

Retrospective study on organ motion during external Beam radiotherapy for localized prostate cancer.

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In this study effort has been made to assess the variation in rectal surface area, (rectal volume) from a planning CT scan to a repeat CT scan and also the dynamic interrelationship between rectal surface area change and anterior posterior (AP) prostate movements were assessed. This study would be very helpful to have an idea how inter fraction organ motion affects the planning target volume delineation. About 95 percentage of patients with localized prostate cancer, who are undergoing radiotherapy as a primary treatment modality has an average AP prostate motion less than 1cm. One centimeter margin to gross tumour volume is important to minimize a geographical miss while on radiotherapy. Efforts has been made to identify 5 percentage of patients, who need repeat CT scanning for replanning of PTV. According to observations made in this study, it seems to be important to rescan patients for replanning, those who have a very low initial AP rectal diameter or very large initial AP rectal diameter. To get a particular rectal diameter to decide, whether to do a repeat scan or not needs further studies on this subject. But as a basic guideline, average AP rectal diameter of 4.43cm +/- 2SD (SD=1.3cm) could be taken to make decision regarding repeat CT scans for patients with prostate cancer, who are undergoing curative radiotherapy.