The Role of Chemotherapy Combined with IMRT in the Management of Ulcerative Breast Cancer

Sir,

In July 2014, a 40-year woman presented with an enormous bleeding ulcer involving the entire left breast. The patient had pain. Modesty and fear had kept her away from looking professional help earlier, despite the lesion's presence for about 3 years. On physical examination it was found that her left breast was almost completely occupied by tumor tissue. Needle biopsy of the lump in the left breast revealed invasive breast cancer and Ki67 (50%), ER (-), PR (-), HER2 (+++) (Figure 1). Computed tomography (CT) scan identified multiple lymph nodes in her left axillary (largest measuring 1.4 cm) and a nodular lesion in the lower lobe of the right lung. Electrocardiograph, head CT, routine blood test, liver and kidney function, electrolyte, and chest X-ray film were normal. She was diagnosed as not suitable for surgery.

Chemotherapy plus radiotherapy was administered with a palliative intent. Chemotherapy in six cycles were given, administered by the CMF regime (cyclophosphamide, 600 mg/m², methotrexate, 40 mg/m² and fluorouracil, 600 mg/m², repeated every 21 days), and IMRT (intensity-modulated radiotherapy) was given. Figure 2A shows CT scan before radiotherapy. The GTV (gross tumor volume) was contoured on the basis of the CT. The CTV (clinical tumor volume) was defined as the primary tumor (GTV + 3 mm), and the PTV (plan tumor volume, CTV + 4 mm), an IMRT plan was established, PTV was given 2Gy/F, 5 times a week. The radiotherapy began after the first cycle of chemotherapy. The second to sixth cycles of chemotherapy were administered after the radiotherapy. Effect evaluation had not been performed by CT during the entire treatment period because of extreme economic difficulties from our patient. During remission, full involvement in all kinds of daily activities with a good quality of life and sufficient social contacts was retrieved. The lesion was controlled and the left breast ulcer had healed well in January 2015. Figure 2b shows CT scan 3 months after comprehensive therapy for this patient.
The case reveals that the palliative treatment of ulcerative tumors is a rewarding challenge for clinicians. The patient had not sought reasonable treatment in time with a delay of more than 3 years. Delay in diagnosis, which causes primarily more advanced disease stage, results from various factors like fear, difficulties in seeking professional medical support, and cognitive interference.¹ So the oncologists all over the world should encourage patients to accept the treatment as early as possible.

Ki67 antigen is a marker of cell proliferation and is expressed in all phases of cell cycle except in G0 period.² Montagna et al. found that LABC with high Ki67 expression implies a worse prognosis and reduced relapse-free survival in their studied population.³ The subgroup of ULBC (ulcerated breast cancer) had worse prognostic factors like high rate on moderately and poorly differentiated carcinomas, hormonal receptor negative, high rate on triple negative breast carcinoma as well as HER2 and Ki67 expression compared to NULBCs. Needle biopsy of the ulcerative lump of this patient revealed Ki67 (50%), ER (-), PR (-), HER2 (+++). All these factors are known to be associated with an unfavourable prognosis and an increased risk to be diagnosed with distant metastases at the time of initial diagnosis.³ Positive HER2 indicates herceptin and chemotherapy regimen containing adriamycin can be selected to treat this patient in further therapy.

IMRT is still not widely accepted to be medically necessary in breast cancer, but ongoing studies may reveal that it will prove to be useful in treating node-positive breast cancer when wide-field nodal targets need to be included in the treatment volume.⁴ IMRT technique had been used to avoid serious toxicity such as lung fibrosis, pneumonitis, and coronary heart disease for this patient. Nevertheless, the probability for radiation-induced secondary malignancies may augment when larger volumes of normal tissue are exposed to lower dose. The leakage and scatter dose to non-target tissues of the patients will be proportional to the number of monitor units used. For the protection of OAR (organ at risks), higher percentage in low-dose areas, which should be probably caused by increased leakage from more segments of IMRT.⁵ Therefore, chemotherapy combined with IMRT can be useful in treating ulcerative breast cancer, but this needs to be evaluated from multi-center clinical studies in future.

REFERENCES


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