

IMRT FOR A MALIGNANT MESOTHELIOMA

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Purpose : To report the use of intensity-modulated radiotherapy (IMRT) combined with chemotherapy in the treatment of a case of a malignant mesothelioma.

Materials and Methods : A case of a malignant mesothelioma of the right pleural cavity is reported here. This 65-year-old male patient had an initial complaint of persistent cough with blood-tinged sputum for 3 months, and associated symptoms were progressive shortness of breath and body weight loss. Because the patient's chest x-ray revealed right pleural effusion, the initial impression was lung cancer. A chest CT scan was performed and revealed a right infrahilar mass with atelectasis of the right lower lung, and a small nodular density in the right upper anterior lung segment. The final diagnosis of the CT scan was lung cancer of the right lower bronchus with atelectasis and right pleural effusion. A repeat chest PA after pleural fluid drainage revealed thickening of the right visceral and parietal pleurae. A thoracotomy with a pleural biopsy was performed 2 weeks after the CT scan. The pathology revealed an epithelial-type well-differentiated malignant mesothelioma; CK and EMA stains were positive, while CEA stain was negative. The TNM staging was T2N1M0. Radiotherapy was then arranged for this patient. A CT scan of the entire chest cavity in 5-mm slices was performed prior to radiotherapy for treatment simulation with a GE lightspeed scanner. Radiotherapy treatment planning was done with the Eclipse RTP system, version 6.5. Intensity-modulated radiotherapy (IMRT) was given to the entire right visceral and parietal pleurae for a total dose of 64.6 Gy in 38 fractions over a 61-day period from February 12 to April 22, 2003. The patient also received a course of chemotherapy with 100 mg cisplatin iv given 4 days before the start of radiotherapy.

Results : The patient, who was followed-up in the outpatient clinic every month, had suffered no local recurrence by 6 months after radiotherapy, and a follow-up CT scan showed slight pleural effusion with progressive regression of the right pleural cavity. The patient suffered a brain metastasis in October 2003. Palliative radiotherapy for the entire brain was given from October 18 to November 20, 2003 for a total dose of 42.5 Gy. The patient unexpectedly expired on November 30, 2003.

Conclusions : IMRT is an alternative treatment option for a malignant mesothelioma which is otherwise unsuitable for a radical extrapleural pneumonectomy (EPP). No severe radiation-induced pneumonitis was noted even with the high dose of IMRT. More clinical trials are needed to determine the benefit of this new treatment modality.

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Key words: Radiotherapy, Malignant pleural mesothelioma, IMRT