

PP-02**Morphological assessment of anterior lesions on prostate MP-MRI**

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Introduction: Anterior tumours are often missed on current transrectal biopsy strategies. In addition, they overlap with adenomas on multi-parametric MRI making their differentiation difficult. Morphological and MRI quantitative signal characteristics may aid in providing useful distinguishing features.

Patients & Methods: 31 patients underwent MP-MRI (biopsy naïve, raised PSA) with a suspicious lesion in the transition (TZ) but NO peripheral zone (PZ) lesion, followed by transperineal targeted biopsy. Significant tumour was defined as a cancer core length of >3mm and/or any Gleason 4 component from histology in the lesion. On MP-MRI, the PZ and TZ were separately scored between 1 (tumour unlikely) and 5 (tumour very likely).

Results: Multiple parameters were assessed and the following was observed:

Histology	Abutting / based on the AFMS	Pseudo capsule	Enhancement homogeneous	T2 homogenous	B1400 signal > TZ
Benign	6/16 38%	7/16 44%	2/16 12%	11/16 69%	5/16 31%
Malignant	15/15 100%	0/16 0%	12/15 80%	15/15 100%	14/15 93%

First, a lesion was highly unlikely to be malignant if it did not abut or lie within the anterior fibromuscular stroma or if it did not show a pseudocapsule. If MP-MRI suspicious lesions which had absence of these features were reclassified as negative, 63% and 44% (respectively) of false positives in the TZ could have been avoided. Second, tumours showed high signal intensity on the b=1400 image compared to TZ. Third, homogeneity on T2 and contrast-enhanced sequences predicted tumour.

Conclusion: The identification of anterior lesions on MP-MRI is a challenge. We have identified multiple MRI features that may allow malignant lesions to be more accurately differentiated from benign lesions in this area.