

Feasibility of tomotherapy to reduce cochlea radiation dose in patients with locally advanced nasopharyngeal cancer

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ABSTRACT

Aims and background. To evaluate the effectiveness of tomotherapy-based image-guided radiotherapy (IGRT) on the radiation dose to the cochlea in patients with nasopharyngeal cancer.

Methods and study design. A retrospective review of five patients undergoing concurrent chemoradiation with tomotherapy for locally advanced nasopharyngeal cancer was performed.

Results. The mean dose to the right and left cochlea was 25 Gy and 35.3 Gy respectively, while the dose to the gross tumor ranged from 70 to 75 Gy. All patients had excellent clinical response to the treatment at a median follow-up of five months.

Conclusions. IGRT for head and neck cancer delivered by tomotherapy can significantly decrease the radiation dose to the cochlea without sacrificing target volume coverage.

Key words: nasopharyngeal cancer, tomotherapy, image guided radiation therapy, cochlea sparing.

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