磁共振成像

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前列腺癌(prostate cancer,Pca)是男性最常见的恶性肿瘤,致死率排男性恶性肿瘤的第二位。随着我国人口老龄化的不断进展和前列腺特异性抗原(prostate specific antigen,PSA)筛查的普及,前列腺癌的发病率逐年上升。PSA对于前列腺癌的检出敏感度很高,但特异度较差,在前列腺炎、良性前列腺增生(benign prostatic hyperplasia,BPH)中也可能出现,PSA的假阳性会引发患者的焦虑,后续前列腺活检可能带来的术后并发症,以及对惰性前列腺癌的过度诊断及过度治疗。目前前列腺成像报告和数据系统的新版本(Prostate Imaging Reporting and Data System,PI-RADS v2)推荐使用 T2 加权成像(T2-weighted imaging,T2WI)、扩散加权成像(diffusion-weighted imaging,DWI)和动态对比增强成像(dynamic contrast-enhanced imaging,DCEI)对前列腺癌进行标准化评分。但 DCEI 扫描时间长、检查费用高且需要注射对比剂,临床应用较为受限。部分研究表明添加 DCEI 并没有增加前列腺 MRI 检查的诊断价值,选取只包含 T2WI 及 DWI 的双参数磁共振成像(biparametric magnetic resonance imaging,bpMRI)就能近似达到标准 PI-RADS 磁共振序列的临床诊断准确性。目前国内外的前列腺癌 MRI 检出研究的病理参考多为穿刺结果,但穿刺结果有一定的选择偏倚,无法全面展示每个独立病灶的详细病理信息。病理大切片将整个前列腺包埋切片,可以将每个独立病灶与 MR 图像进行关联,是理想的病理参考。本研究基于病理大切片结果,将 bpMRI 和病理大切片标出的病灶进行逐一地匹配,探索了影响前列腺癌检出的独立因素,评估了 bpMRI 在前列腺癌检出方面的敏感度。详见内文第30～34页。

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About the cover

Prostate cancer (PCA) is the most common malignancy in men, with the second fatality rate of malignancy. With the aging of China's population and the popularization of prostate specific antigen (PSA) screening, prostate cancer incidence is increasing year by year. PSA is highly sensitive to the detection of prostate cancer, but its specificity is lacking. It may also occur in prostatitis and benign prostatic hyperplasia (BPH). False positives of PSA may cause anxiety in patients, postoperative complications caused by subsequent prostate biopsy, and the overdiagnosis and overtreatment of inert prostate cancer. The new version of the current Prostate Imaging Reporting and Data System (PI-RADS v2) recommends using T2-weighted Imaging (T2WI), diffusion-weighted imaging (DWI), and dynamic contrast-enhanced imaging (DCEI) to standardized score prostate cancer. However, the clinical application of DCEI is limited due to its long scanning time, high examination cost, and the need for injection of contrast agent. Some studies have shown that adding DCEI does not increase the diagnostic value of prostate MRI. Biparametric magnetic resonance imaging (bpMRI) containing only T2WI and DWI can approximate the clinical diagnostic accuracy of standard PI-RADS magnetic resonance sequences. At present, the pathological reference of MRI detection of prostate cancer is mostly based on biopsy, but biopsy results have a particular selection bias. They can not fully display the detailed pathological information of each independent lesion. The whole-mount section, which able to correlate each lesion MR image, is an ideal pathological reference. Based on the results of the whole mount section, this study matched the lesions identified by bpRMI and the whole mount section one by one, to explore the independent factors affecting the detection of prostate cancer and evaluate the sensitivity of bpRMI in the detection of prostate cancer. See text page 30-34.