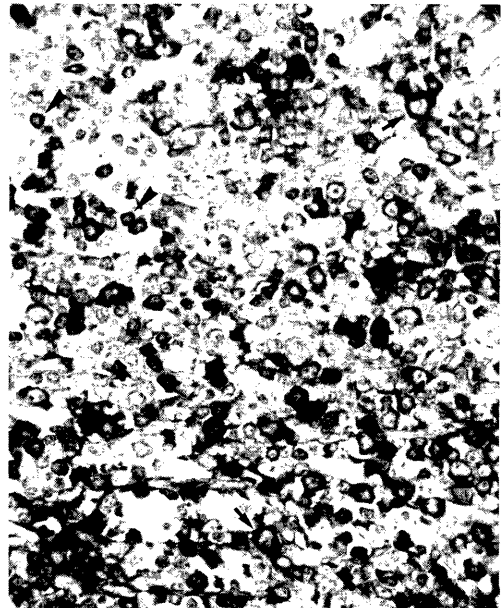


Fig. 3. Cytoplasmic positivity is frequently seen in large (arrows) or small (arrowheads) neoplastic cells. PAP for light chain. $\times 400$.

“blocks” at stages in transformation [8], transition of malignant cell types such as mantle zone lymphoma progressing into follicular lymphoma [7] or follicular centre cell lymphoma with plasmacytic differentiation [4] has been reported in man. Plasmacytic differentiation and immunoblastic transformation have been observed in follicular centre cell lymphomas of pigs [2]. According to the view mentioned above “freeze of differentiation” might have occurred at various stages from small lymphocytes to plasma cells in the present case and some lymphoid cells might be differentiating to maturer cells.

Human lymphoplasmacytic lymphoma is divided into three subtypes [5]. Among them, the polymorphic type is said to be composed of small lymphoid cells, centrocytoid cells, centroblastoid cells, immunoblastoid cells, plasmacytoid lymphoid cells and atypical plasma cells. Our case, in which similar cells were revealed, may correspond to this polymorphic type.

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要 約

細胞質内免疫グロブリンGを伴う豚のリンパ形質細胞性リンパ腫（短報）：中島弘美・橋本夏美¹⁾・門田耕一²⁾（茨城県県南食肉衛生検査所，¹⁾埼玉県食肉衛生検査センター熊谷支所，²⁾農林水産省家畜衛生試験場）——雑種，6か月齢，去勢雄豚の主として腹腔内リンパ節，肝，脾にリンパ腫が認められた。腫瘍は大小さまざまなリンパ様細胞と形質細胞系細胞よりなり，後者の細胞質内にはIgGが存在していた。