IMMUNOHISTOCHEMICAL STUDIES OF BASEMENT MEMBRANE COMPONENTS IN SQUAMOUS CELL CARCINOMA OF THE SKIN

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We studied the basement membrane (BM) components in squamous cell carcinoma (SCC) immunohistochemically, and discussed their correlation with the histological malignancy.

MATERIALS AND METHODS

We examined fresh-frozen tissue sections of 15 SCCs by double immunofluorescent staining with monoclonal antibody to heparan sulfate proteoglycan (HSPG)(HS471) or chondroitin 6-sulfate (C6S)(3B32) and with rabbit antiserum to collagen typeIV(C-4) or laminin(IN).

RESULTS AND DISCUSSION

The immunofluorescence of C-4, IN and HSPG on the BM of SCC other than Bowen carcinoma(BCa) was divided into two patterns3)4) : one was linear and continuous and the other was widely disrupted(Fig.1). SCCs of which the BMs were extensively degraded had a tendency to be less keratinized and less differentiated(Fig.2), and to show the more infiltrative growth 5)(Fig.3). The correlation between the continuity of the BM and the Broders' grade or the infiltrative growth indicates that defects of BM components are associated with the histological malignancy. Their extensive loss seems to be due to the enzymatic degeneration rather than the loss of the ability to synthesize. C6S did not stain the BMs of these SCCs at all, although capillary BMs around them were observed as intensely stained as those of normal skin. The other 3 cases, of which the BM was stained partially with C6S, were BCas (Fig.1). The selective and complete loss of C6S in SCCs other than BCas suggests that they lose the ability to synthesize it. BCa is distinguished from the other SCC by retaining its ability to synthesize C6S.
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![Diagram of SCC components]

Fig. 1. Changes in BM components in SCC.

(1) SCCs with intact BM (7 cases)

(II) SCCs with degraded BM (5 cases)

Fig. 2. Correlation between Broders' grade and BM components.

Fig. 3. Correlation between infiltrative growth and BM components.

REFERENCES