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Effect of multidisciplinary approach on diagnostic performance of MRI in prostate cancer detection

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Background

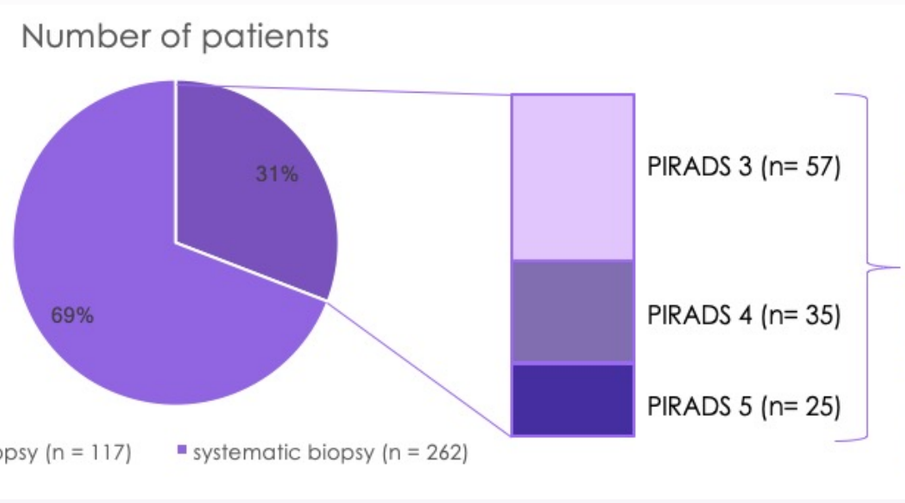
- Multiparametric MRI (mpMRI) is an emerging tools for diagnosis of prostate cancer
- mpMRI has a higher sensitivity than systematic transrectal biopsy and can detect 18% more clinically significant prostate cancer

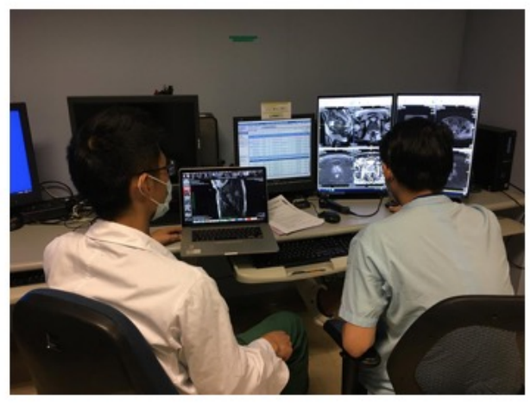
Objective

To identify the effect of multidisciplinary approach on prostate cancer detection from mpMRI

Patients & Methods

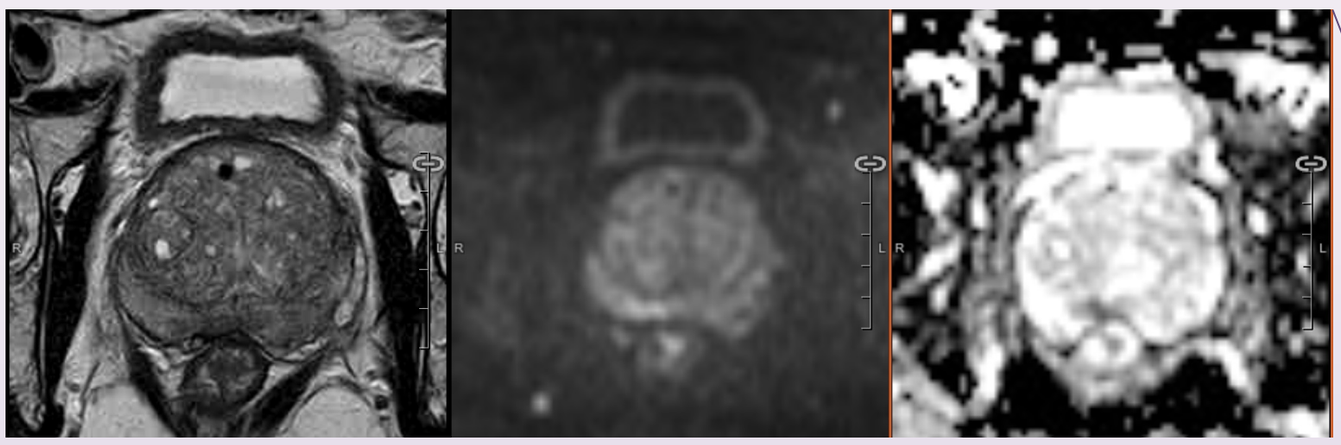
- A total of 117 patients underwent targeted and systematic transperineal prostate biopsy in same session between June 2018 to June 2021 were reviewed retrospective.
- mpMRI were reviewed before biopsy in a multidisciplinary team involving radiologist, urologist and pathologist.
- MRI guided cognitive-fusion target biopsy were performed for PI-RADS ≥ 3 lesions whereas systematic transperineal prostate biopsy were performed under Ginsburg protocol.
- The anatomical location, and pathological outcome from prostate biopsy and prostatectomy specimens were correlated to MRI findings.

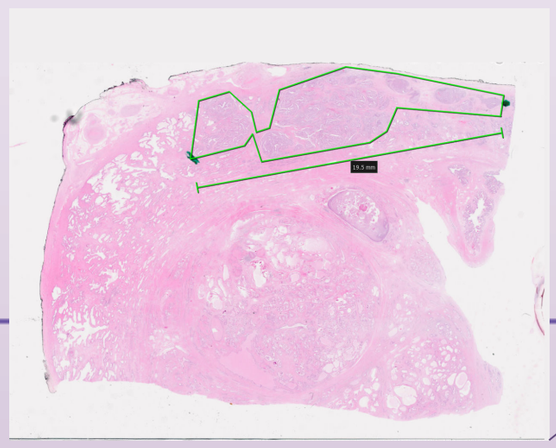


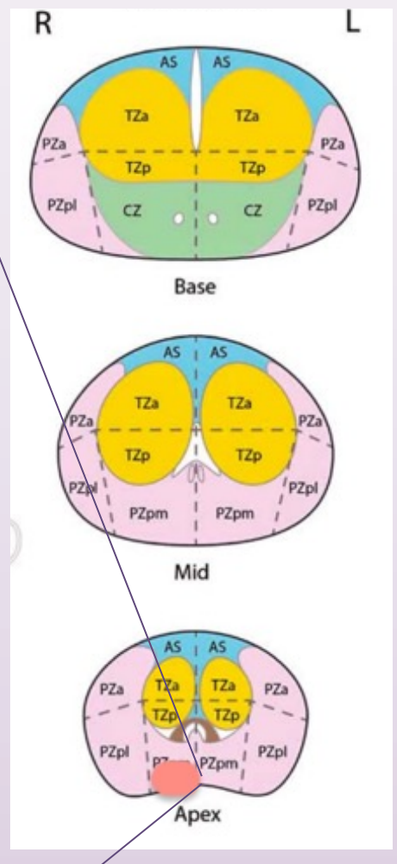


Results

- Cancer detection rate for MRI fusion biopsy was 45.3% (53/117 patients).
- Detection rates for PI-RADS 3-, 4- and 5-lesions were 8.5%, 50% and 84% respectively.
- Targeted biopsy has resulted in 13.2% pathological upgrading in Grade Group when compared to systematic biopsy (7/53 patients).
- 12 patients underwent radical prostatectomy, anatomical concordance analysis showed a low mismatch between the MRI positive regions and significant prostate cancer areas in radical prostatectomy specimens.







Anatomical concordance analysis between the MRI imaging and radical prostatectomy specimen

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