

Refinement of treatment setup accuracy using stereotactic system for pediatric immobilization

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<Purpose>

The main purpose of this study was to investigate if stereotactic system for pediatric immobilization (SSPI) can decrease setup deviations.

<Material/Methods>

The last 7 pediatric patients treated with Elekta Synergy S 6 MV LINAC at that institution have been treated of tumors in the superior abdomen, lungs, head and neck, receiving 141 fractions of radiotherapy with a novel SSPI. This device, designed for patients up to 1.20 meters in height **has custom deformers for the Moldcare***, which achieve an excellent adaptation to the child's body, thermoplastic mask and stereotactic references.

<Results>

82.2% of these stereotactic treatment sessions carried out during the study remained in the tolerance range of displacements ≤ 3 mm in any direction.

<Conclusions>

SSPI significantly improves localization of pediatric tumors in comparison to classic setup of skin/cradle marks.

This reduction in the setup margin could lead to a significant clinical implications for second malignancies and acute and late radiation induced toxicities.

Remarks:

* Moldcare BR 3, 60cm x 60cm

Please refer to the original documents as attached.