

the strain on local services in biochemistry. Such cheese-paring "economies" are, in my view, on all fours with the irrational withholding of free disposable syringes and needles for diabetics on insulin.

It is also not apparent why, when one item on a *non-chargeable* E.C.10 is disallowed, essentials such as insulin are also subject to withholding of payment to the pharmacist concerned. What a petty and bureaucratic outlook.

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B-LYMPHOCYTE NATURE OF HAIRY CELLS IN HAIRY-CELL LEUKÆMIA

SIR,—There is a great deal of controversy about the nature and origin of the "hairy cell" in hairy-cell leukæmia (leukæmic reticuloendotheliosis). Some investigators present evidence that the hairy cells are lymphocytes,¹⁻⁷ while other workers contend that the hairy cells are monocytic or histiocytic cells.^{8,9}

Morphologically, by both light and transmission electron microscopy, the cells differ from typical lymphocytes and monocytes, but some characteristics of both these cell types may be seen. Cytochemically, hairy cells often contain tartrate-resistant acid-phosphatase activity,¹⁰ which is not present in other hæmatopoietic cells but has been demonstrated in atypical lymphocytes in cases of infectious mononucleosis, but this tartrate-resistant enzyme activity has not been seen in monocytes or histiocytes.¹¹ α -naphthylacetate esterase activity which is present in monocytes and histiocytes,¹² however, has been demonstrated in hairy cells of hairy-cell leukæmia.¹³

Evidence supporting the lymphocytic nature of the hairy

cell has included the demonstration of surface immunoglobulin as well as other functional studies indicating a B-cell origin of the hairy cell.^{1-3,5,6} On the other hand, reports favouring the hairy cells belonging to the monocytic/histiocytic series have included the demonstration of the receptor for cytophilic antibody of monocytes on the hairy cells and the absence of the antigen-antibody complement receptor of B lymphocytes.⁸ Additional support for the non-lymphoid nature of the hairy cell has come from the demonstration of the ability of the hairy cell to phagocytose latex particles and bacteria *in vitro*.¹⁴

We have had the opportunity to study by scanning electron microscopy cells from the spleens of 3 patients with hairy-cell leukæmia. On histological sections and by transmission electron microscopy, the normal structure of the red pulp of the massively enlarged spleens was almost completely replaced by a proliferation of typical hairy cells. Separated cells from the spleen as well as sections of spleen prepared by the method of critical point drying and examined by scanning electron microscopy revealed that most of the cells had the appearance of lymphocytes, namely of B lymphocytes (see accompanying figure), as described by Polliack et al.¹⁵ The surfaces of most of the hairy cells were covered by long slender villous processes. By scanning electron microscopy, the hairy cells did not have the appearance of monocytes.

The reasons for the discrepancies among different studies concerning the nature of the hairy cell are not known. It has been proposed that the hairy cell is a primitive "reticulum cell" which can undergo lymphocytic or histiocytic differentiation.¹⁶ The varied responses of hairy cells in different cases or in the same case of hairy-cell leukæmia to immunological, functional, and cytochemical tests may be explained by the differences in degree or direction of differentiation of the hairy cells.

Our morphological scanning electron microscopic study of 3 cases of hairy-cell leukæmia lends support to those investigators who advocate the B-lymphocyte nature of the hairy cell.

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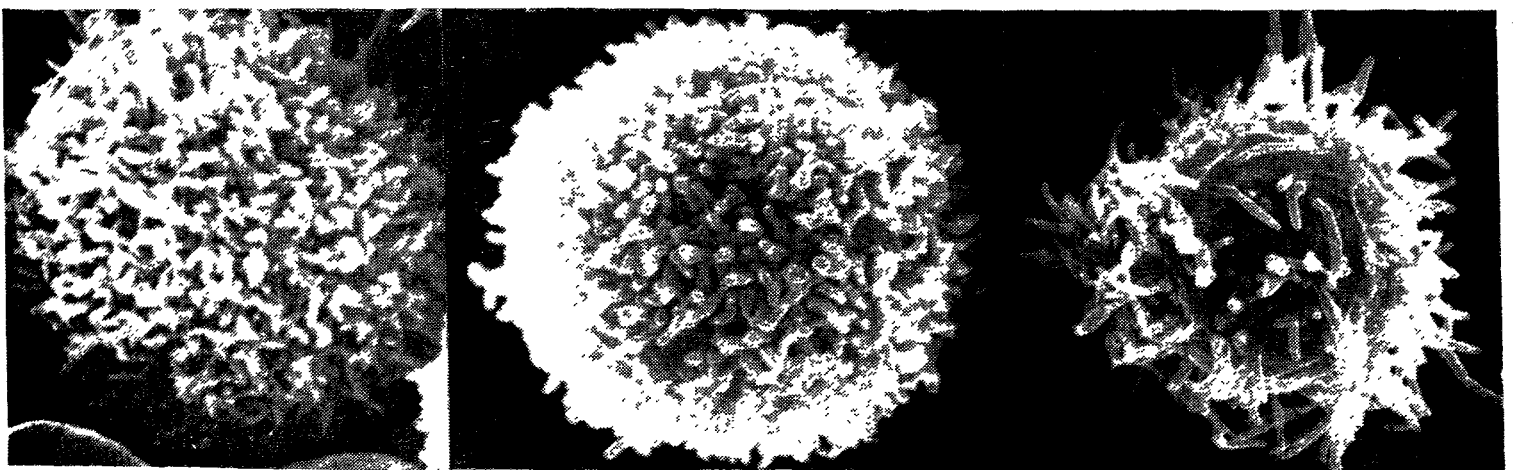
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Scanning electron micrograph of hairy cells.

The surfaces of the cells on the left and middle are completely covered by long, thin, villous processes, while the hairy cell on the right has fewer but longer villi.