

Case Report

Is Bone Marrow Metastasis in Gastric Cancer Adequate for Best Supportive Care (BSC) Decision? or Is There Still a Chance?

Gastrik Kanserde Kemik İliği Metastazı En İyi Destek Bakımı (BSC) Kararı İçin Yeterli mi? Yoksa Hala Bir Şans Var Mı?

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ABSTRACT

Gastric carcinoma is one of the most common types of cancer worldwide. While intra-abdominal metastasis is common, bone marrow metastasis is quite rare, and these patients may present with cytopenia. We present the case of a patient with gastric carcinoma and bone marrow metastasis, whose bone marrow suppression, bicytopenia (anemia and thrombocytopenia) regressed after two cycles of chemotherapy. A 58-year-old male patient with advanced-stage gastric adenocarcinoma presented with bicytopenia. Bone marrow metastasis was confirmed by bone marrow aspiration biopsy. Bone marrow suppression regressed after initiation of chemotherapy. Bone marrow metastases are rare in gastric carcinoma, and there is no standard treatment for these patients. Our case report is remarkable as it demonstrates a rare instance of bone marrow suppression responding to chemotherapy in these patients, and suggests the potential effectiveness of 5-FU and platinum-based chemotherapies.

Keywords: MRI, infundibular Craniopharyngioma, Pituitary infundubulum

ÖZET

Mide kanseri dünya çapında en sık görülen kanser türlerinden biridir. İntraabdominal metastazlar sık olmakla birlikte kemik iliği metastazı oldukça nadirdir ve bu hastalar sitopeni ile başvurabilmektedir. Bİz kemik iliği metastazı olan, iki kür kemoterapiyle kemik iliği supresyonu, bisitopenisi (anemi ve trombositopeni) gerileyen bir mide karsinomu hastasını sunmaktayız. Metastatik mide adenokarsinomlu 58 yaşında erkek hasta bisitopeni ile başvurdu. Kemik iliği aspirasyon biyopsisi ile kemik iliği metastazı doğrulandı. Kemoterapi başladıktan sonra kemik iliği baskılanmasının gerilediği görüldü. Mide karsinomunda kemik iliği metastazları nadirdir ve bu hastalarda standart bir tedavi yöntemi yoktur. Olgu sunumumuz bu hastalarda kemoterapiye kemik iliği baskılanması yanıtının nadir bir örneği olması ve bu hastalarda 5-FU ve platin bazlı kemoterapilerin potansiyel etkinliğini göstermesi açısından dikkat çekicidir.

Anahtar Kelimeler: gastric cancer, bone marrow, metastasis, chemotherapy

Introduction

Gastric carcinoma is the 5th most common type of cancer worldwide and is generally more prevalent in Asian countries than in others [1]. Patients are typically symptomatic at the time of diagnosis, with the most common symptoms being dysphagia, weight loss, and persistent abdominal pain. The

majority of patients are diagnosed at an advanced stage, often precluding curative treatment. In advanced-stage disease, the liver, peritoneum, and intra-abdominal lymph nodes are the most common sites of distant metastasis. Ovarian and central nervous system metastases are less frequent, while bone and bone marrow metastases occur in

Table.1 The patient's blood values before chemotherapy, on the 15th day after the first and second cycles of chemotherapy, and 2 months after initiation of chemotherapy

TEST	Before Chemotherapy	15th Day After the First Cycle of Chemotherapy	15th Day After the Second Cycle of Chemotherapy	2 Months After Initiation of Chemotherapy
Hemoglobin (gr/dl)	6.1	7.9	8.5	8.4
Total Bilirubin (mg/dl)	2.43	1.9	1.09	0.99
Direct Bilirubin (mg/dl)	0.7	0.6	0.37	0.25
Platelet (x10 ³ cell)	26	79	106	140
INR	2	1.6	1.54	1.35
LDH (U/L)	934	693	383	266
D-Dimer (µg/L)	35200	22650	10800	
Fibrinogen (mg/dl)	99.4	99.7	116	116

*LDH; Lactate Dehydrogenase *INR; International Normalization Ratio

less than 10% of patients [2]. The concurrent occurrence of bone marrow metastasis and disseminated intravascular coagulation (DIC) in gastric carcinoma is extremely rare, and treatment response is generally limited [3]. In our case report, we describe an advanced-stage gastric carcinoma patient who developed bicytopenia and DIC secondary to bone marrow metastasis. The patient's bone marrow suppression, bicytopenia, and DIC improved significantly after two cycles of chemotherapy.

Case

A 58-year-old male patient with known diabetes mellitus and coronary artery disease presented with a weight loss of 20 kg over 6 months. Esophagogastroduodenoscopy revealed multiple ulcerated lesions at the lesser curvature of the stomach, and a biopsy confirmed gastric adenocarcinoma with a signet ring cell component (CERB-B2 negative). Thoracoabdominal CT imaging showed multiple intra-abdominal and mediastinal lymph nodes. PET/CT examination detected widespread metastatic foci in the bones, multiple metastatic lymph nodes in the mediastinum, and a malignant mass at the lesser curvature, along with multiple intra-

abdominal metastatic lymph nodes. Blood tests revealed bicytopenia, with normal anemia markers and no atypia observed in the peripheral blood smear examination. Bone marrow aspiration biopsy confirmed gastric adenocarcinoma metastasis. Due to increased d-dimer levels and decreased fibrinogen levels, the patient was evaluated by the hematology clinic. Oxygen therapy was not required, and pulmonary thromboembolism was ruled out by imaging. Platelet suspension, fresh frozen plasma suspension, and erythrocyte suspension were administered with a preliminary diagnosis of DIC. The patient's condition was attributed to bone marrow metastasis of gastric adenocarcinoma, and chemotherapy was initiated with a 50% dose reduction in the mFOLFOX6 protocol. Following chemotherapy, the patient's bicytopenia and DIC improved, with blood test values showing recovery and bone marrow suppression resolving. The patient's general condition improved after chemotherapy, and he continues to be monitored during the third month of treatment. The patient's blood values before chemotherapy, on the 15th day after each chemotherapy cycle, and 2 months after starting chemotherapy summarized in Table 1.

Discussion

Although bone marrow metastasis is common in solid organ tumors, it is rarely detected in metastatic gastric carcinoma, is seen mostly in poorly differentiated subtypes, in relatively young patients, and there is no standard treatment method [4]. Similar to this information, our patient is a young patient that 58 years old, and in the pathological examination, it was reported that the tumor had a signet ring cell component. The signet ring cell subtype shows poor differentiation. In a series examining the frequency of bone marrow metastasis in gastric carcinoma patients, the incidence of bone marrow metastasis was found to be below 1% [5]. In a study examining 2150 patients with metastatic gastric carcinoma, the frequency of bone marrow metastasis was reported to be only 0.9% [6]. The most useful imaging method for detecting bone marrow metastases is PET/CT, and in our patient, widespread increased metabolic activity was detected in bones with PET/CT [7]. While cytopenias alone may be seen in cases with bone marrow metastases, patients may present with cytopenias and DIC as in our case [3]. The cause of anemia and bicytopenia in gastric carcinoma patients who have been operated on or whose gastric mucosal integrity is impaired may be iron deficiency and vitamin B12 deficiency. In our patient anemia markers were observed and found to be at normal range. Gastric carcinoma presenting with DIC generally has a poor prognosis and is known to be resistant to chemotherapy, but it has been reported in some case series that they benefit from 5-FU-based chemotherapy [8-10]. In a study, it was reported that the response rate with 5-FU, platinum and taxane-based chemotherapy in gastric cancer patients with bone marrow

metastases was approximately 30%, and the average survival was approximately 1 year [11]. Our patient was treated with mFOLFOX6 protocol which contains 5-FU and platinum-based chemotherapy agent, and it was observed that the suppression on the bone marrow regressed with the treatment from the first cycle. In parallel with the response we received with chemotherapy, a study reported that the prognosis was better in gastric carcinoma patients with bone marrow metastases in those who received palliative chemotherapy than in those who did not receive chemotherapy, and overall survival was found to be longer in the group receiving chemotherapy [12]. In another study, the average survival in bone marrow metastatic gastric carcinoma patients receiving chemotherapy was reported to be 3 months, while it was reported to be 2 months in patients monitored with best supportive care [8]. This information in the literature supports that the response to treatment in bone marrow metastatic gastric carcinoma is limited, and although benefit is extremely rare in these patients, more courageous use of chemotherapy may be required.

Bone marrow metastases are rare in gastric carcinoma, and there is currently no standard treatment method established for these patients. Treatments that have shown limited benefit may be withheld due to cytopenia resulting from bone marrow involvement. Our case report is noteworthy as it represents a rare instance of bone marrow suppression and DIC responding positively to chemotherapy in bone marrow metastatic gastric carcinoma. This underscores the potential for more assertive use of 5-FU and platinum-based chemotherapies in such cases

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