Evolution and Phases of Intestinal Delayed-Type Hypersensitivity Reactions

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Quantitative and sensitive morphological techniques, including computerised image analysis, have been used to examine the patterns of small intestinal mucosal changes in mice with graft-versus-host reaction. The effects observed during a semi-allogeneic GvHR in adult FI hybrid mice have been compared with the range of morphometrically defined features present in gluten-sensitive enteropathies and in tropical enteropathy.

The experimentally induced immune-mediated lesions are suggestive of a delayed-type hypersensitivity reaction and evolve through at least four phases: (a) lymphocyte infiltration, predominantly intraepithelial; (b) crypt hyperplasia; (c) a destructive enteropathy with villus flattening in addition to crypt hyperplasia; (d) a hypoplastic lesion with short villi, short crypts, and lymphocyte depletion. There is growing evidence that at least some of these features of gut enteropathy may be the direct result of locally produced cytokines.

A virtually analogous spectrum of pathology is seen in gluten-sensitive enteropathy. A revision of the pathological criteria which are consistent with a gluten-sensitive enteropathy, such as in untreated coeliac disease, may be required.