

與大師對談

王俐人教授

2020-10

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- 依照臨床時序，請大師模擬一線放射科醫師；於未知診斷，或者有限度臨床線索之情形下，進行閱片及解讀。
- 鑑別診斷為主要，確定診斷為次要。
- 目的在於學習大師之影像判讀邏輯思考。
- 請大師給予本院影像品質建議：
Protocols, techniques, etc.

CASE 1

67 Y/O MAN

Brief history

- **Past history**

None

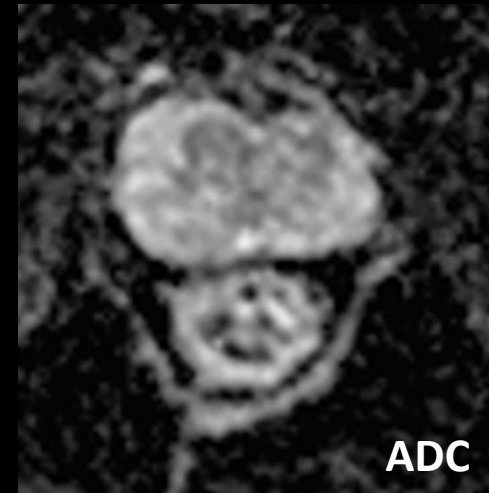
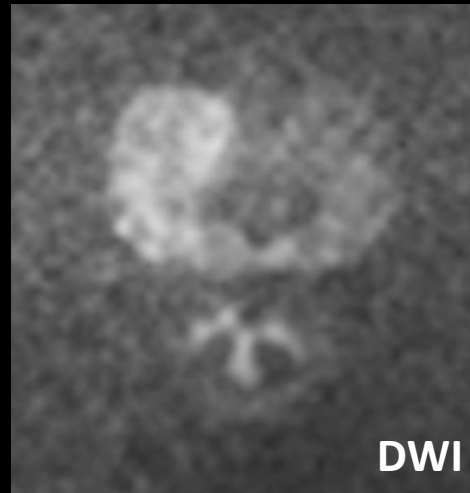
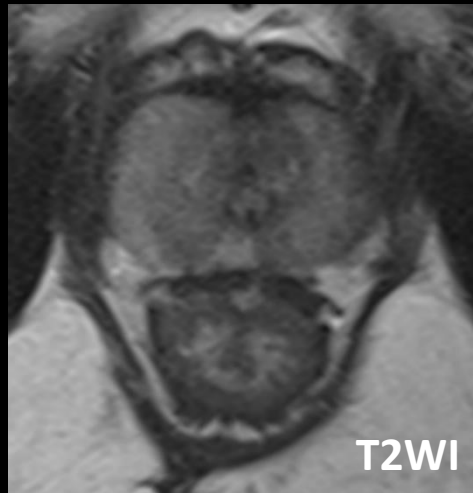
- **Chief complain**

elevated PSA (iPSA=21)

Imaging studies

Prostate MRI (no C) (2020.10.06)

Prostate MRI



- ✓ High DWI signal at right lobe of prostate gland (~1.9cm)
- ✓ No corresponding T2 hypointensity or low ADC value
- ✓ Bulging appearance

➔ **PI-RADS: T3a lesion**

Differential Diagnoses

- Prostate cancer
- Post-biopsy hemorrhage
- Chronic prostatitis

→ Pathology report

Prostate cancer

(Gleason score 3+3)

Prostate cancer

- Primarily disease of elderly men
- 95% prostatic adenocarcinoma
- Gleason score for pathological diagnosis
- Location of occurrence:
 - 70% Peripheral zone (PZ)
 - 20-25% Transitional zone (TZ)
 - 5-10% Central zone (CZ)
- Role of imaging:
 - assist in a successful biopsy
 - MR for local staging
 - whole-body staging

PI-RADS

PI-RADS

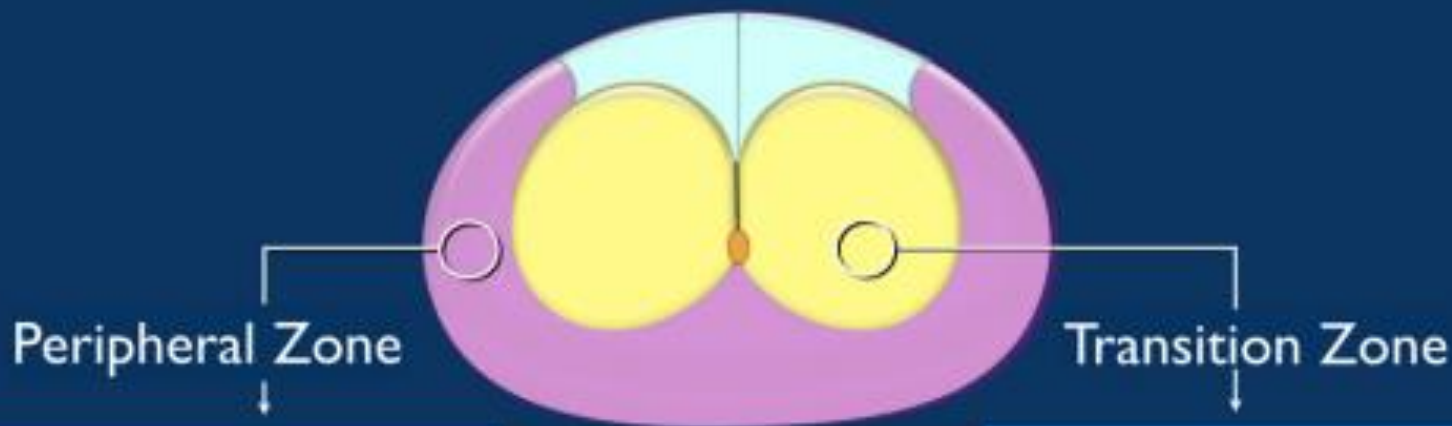
PI-RADS 1 = Very low (clinically significant cancer highly unlikely)

PI-RADS 2 = Low (clinically significant cancer unlikely)

PI-RADS 3 = Intermediate (clinically significant cancer equivocal)

PI-RADS 4 = High (clinically significant cancer likely)

PI-RADS 5 = Very high (clinically significant cancer highly likely)



| DWI / ADC | | | T2 WI | |
|-----------|--|-------|----------|--|
| 1 | DWI/ADC normal | | 1 | Normal |
| 2 | DWI/ADC indistinct hypointense | | 2 | Circumscribed hypointense or heterogeneous encapsulated nodules (BPH) |
| 3 | ADC → focal mild/moderate hypointense | DCE - | 3 | Heterogeneous signal intensity with obscured margins or lesions that do not fall in other categories |
| | DWI → iso/mild hyperintense | | | |
| 4 | ADC → focal markedly hypointense | DCE + | 4 | Lenticular or noncircumscribed, homogeneous, moderately hypointense and <1.5cm |
| | DWI → markedly hyperintense | | | |
| 5 | Similar to 4 but ≥ 1.5cm or definite extraprostatic extension | | 5 | Similar to 4 but ≥ 1.5cm or definite extraprostatic extension |

PI-RADS 1

PI-RADS 2

PI-RADS 3

PI-RADS 4

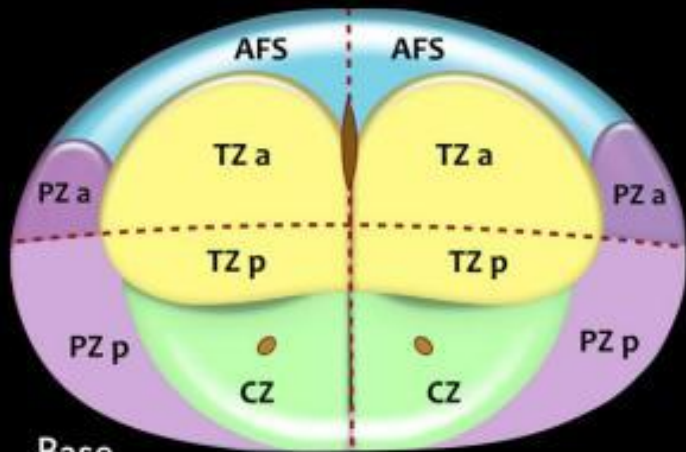
PI-RADS 5

Peripheral Zone

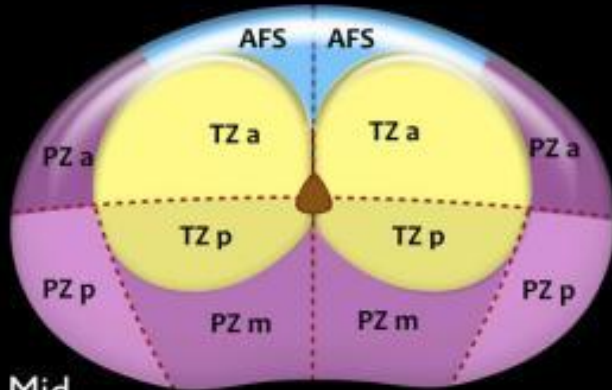
| ADC | ADC | DWI | T2WI |
|---|-----|-----|------|
| 1 Normal | | | |
| 2 ADC: Indistinct hypointense | | | |
| 3 ADC: focal mild/moderate hypointense DWI: iso/mild hyperintense < 1.5 cm | | | |
| 4 ADC: focal markedly hypointense DWI: markedly hyperintense < 1.5 cm | | | |
| 5 Similar to 4 but \geq 1.5cm or definite extraprostatic extension | | | |

Transition Zone

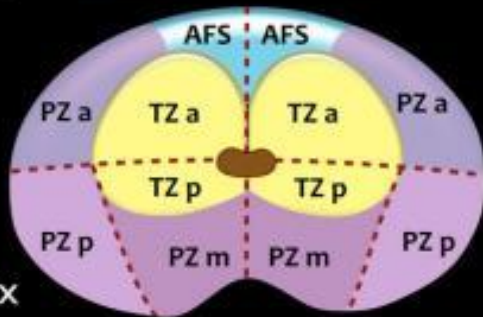
| T2WI | T2WI | ADC | DWI |
|--|------|-----|-----|
| 1 Normal | | | |
| 2 Circumscribed hypointense or heterogeneous encapsulated nodules (BPH) | | | |
| 3 Heterogeneous signal intensity with obscured margins or lesions that do not fall in other categories | | | |
| 4 Lenticular or noncircumscribed, homogeneous, moderately hypointense and < 1.5cm | | | |
| 5 Similar to 4 but \geq 1.5cm or definite extraprostatic extension | | | |



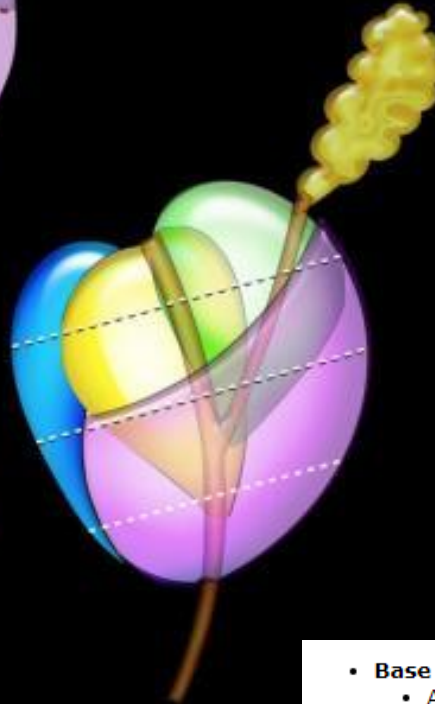
Base



Mid



Apex



- **Base** has 6 sectors on each side:
 - AS: anterior fibromuscular stroma
 - TZ: anterior and posterior transition zone
 - PZ: anterior and posterior zone
 - CZ: central zone around the ejaculatory ducts
- **Midportion** also has 6 sectors on each side:
 - AS: anterior fibromuscular stroma
 - TZ: anterior and posterior transition zone
 - PZ: anterior, posteromedial and posterolateral peripheral zone
- **Apex** also has 6 sectors on each side:
 - AS: anterior fibromuscular stroma
 - TZ: anterior and posterior transition zone
 - PZ: anterior, posteromedial and posterolateral peripheral zone
- **Seminal vesicles** are divided into left and right
- **Urethral sphincter** is marked in the prostate apex and along the membranous segment of the urethra.