



Multiparametric Imaging of the Prostate

-Dr. Shilpa Sankhe

Multiparametric MRI (mp-MRI) is a promising method for the detection, localisation and local staging of prostate cancer.

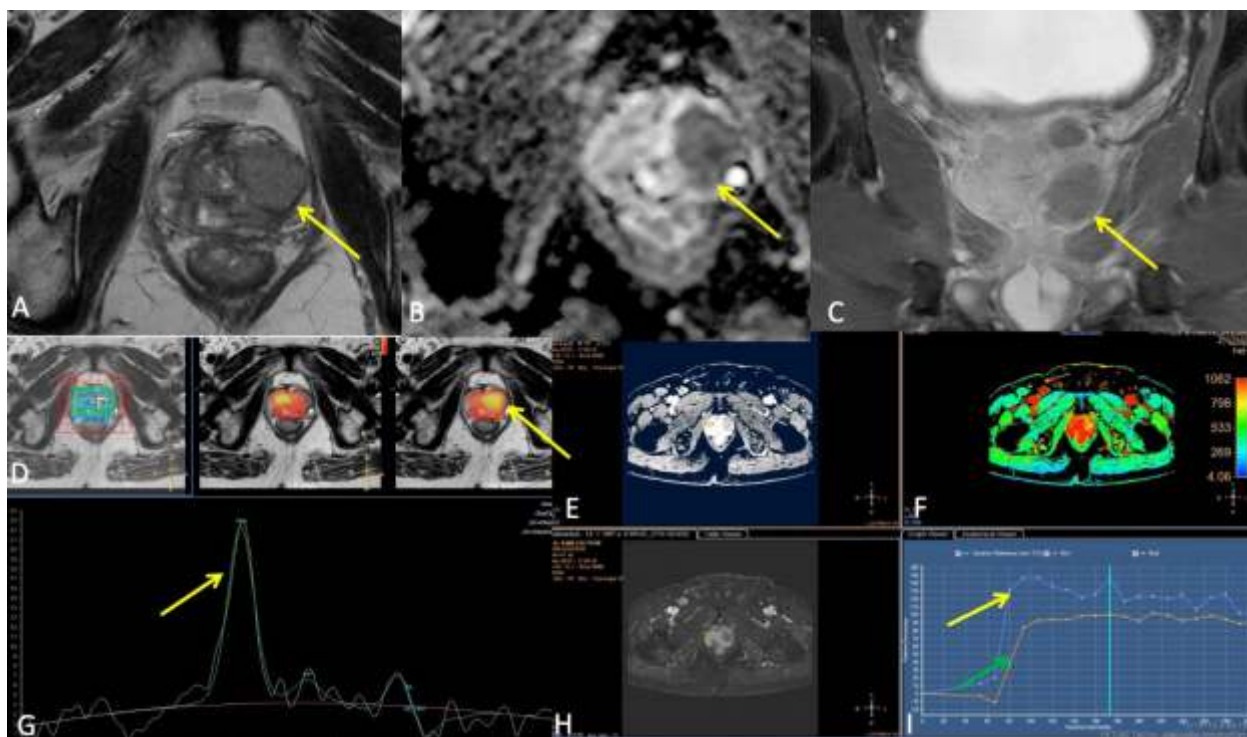
The term multiparametric implies that multiple parameters are used to image an organ. In the prostate, a combination of T2-weighted, diffusion, perfusion (dynamic contrast) and spectroscopy sequences constitute the mp-MRI protocol.

To assist in the diagnosis, the Prostate Imaging and Reporting Archiving Data System scoring system (PIRADS) similar to BIRADS for mammography reporting is now used during interpretation.

Indications

- 1 Diagnosis of prostate cancer. When PSA levels are elevated, mp-MRI helps identify abnormal areas. When a PIRADS 4 or PIRADS 5 nodule is diagnosed, a trans-rectal USG guided biopsy is then performed. The sensitivity and specificity for the diagnosis of clinically significant prostate cancer is high.
- 2 Staging of prostate cancer. To identify extracapsular spread and lymphadenopathy.
- 3 Recurrent disease. For identification and staging.

Fig. 1 (A-I): Case 1. History of raised serum PSA of 7ng/dl. Axial T2W image (A) shows a hypointense solid nodule in the left peripheral zone (arrow), exhibiting dark ADC signal on the diffusion image (arrow in B) and hypoenhancement on the delayed post contrast scan (arrow in C). MR spectroscopy with spectral maps (D-G) reveals increased choline concentration in the region of nodule. Tall choline peak is evident (yellow arrow in G). Dynamic contrast perfusion study (H,I) reveals early enhancement of the nodule in the left peripheral zone (yellow arrow) as compared to the contralateral normal side (green arrow).





At a glance:

- ◆ mp-MRI has become an integral part of prostate imaging, along with PSMA PET/CT and transrectal ultrasound (TRUS)
- ◆ Its main role is in detection of prostatic cancer, in staging and for recurrent disease

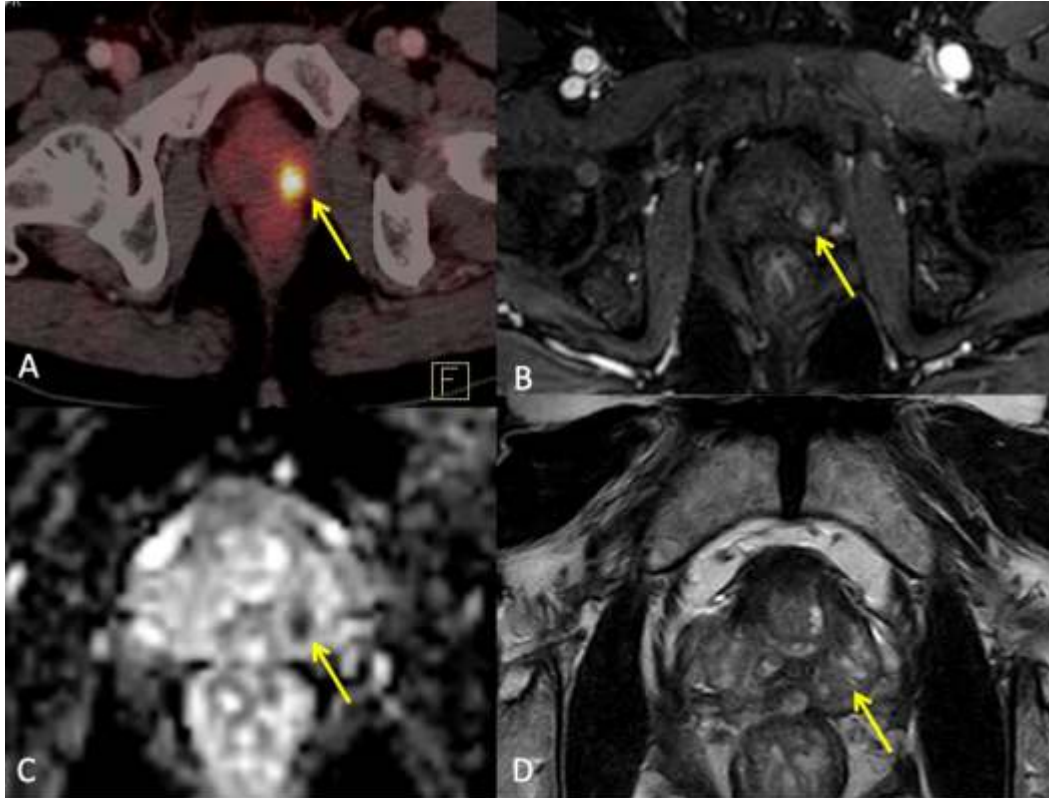


Fig. 2 (A-D): Case 2. This elderly male had a small nodule detected on transrectal ultrasound with mild elevation of PSA 3.5ng/dl and came for simultaneous PSMA-PET/CT and mp-MRI. PSMA-PET/CT shows focal uptake in left peripheral zone (arrow in A). Dynamic perfusion study shows a focus of hyperperfusion in the early arterial image (arrow in B) with low ADC values on the diffusion study (arrow in C). The lesion is not well appreciated on the T2W image due to its small size.

Subscribe to INNER SPACES : info@jankharia.com
Online version : <http://picture-this.in/index.php/inner-spaces/>

Main Clinic

383 | Bhaveshwar Vihar | Sardar V. P. Road | Prarthana Samaj | Charni Road | Mumbai 400 004 | T: 022 66173333

Cardiac, Chest & Interventional Twin Beam CT

Nishat Business Centre | Arya Bhavan | 461 | Sardar V. P. Rd | Next to Marwari Vidyalaya | Mumbai 400 004 | T: 022 6848 6666

PET / CT, Organ Optimized 3T MRI

Gr. Floor | Piramal Tower Annexe | G. K. Marg | Lower Parel | Mumbai 400 013 | T: 022 6617 4444

Owner, Printer & Publisher: Dr. Bhavin Jankharia

Published at: Dr. Jankharia's Imaging Centre

Bhaveshwar Vihar, 383, S.V.P. Road, Prarthana Samaj, Charni Road, Mumbai 400 004.