Purpose:

To explore the effect of the Jaw-tracking with RapidArc(JT-RapidArc) plans for upper thoracic esophageal cancer.

Methods:

Treatment planning was designed by using RapidArc and JT.RapidArc techniques for 11 consecutive patients. The dose-volume histogram parameters of PTV and the organs at risk(OAR), conformity index(CI), heterogeneity index(HI), low dose volume of normal tissue(B.P) and monitor units(MUs) were compared between the different techniques.

Results:

JT.RapidArc plans provided the better coverage of PTV1(64) D98 and HI(P<0.05), lower MLD, D2 of PTV1(64) and PTV2(54), but no statistically difference in CI(P>0.05), which comparison with RapidArc plans. Plans with JT.RapidArc had lower Lung of V5, V10, V13, V20, V30, MLD(P<0.05); heart of V20, MLD(P<0.05); and B.P of V5, V10, V15, V20, V30(P<0.05); but no significantly different in Spinal cord and SC.PRV as compared with RapidArc plans. JT.RapidArc plans increaseed the MUs by 1%(P>0.05) as compared with RapidArc plans.

Conclusion:

All of the plans had met the requirements of clinical dosimetry. JT.RapidArc plans as compared with RapidArc plans, showing better part of target coverage, part of OARS(lung and heart) and heart and B.P sparing, which MUs was slightly increased.

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