A Case of Advanced Gastric Cancer With Long-Term Survival as the Results of Combined Radiation Therapy and Chemotherapy

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Abstract

A case report on a long-term surviving patient with advanced gastric cancer with supraclavicular lymph node metastasis treated by radiation and chemotherapy is presented.

The Borrmann type 2 of advanced gastric cancer was found on the greater curvature of the antrum at the first radiological examination.

Radiation was administered to the supraclavicular lymph node at 60 Gy and to the stomach at 64 Gy. The patient received mitomycin C (24 mg) and Tegafur (230 g). After completion of the combined therapy the endoscopy revealed an irregular mucosal change with erosion and hemorrhage. Radiological examination revealed atrophic and hyperplastic areas throughout the stomach. These findings lasted more than six years. The patient died of unknown cause in February 1983. She had survived nine years and seven months after her initial diagnosis. Radiotherapy may play a role as a means of radical treatment in certain cases of advanced gastric cancer.

Key words: Gastric cancer, Radiotherapy, Chemotherapy

Introduction

Recently mortality from gastric cancer has decreased with improved methods and techniques used in diagnosis and therapy. These developments have accompanied a very effective mass screening program utilized in Japan because of the prevalence of this cancer among the Japanese. Unfortunately many gastric cancers are still diagnosed in advanced stages making treatment more difficult and prognosis less favorable. In these advanced gastric cancers, which are usually treated by surgery, chemotherapy is the first choice for inoperable cancers. Radiation therapy has rarely been used and then usually for the palliative treatment of metastatic lesions. We present a case report on a long-term surviving patient with advanced gastric cancer with supraclavicular lymph node metastasis treated by radiation and chemotherapy.
Fig. 1: Double contrast study at the first examination. Marginal elevation of a tumor of $4 \times 4$ cm with a steep rise surrounding a crater on the greater curvature of the antrum is noted.
Case Report

In April 1973 a 66-year-old woman consulted her local physician for evaluation of an enlarged left supraclavicular lymph node. With the diagnosis of metastasized gastric cancer to Virchow’s node, the patient was referred to the National Cancer Center Hospital on June 22.

At the time of her first examination, a 3- × 4-cm lymph node was palpable in the left supraclavicular space. The erythrocyte sedimentation rate was moderately accelerated, 57 mm/1 hr and 92 mm/2 hr. The feces were positive for occult blood. Surgery was not considered because of the supraclavicular lymph node metastasis and treatment by a combination of radiation and chemotherapy was started. At the time of the first radiological study, a 4- × 4-cm lesion with raised marginal walls surrounding a crater was discovered on the greater curvature of the antrum. A diagnosis of Borrmann type 2 advanced gastric cancer was made (Fig. 1). Needle aspiration biopsy from Virchow’s lymph node showed metastatic adenocarcinoma from the stomach (Fig. 2). The initial endoscopic examination revealed a smooth elevation on the posterior wall side of the greater curvature of the antrum (Fig. 3). The biopsy obtained at that time revealed a tumor with small nest-like proliferation. The cells were polymorphic with a large amount of cytoplasm, containing signet ring-like structures in some parts compatible with poorly differentiated adenocarcinoma (Fig. 4). Radiation therapy was administered to Virchow’s lymph node at 60 Gy from July 20 to August 30, 1973, and to the stomach at 64 Gy from August 6 to September 18, 1973. Chemotherapy consisted of 24 mg of mitomycin C (MMC) given from August 7 to September 14, 1973, and 230 g of Tegafur given from July 20, 1973, to October 2, 1974. Complete disappearance of Virchow’s lymph node was achieved after radiation therapy. The endoscopic finding 1.5 months after the completion of radiation therapy was gone.
Fig. 3: Endoscopic findings at the first examination. A smooth elevation is noted on the posterior wall side of the greater curvature at the antrum. The crater is not seen from this angle.

therapy revealed an irregular mucosal change with erosion and hemorrhage along the circumference from the gastric angle to the pylorus. An endoscopic diagnosis of cancerous invasion with radiation effect was made (Fig. 5). Radiological examination of the stomach four months after the end of radiation therapy revealed atrophic and hyperplastic areas throughout the stomach. The marginal elevation previously seen had disappeared (Fig. 6). Follow-up was continued for six years by both endoscopy and radiological examination. The findings were similar to those described previously with only minor changes (Fig. 7). The patient died of unknown cause in February 1983. She had survived nine years and seven months after her initial diagnosis.

Discussion

The need to evaluate the effectiveness of chemotherapy in the treatment of gastric carcinoma of advanced stages as well as in the treatment of recurrent disease is obvious. This is particularly true in light of the recent development of fluorinated pyrimidine compounds which have been reported to be effective in the treatment of cancer (Naito et al., 1983; Yokota et al., 1983). In 1979 Koyama
Fig. 4: Histological findings of the biopsy specimen at the first examination. A tumor with alveolar growth and polymorphic cells with a large amount of cytoplasm. In some parts, a signet ring-like structure is noted.
Fig. 5: Endoscopy 1.5 months after completion of the treatment. From the gastric angle to the antrum, extensive mucosal changes with irregularities together with erosions and hemorrhage are noted along almost the entire circumference.
Fig. 6: Double contrast study 4 months after completion of the treatment. The marginal elevation seen at the initial examination has disappeared, and a coarse, irregular granular gastric area is noted.
Fig. 7: Double contrast study 6 years after treatment. Disturbance of mobility is noted from the prepylorus to the antrum. In the mucosal pattern, coarse, irregular areas of various sizes are noted.
proposed certain criteria to be used in the evaluation of chemotherapeutic response in the treatment of solid tumors. Chemotherapy has been reported to be particularly effective in patients with well-differentiated elevated lesions (Kurihara et al., 1979). Marked reduction in the size of the lesion and even its complete disappearance have been claimed. In general a tumor’s sensitivity to radiation therapy tends to be higher in poorly differentiated cancers. One of the reasons for the marked effectiveness of radiation therapy in the case reported here is that the cancer was a poorly differentiated adenocarcinoma. The
combined use of Tegafur and MMC further augmented the local effectiveness of radiation therapy while inhibiting metastasis, all contributing to the patient’s long-term survival. A decrease in tumor size was first noted in response to radiation at approximately 30 Gy. At the end of treatment, the crater was still present but the marginal elevation was indistinct. Endoscopy 1.5 months later revealed extensive erosion, hemorrhage and an irregular mucosal finding accompanying radiation-induced inflammation of the mucosa. The marginal wall had disappeared completely.

The National Cancer Center endoscopically grades the effectiveness of chemotherapy in the treatment of gastric cancer as follows: (Yoshida et al., 1983).

Grade I: An alteration in the size or shape of the tumor is noted.

Grade II: In addition to Grade I changes, an absolute decrease in the tumor’s size must be present.

Grade III: No findings compatible with or suspicious of malignancy are present.

Yoshida et al. (1983) reported that two patients treated with chemotherapy had complete responses (Grade III). The changes noted in the tumors initially consisted of a smoothing-out of the irregular contour. This was followed by a gradual decrease in the tumor’s size followed by complete resolution leaving only a scar. It took 20–40 weeks for the tumors to disappear. In the patient described here, the tumor disappeared 4–5 weeks after the completion of treatment. Radiation therapy was felt to be the major cause of the reduction of the tumor’s size.

Following treatment radiological studies revealed coarse and irregular gastric areas of various sizes in the mucosa. Endoscopy revealed marked irregularities with reddening. It is noteworthy that these findings persisted for more than six years after the completion of treatment. Inoperable advanced carcinomas are frequently accompanied by remote metastatic lesions. Because of the extent of disease surgical cure is not possible and chemotherapy is selected for primary therapy. This treatment can be enhanced and the local therapeutic effect increased by the addition of radiation therapy. Local effect and survival are correlated. Because of these facts the effectiveness of combined radiation and chemotherapy on long-term survival must be evaluated and clarified by randomized clinical trials.

References


