PROSTATE CANCER

MRI accurately predicts pathological stage

Prostate cancer pathological stage is reliably predicted by 3-Tesla (3T) MRI, new research reveals. "3T MRI showed a significantly higher accuracy than the Partin tables in predicting final pathological stage," says Herbert Augustin from the Medical University of Graz, Austria.

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Prediction of pathological stage is essential for the selection of the most suitable treatment for prostate cancer. Clinical examinations for disease staging, such as digital rectal examination, are, however, prone to inaccuracies. The Partin tables use information derived from digital rectal examination, as well as serum PSA levels and biopsy Gleason score. Augustin and colleagues assessed the accuracy of 3T MRI with a phased-array coil (which promises better image resolution than other magnetic field intensities) in pathological-stage forecasting, in comparison to Partin tables.

The researchers randomly selected 27 patients (mean age 62.8 years, mean serum PSA value 8.9 ng/ml) referred for radical prostatectomy for clinically localized prostate cancer between January 2006 and October 2007 to undergo preoperative MRI. Histopathology of prostatectomy specimens classified 21 cases as organ-confined stage pT2c disease and 6 cases as stage pT3a disease with extracapsular extension. The stage predicted by 3T MRI correlated with final pathological stage in 19 of the former and 4 of the latter cases (85.6% overall). Compared with the Partin tables, 3T MRI was considerably more accurate in predicting the final pathological stage (Spearman rank correlation coefficient ~0.3 versus ~0.8).

With regard to extracapsular extension, the specificity of 3T MRI was high (100%) and the sensitivity moderate (66.7%). Augustin's team concludes that, unlike the Partin tables, 3T MRI can provide side-specific information for extracapsular extension, which could facilitate unilateral nerve-sparing surgery.

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Original article Augustin, H. *et al.* Accuracy of 3-Tesla magnetic resonance imaging for the staging of prostate cancer in comparison to the Partin tables. *Acta Radiol.* **50**, 562–569 (2009).