

عنوان مقاله:

Comparison of Prostate and Bladder Volume Measurements from MRI and Pre- and Post-MRI Ultrasound Images

محل انتشار:

مجله سرطان خاورمیانه، دوره 1، شماره 4 (سال: 1389)

تعداد صفحات اصل مقاله: 7

نویسندگان:

Milad Baradaran-Ghahtfarokhi - *Medical Physics and Medical Engineering Department, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran*

Mohammad Hadi Bagheri - *Medical Imaging Research Center and Department of Radiology, Shiraz University of Medical Sciences, Shiraz, Iran*

Mehrzaad Lotfi - *Medical Imaging Research Center and Department of Radiology, Shiraz University of Medical Sciences, Shiraz, Iran*

Mohammad Amin Mosleh-Shirazi - *Center for Research in Medical Physics and Biomedical Engineering and Radiotherapy Department, Shiraz University of Medical Sciences, Shiraz, Iran*

Reza Faghihi - *Medical Radiation Department, School of Mechanical Engineering, Shiraz University, Shiraz, Iran*

Kamal Hadad - *Medical Radiation Department, School of Mechanical Engineering, Shiraz University, Shiraz, Iran*

Sedigheh Sina - *Medical Radiation Department, School of Mechanical Engineering, Shiraz University, Shiraz, Iran*

خلاصه مقاله:

Background: Safe dose escalation is highly desirable in radiotherapy for prostate cancer. Prostate displacement due to bladder filling can be significant, so improved targeting of the prostate by ultrasound imaging potentially allows for a reduction in the target margin and consequently less toxicity. This study estimates the accuracy of ultrasound for prostate and bladder volume measurements by comparing ultrasound images taken immediately before and after magnetic resonance imaging to reduce the effect of organ filling on measurement accuracy. Methods: Three patients with a wide range of prostate sizes underwent pelvic magnetic resonance imaging and ultrasound imaging. We tested the correlation between the two measurements and the differences between the ultrasound measurements before and after magnetic resonance imaging using statistical analysis. Results: Based on a total number of 18 volume measurements, a strong linear correlation was found ($r=0.95$), but there were no significant differences between ultrasound imaging performed before and after magnetic resonance imaging ($P=0.809$). Conclusion: Our results provide additional evidence that ultrasound imaging measures bladder and prostate volumes in a reproducible and accurate manner over a wide range of volumes, which enables its use with different fractions of prostate radiotherapy.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

