Purpose: the aim was to investigate the feasibility and accuracy of 3D quality assurance (QA) software in the daily workflow.

Methods: 30 cases with head & neck tumor (2010, Oct to 2011, Feb) were enrolled. Using Varian Eclipse version 8.6 treatment planning system, radiotherapy plans were generated for each case. According to individual condition, two radiotherapy techniques were applied (IMRT: 18 cases; RapidArc: 12 cases). All plans were delivered in Varian Trilogy accelerator. Based on the same plan, 2D and 3D QA techniques were applied sequentially to measure the plan twice. The device for 2D QA is MatriXX and the 3D QA is COMPASS, which are both produced by IBA Co. After measuring the plans, the $\gamma$ values ($0<\gamma<1$) both for MatriXX and COMPASS were obtained. Additionally, due to 3D analysis system, the $\hat{\gamma}$ values for organs were obtained at COMPASS. Then the values for organs were compared to MatriXX values respectively.

Results: among the $\hat{\gamma}$ values of organs such as eyes, parotid, brainstem and spinal cord, there was no significant difference to MatriXX value, with p value of 0.502, 0.518, 0.826 and 0.203. In the other hand, the $\hat{\gamma}$ values of lens and optic chiasma were smaller than MatriXX's with p value of 0.014 and 0.022. In the comparison, the $\hat{\gamma}$ value of PTV were in good co-ordinate with MatriXX's, with p value of 0.838.

Conclusions: the comparison data showed that, because of small volume, lens and optic chiasma didn't represent uniform. However, the COMPASS as 3D QA tool could achieve good measurement totally as traditional 2D planar technique dose. As the lightspot, multi-organ dosimetric analysis could be very helpful for physicists and clinical oncologists.

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no conflict