

CT and MR assisted HDR brachytherapy in exceptional location tumors

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Purpose: To demonstrate the feasibility of CT and/or MR assisted HDR brachytherapy in rare location tumors through a view of selected case reports.

Material and methods: Modern imaging assisted HDR brachytherapy is available since 2002 at our Institute. Cases were selected from the following locations: presacral region, bile duct, head and neck, and the auditory canal. All of the cases were recurrent tumor. Except the patients with auditory canal and bile duct carcinoma catheter implantation was performed intraoperatively under general anesthesia. Cross sectional imaging followed the catheter placement. For the auditory canal patient individual mould technique was used and catheters were placed with interventional radiology technique for the cases with bile duct cancer.

Results: For planning the information from the conventional X-ray technique was amplified with data from CT and/or MRI scan and a 3D GTV conceptual plan was used for the treatment. Taken into account the dose from the EBRT the achieved dose spread was feasible in all of the cases and a significant dose elevation was administered to the CTV. Due to the high dose gradient of the brachytherapy and the image based planning no grade 3-4 acute side effects or adverse events were observed.

Conclusion: CT and/or MR assisted HDR brachytherapy could provide a good and effective treatment alternative for recurrent tumors even in challenging regions.