

AbstractID: 14208 Title: Adaptive planning for neurofibro sarcoma of thigh on Helical Tomotherapy

Purpose: The presented study shares our experience of treating neurofibro sarcoma of thigh in two young patients using Helical Tomotherapy. **Method and Materials:** A lead shield was used to optimize the dose to the testes that reduced the scatter dose to testes by a factor of 10. Patient A was treated to a dose of 24 Gy delivered in b.i.d fractions of 1.2 Gy in 20 fractions and patient B to a dose of 50.4 Gy in 28 fractions with 1.8 Gy per fraction. For both patients kVCT images were used for planning with no testical shielding. A hypothetical contour was also used on the kVCT image to estimate the location of the lead shield that to be used during the treatment. In order to analyze the accuracy of delivered dose with the effect of a lead shield, adaptive planning was used for both patients. A body fix was used for the reproducibility of position for daily treatment. **Results:** The two significant ROI's in these cases were femurs and femoral heads. It was observed in case A that the shield position was placed at right location with respect to the plan and hence no changes were made. For patient B it was noted that the size of the lead shield contoured on the kVCT image were larger than actual size. In this case, a new adaptive plan was generated. The average dose to PTV in original and adaptive plan differ by 0.08 % but the average dose to right femur head alone is reduced almost up to 25%. **Conclusion:** Treatment of the upper thigh involves complications, as there are significant critical organs in such circumstances the adaptive planning plays an important role in finding correct dose distribution to ROI's and critical organs.

Conflict of Interest (only if applicable):