1B—4 IMMUNOHISTOCHEMICAL LOCALIZATION OF TYPE I, III, IV, V AND VI COLLAGENS AND LAMININ IN NEUROFIBROMA AND NEUROFIBROSARCOMA

Miyako Chanoki, Masamitsu Ishii, Kazuyoshi Fukai, Hiromi Kobayashi, Toshio Hamada, Yasuteru Muragaki*, and Akira Ooshima*

Department of Dermatology, Osaka City Univ. Medical School, Osaka, and *Department of Pathology, Wakayama Medical College, Wakayama, Japan.

In normal human skin, type I, III, V and VI collagens are distributed throughout dermis and type IV collagen are in basement membrane1),2). Cutaneous neurofibromas of von Recklinghausen's disease are composed of tumor cells and a dense connective tissue stroma. To clarify the types of collagen in the connective tissue stroma and around the tumor cells, we studied the distribution of types I, III, IV, V and VI collagens and laminin by indirect immunofluorescence(IF) and immunoelectron microscopy(IEM). Then the morphological changes in interstitial and basement membrane components in neurofibrosarcoma were investigated by IF.

MATERIALS AND METHODS

Specimens were obtained from 11 cutaneous neurofibromas from 6 patients with von Recklinghausen's disease and 3 sites in one neurofibrosarcoma. Collagens(type I, III, IV, V and VI) were extracted from human placenta. Anti-type I, III, IV and V polyclonal antibodies and anti-type III, IV and VI monoclonal antibodies were produced. Then IF and IEM(pre-embedding method) were performed with these antibodies.

RESULTS

Neurofibroma: When using antibodies to type I, III, and V collagens, immunopositive deposits were detected diffusely on cross-striated collagen
Collagen types in neurofibroma fibrils (Fig. 1). FLS collagens were antigenic for type III and V collagen antibodies. Anti-type VI collagen antibodies had immunopositive materials diffusely between the cross-striated collagen fibrils, but not on the fibrils themselves (Fig. 2). Type IV and laminin surrounded tumor cells.

Neurofibrosarcoma: Tumor collagen bundles positive for anti-type I, III, V and VI collagen antibodies were wavy, loose and irregularly arranged. Immunofluorescent deposits which reacted with anti-type IV collagen and laminin antibodies were short or patchy.

Fig. 1. IEM findings with anti-type V collagen antibodies. Immunopositive deposits are observed diffusely on cross-striated collagen fibrils.

Fig. 2. IEM findings with anti-type VI collagen antibodies. Immunopositive deposits are observed diffusely between cross-striated collagen fibrils.

REFERENCES