Case Report

Long-term complete response in supraclavicular lymph node metastases of esophageal cancer using systemic chemotherapy-a case report

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Abstract: Esophageal cancer (EC) is a highly lethal disease. We report here a patient with supraclavicular lymph node metastases of esophageal cancer, who was successfully treated by systemic chemotherapy containing 5-fluorouracil (5-FU), docetaxel and cisplatin (CDDP). The patient, a 53-year-old woman, was diagnosed as having squamous cell carcinoma of the esophagus upon endoscopic examination. She underwent neoadjuvant chemotherapy with cisplatin (CDDP), 5-fluorouracil (5-FU)(CF) for four courses. Then, a chest CT revealed that the esophageal tumor and mediastinal lymph node metastases had markedly decreased in size to the point of being unmeasurable. Due to the patient refusing surgery and radiotherapy, and because her general condition was favorable, 2 courses of systemic chemotherapy with docetaxel, CDDP, 5-FU (DCF) were administered. CT showed the supraclavicular lymph node and esophageal tumor disappeared. No tumor recurrence has occurred in the 5 years and 8 months since the first cancer cure. Therefore, in patients whose general conditions are favorable, DCF should be considered as a treatment option for advanced esophageal cancer.

Keywords: Long-term complete response, esophageal cancer, systemic chemotherapy

Introduction

Esophageal cancer is one of the most common and refractory malignant diseases, and its incidence has been increasing in recent years [1-4]. Statistical data indicates that about 482,300 new esophageal cancer cases and 406,800 esophageal cancer-related deaths occurred worldwide in 2008 [4]. The high mortality rate is attributed to some related factors like a tendency to relapse, a low rate of diagnosis at the early stage, and drug resistance. Systemic chemotherapy is considered to be one of the most effective treatments to improve the survival rate [5]. 5-Fluorouracil (5-FU) is universally used as an anticancer agent in esophageal carcinoma. Cisplatin and fluorouracil combination therapy has become the standard choice for the treatment of esophageal cancer [6-8]. Docetaxel has shown activity against many solid tumors as a monotherapy and in combination with other agents. Some trials have shown that cisplatin and fluorouracil plus docetaxel (DCF) have a good objective efficacy in the treatment of advanced and metastatic ESCC [9, 10]. A few studies also indicated that DCF has been shown to be more useful than standard cisplatin and 5-FU or cisplatin and fluorouracil plus Adriamycin (ACF) [11, 12]. The complete response of the disease only by chemotherapy rarely occurs in esophageal cancer. Here we report a case of esophageal cancer with lymph node metastases achieving the ultimate success of systemic chemotherapy with CF and DCF treatment. This regimen allowed the complete response of the disease to last for 4 years.

Case report

A 53-year-old woman patient with severe dysphagia and weight loss was admitted to our hospital in November 2014. Difficult swallowing caused a subsequent 7 kg weight loss during the three months prior to our observation. We decided to let our patient have instrumental checks since she had no other specific com-
Complaints. Computed tomography (CT) scans revealed an esophageal tumor in the beginning of the thoracic esophageal wall as well as an enlarged right supraclavicular laryngeal nerve lymph node (Figure 1). Esophagogastroscopy revealed a tumor located 10 cm from the incisors (Figure 2). Because of the severe tumor hyperemia, it was not possible to get a biopsy specimen from the tumor for pathological diagnosis. We then excised one of the enlarged right supraclavicular laryngeal nerve lymph nodes, and the histological findings of the biopsy specimen from the laryngeal nerve lymph node showed squamous cell carcinoma. The immunohistochemical evaluation of the biopsy specimen revealed that the squamous cell carcinoma cells were positive for CKP and CK5/6 and negative for TTF-1, CK7, and P53 (Figure 3). The patient was diagnosed with esophageal squamous cell carcinoma (T4bNxM1 stage IV according to the UICC TNM classification).

CF chemotherapy was proposed. The CF therapy consisted of intravenous cisplatin (60 mg/m², day 1), and continuous 5-fluorouracil (800 mg/m², 96 h), in three-week intervals. After four courses of CF therapy, the esophageal tumor was extremely reduced, and the enlarged right supraclavicular laryngeal nerve lymph nodes disappeared on the CT examinations. She did not undergo radiotherapy or a surgical operation because there was not enough finan-

Figure 1. Esophageal tumor in the beginning of the thoracic esophageal wall as well as enlarged right supraclavicular laryngeal nerve lymph nodes.

Figure 2. A tumor located 10 cm from the incisors.

Figure 3. The squamous cell carcinoma cells were positive for CKP and CK5/6, and negative for TTF-1, CK7, and P53.
cial support. Instead, she got two courses of DCF chemotherapy (docetaxel at 50 mg/m² on day 1, intravenous CDDP at 60 mg/m² on day 1, and intravenous 5-FU at 600 mg/m² on days 1-4), repeated every 4 weeks for two cycles. In the following weeks, the patient began to resume her daily activities and underwent periodical clinical and instrumental checks (Figure 4), which were always negative. The woman still enjoyed good health four years later.

Discussion

Esophageal cancer was the ninth most common cancer in the world in 2013 and the sixth most common cause of cancer-related death [13]. In the early stages of esophageal cancer, esophageal resection plays an important role [14-16]. However, about 40% to 60% of patients have lost the chance for surgical therapy when they are diagnosed with cancer of the esophagus [17]. Cisplatin combined with 5-Fu is the standard regimen of chemoradiotherapy for esophageal cancer [18]. The synergistic effect of cytotoxicity in tumor cells has been well recognized in the 5-FU and CDDP combination. 5-Fu has been shown to enhance the cytotoxicity of CDDP and even bypass the CDDP drug resistance by inhibiting the repair of platinum-DNA cross-links and reducing the content of glutathione (an antidote compound) [19-21]. Combined chemotherapy using CDDP and 5-FU has been well established for advanced esophageal SCC, with the response rates being approximately 50%-60% [22]. In randomized trials, a combination of radiotherapy (RT) and chemotherapy has been used to improve the local control and survival of esophageal cancer, and Cisplatin (CDDP) and 5-Fu seem to be the key drugs in this treatment [23-25]. Recently, the efficacy of combined chemotherapy using docetaxel, cisplatin, and 5FU (DCF) for esophageal cancer has been reported [26-31]. Nomura et al. and Miyazaki et al. [30, 32] reported that the overall response rate was significantly higher in the DCF group than in the CF group in patients with advanced esophageal cancer.

So, for the case reported here, we selected CF therapy as neoadjuvant chemotherapy. The local treatment (surgery or radiotherapy) was originally planned after two cycles of neoadjuvant chemotherapy. But, as the patient was incapable of affording the cost of radiotherapy or surgical resection, after 4 cycles of CF therapy, she decided to continue with 2 cycles of DCF. Then computed tomography (CT) scans revealed that the tumor disappeared. Therefore, the patient was classified as having a complete response.

In order to determine why the CF and DCF chemotherapy is so effective, panoramic cancer gene detection was performed on the patient’s original tumor tissue. The result showed that the genes TP53, ERCC1, ERCC2, and GSTT1 were mutational. The ERCC1 polymorphism could predict the sensitivity of recurrent esophageal cancer to radiochemotherapy [33]. A low BRCA1 mRNA expression correlated with an increased response rate and median overall survival in cisplatin-based chemotherapy [34]. There may be other chemosensitivity-related genes, but unfortunately, we have not been able to detect them.

Figure 4. No recurrence or metastasis was observed from a follow-up of 2-4 years.
Anyway, surgical resection has constituted the main treatment option in the management of esophageal cancer [35]. For advanced esophageal cancer, patients could get a significant benefit in 5-year DFS from postoperative adjuvant chemotherapy with CF [36-38].

Treatment modalities for esophageal SCC have become subdivided according to the clinical stage. The current treatment of esophageal cancer involves multidisciplinary therapies, including radiotherapy, chemotherapy, surgery, and endoscopic treatment. Multidisciplinary therapies have been developed to prolong the survival of patients with esophageal cancer. Combining the advantages of each treatment and the close cooperation of the treatment team (including medical staff) will solve several problems for patients with esophageal cancer and improve their outcomes [39].

In summary, based on the individual characteristics of the tumors, individualized and systematic treatment of esophageal cancer by surgery, radiotherapy, chemotherapy, and immunotherapy will effectively prolong patients’ lives and improve their quality of life. Our experience suggests that panoramic cancer gene detection should be performed before initiating therapy for the patient.

Disclosure of conflict of interest

None.

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References


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