Short Report

Exfoliation As a Mode of Cancer Elimination in Rectal Carcinoma

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Okuyama, S., Mishina, H., Hariu, T., Yamamoto, K., Matsushiro, T., Yamagata, R. and Taima, T. Exfoliation As a Mode of Cancer Elimination in Rectal Carcinoma. Tohoku J. exp. Med., 1984, 143 (4), 503-504 — A histopathological survey of surgical materials from 143 patients with rectal carcinoma subjected to chemotherapy and low-dose radiotherapy with tegafur and bleomycin was carried out. The chemotherapy combined with radiotherapy brought about better results than chemotherapy alone. In 4 of the 58 patients treated with radiochemotherapy, no cancer cells could be found in surgical specimens. Exfoliation into the rectal lumen of cohorts of cancer cells may occur in some cases of rectal carcinoma thus treated, resulting in cancer cell elimination.

In order to evaluate the effect of preoperative radiochemotherapy with low-dose irradiation on rectal carcinoma, surgical materials from 143 patients were histopathologically investigated.

During the period from 1972 to 1982, there were 58 patients (33 males and 25 females, 61.5±12.2 years of age) with rectal carcinoma who underwent radiotherapy combined with a variety of chemotherapy, and 85 patients (35 males and 50 females, 60.1±11.7 years of age) who received chemotherapy alone. All of these patients were subjected to surgery and the surgical materials were extensively examined histopathologically. The results were classified according to the Dukes’ criteria (Donegan and DeCrosse 1978). Absence of any recognizable cancer cells was categorized as Dukes O.

Radiochemotherapy was significantly effective on cancer invasion (Fig. 1). Four of the 58 cases were diagnosed as Dukes O. They have survived for 1 year and 7 months to 7 years and 6 months. Analysis of our yearly data suggested that tegafur and bleomycin in oil combined with low-dose radiotherapy of 3,000 R may bring about good results. Distinct beneficial effects of the radiochemotherapy were apparent in terms of surgical resectability, recurrence rate, development of distant metastasis, and various interim parameters of survival (Hariu et al. 1983).

It is conceived that bleomycin inhibits the repairing process of radiation damage of DNA and makes the damage irreversible or perpetual; perpetuation principle (Okuyama and Mishina 1982). Rectal cancer cells grow and spread through the submucosa in an arborescent way (Iwama and Takahashi 1983). When treated by low-dose irradiation combined with chemotherapy, the normal tissue architecture is well preserved, but the rectal

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cancer cells may regress retrogressively from the submucosa, and eventually exfoliate into the rectal lumen (Fig. 2). This can be the biological principle of cancer therapy that may help overcoming the log cell kill limitation of radiotherapy and/or chemotherapy as suggested earlier (Okuyama and Mishina 1982).

References


