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### **B-cell lymphoma with secondary cutaneous involvement: an immunohistochemical and ultrastructural study**

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B-CELL LYMPHOMA  
WITH SECONDARY CUTANEOUS INVOLVEMENT:  
AN IMMUNOHISTOCHEMICAL  
AND ULTRASTRUCTURAL STUDY

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B-CELL LYMPHOMA  
WITH SECONDARY CUTANEOUS INVOLVEMENT:  
AN IMMUNOHISTOCHEMICAL  
AND ULTRASTRUCTURAL STUDY \*\*

ABSTRACT. An immunohistochemical and ultrastructural study was done on 5 cases of B-cell lymphoma with secondary cutaneous involvement to characterize the phenotype of neoplastic non-lymphoid cells and investigate their relationships with the microenvironment. The immunohistochemical investigation with monoclonal antibodies showed the B-cell nature of neoplastic infiltrating cells and varying proportions of reactive T lymphocytes, mononuclear phagocytes and dendritic reticulum cells. The ultrastructural study showed an infiltrate composed mainly of lymphocytes and peculiar non-lymphoid cells, resembling less mature forms of dendritic reticulum cells described in lymph nodal neoplastic follicles.

RIASSUNTO. *In 5 casi di linfoma B con interessamento cutaneo secondario abbiamo effettuato uno studio immunoistochimico ed ultrastrutturale, col proposito di definire il profilo fenotipico delle cellule neoplastiche infiltranti ed indagare sui loro rapporti con il microambiente. L'indagine immunoistochimica con anticorpi monoclonali ha evidenziato la natura B linfocitaria delle cellule neoplastiche infiltranti e la presenza di T linfociti, fagociti mononucleati e cellule reticolari dendritiche in proporzioni variabili. Lo*

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\*\* Presented as a poster.

*studio ultrastrutturale ha mostrato un infiltrato principalmente composto da linfociti e peculiari cellule non linfoidi, simili alle forme meno mature di cellule reticolari dendritiche descritte nei follicoli neoplastici del linfonodo.*

We did an immunohistochemical and ultrastructural study on 5 cases of B-cell lymphoma with secondary cutaneous involvement, to determine the phenotype of neoplastic lymphoid cells and to investigate their relationships with the microenvironment. Frozen sections from cutaneous biopsies were studied with a panel of monoclonal antibodies to B-cells (Leu12, anti-kappa, anti-lambda), T-cells (OKT11, OKT3, OKT4, OKT8), Langerhans cells (OKT6, HLA-Dr), mononuclear phagocytes (OKM1, OKM5), dendritic reticulum cells (DRC-1); monoclonal antibodies to HLA-Dr (I2) and HLA-Dq (Leu10) antigens were also used. The ultrastructural investigation was done by transmission electron microscopy.

The immunohistochemical investigation with monoclonal antibodies (using an amplified immunoperoxidase technique) showed the B-cell nature of neoplastic infiltrating cells (Leu12+, monoclonal kappa or lambda light chain +) and evidenced varying proportions of reactive T-lymphocytes, mononuclear phagocytes and dendritic reticulum cells (specific accessory cells of the B-zone of the lymph node, DRC-1+).

The ultrastructural study showed an infiltrate composed principally of lymphocytes and peculiar non-lymphoid cells. These cells had an irregular shape and the number and length of cytoplasmic projections varied greatly from one subject to another. The cytoplasm contained flat cisternae of rough endoplasmic reticulum, smooth vesicles and tubules (more numerous close to the Golgi apparatus), a well developed Golgi apparatus and a variable number of round, membrane bound bodies, presumably primary lysosomes; secondary lysosomes or residual bodies were exceptional. The nucleus was sometimes deeply indented, with a thin peripheral rim of condensed chromatin and an usually small nucleolus. These cells and their cytoplasmic projections were always in contact with several lymphocytes. No desmosome-like junctions were seen between these cells nor did we find any small processes coated with electron dense material.

Our findings confirm the data reported in the literature [1, 2], showing a variable proportion of reactive T-cells, mononuclear phagocytes and specific accessory cells in the cutaneous infiltrate of B-cell lymphomas. The peculiar non-lymphoid cells observed in our cases showed ultrastructural features resembling those of less mature forms of dendritic reticulum cells, described in lymph nodal neoplastic follicles [3, 4]. We hypothesize that these cells may have a specific role in the constitution and development of neoplastic lymphoid infiltrate in the skin, but further observations are necessary to confirm this hypothesis.

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