

AB028. PS01.10. Iodine-125 SEED implantation for thymic tumor pleural relapse after failure of chemoradiotherapy

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Background: Pleural relapse is a common type of failure after initial treatment for the primary mediastinal thymic tumor. Even after re-resection with adjuvant chemoradiotherapy, there is still a high risk for the malignancy to re-grow. Tumor's invasion to chest wall usually results in severe pain. Considering patients' poor condition due to intensive previous treatment, we explore I¹²⁵ seeds implantation as a palliative therapy for pleural relapse.

Methods: Patients included in this study meet these criteria: (I) localized pleural mass; (II) intolerable to systemic chemotherapy; (III) previous high dose radiation to thoracic cavity; (IV) no disorder of coagulation function. The I¹²⁵ seeds were input through an 18-G core needle, which was punctured into the mass with guidance of CT or ultrasound. The number and layout of I¹²⁵ particles were calculated according to BI_TPSTM (Brachy-In Treatment Planning System). The response was evaluated 2 months after the implantation.

Results: Between September 2016 and March 2017, there were 12 implantations performed in 9 patients (one male patient received 4 times of implantations). The age was between 30–78, and the gender ratio was 4:5 (male:female). The histological types were 3 B2, 2 B3 and 4 squamous cell carcinomas, respectively. The number of implanted particles varied from 19 to 58 with a dose (radio activity) ranging from 0.4 to 0.7 mCi. After evaluation, 11 out of 12 (92%) lesions showed complete (n=4) or partial response (n=7) to the brachytherapy. All three patients suffering pain in chest wall have their symptoms relieved. One tumor on the intralobular pleura did not achieve partial response due to seed migration caused by pneumothorax. During the 3–9 months follow-up, no tumors showed progression within the treated field. One patient died of bone marrow aplasia without confirmed relation to this brachytherapy.

Conclusions: I¹²⁵ seeds implantation is a safe and effective treatment for pleural relapse when chemotherapy and radiotherapy are not realizable. For patients with logistic problems, this palliative brachytherapy is especially useful due to short hospitalization.

Keywords: Thymic tumor; pleural recurrence; I¹²⁵ seed implantation

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