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Scientific Abstract

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MRI-Guided In-Bore Prostate Biopsy For Prostate Cancer: A Retrospective Review From A Single Tertiary-Centre

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OBJECTIVES

- Evaluate lesion characteristics referred for MRI-guided in-bore prostate biopsies performed at a tertiary institution.
- Correlate imaging findings based on the PI-RADS (prostate imaging and reporting data systems) score with histopathological cancer grading.

MATERIALS AND METHODS

- A retrospective review of all MRI-guided in-bore prostate biopsies performed between September 2016 and December 2018 at a tertiary centre was undertaken.
- Spearman's rank analysis was performed to identify correlation between PI-RADS and histological grading.
- A Gleason score of $\geq 3+4=7$ (i.e. an ISUP, International Society of Urological Pathology, score ≥ 2) was considered clinically significant disease.

RESULTS

- 107 lesions were referred for MRI-guided in-bore biopsy in 100 patients. Of these, 9 patients did not undergo biopsy (8 target lesion no longer present, 1 patient MRI intolerance).
- One PI-RADS 2 lesion was biopsied and was benign.
- 23 PI-RADS 3 lesions were biopsied with 13% returning with ISUP 2 disease, and the remaining as benign or ISUP 1.
- 53 PI-RADS 4 lesions were sampled, of which 51% returned with clinically significant disease.
- 13 PI-RADS 5 lesions were biopsied, with 61% yielding clinically significant disease.
- There is a positive relationship between the PI-RADS of a lesion and the likelihood of it being clinically significant disease, $r = 0.353$, $p < 0.001$.
- Two post-procedural complications were identified (rectal bleeding and urosepsis).

CONCLUSION

- There is a positive correlation between PI-RADS and returning clinically significant disease on MRI-guided in-bore prostate biopsy.
- MRI-guided in-bore prostate biopsy provides a safe and effective method of performing targeted prostate sampling.