



JOHNS HOPKINS
M E D I C I N E



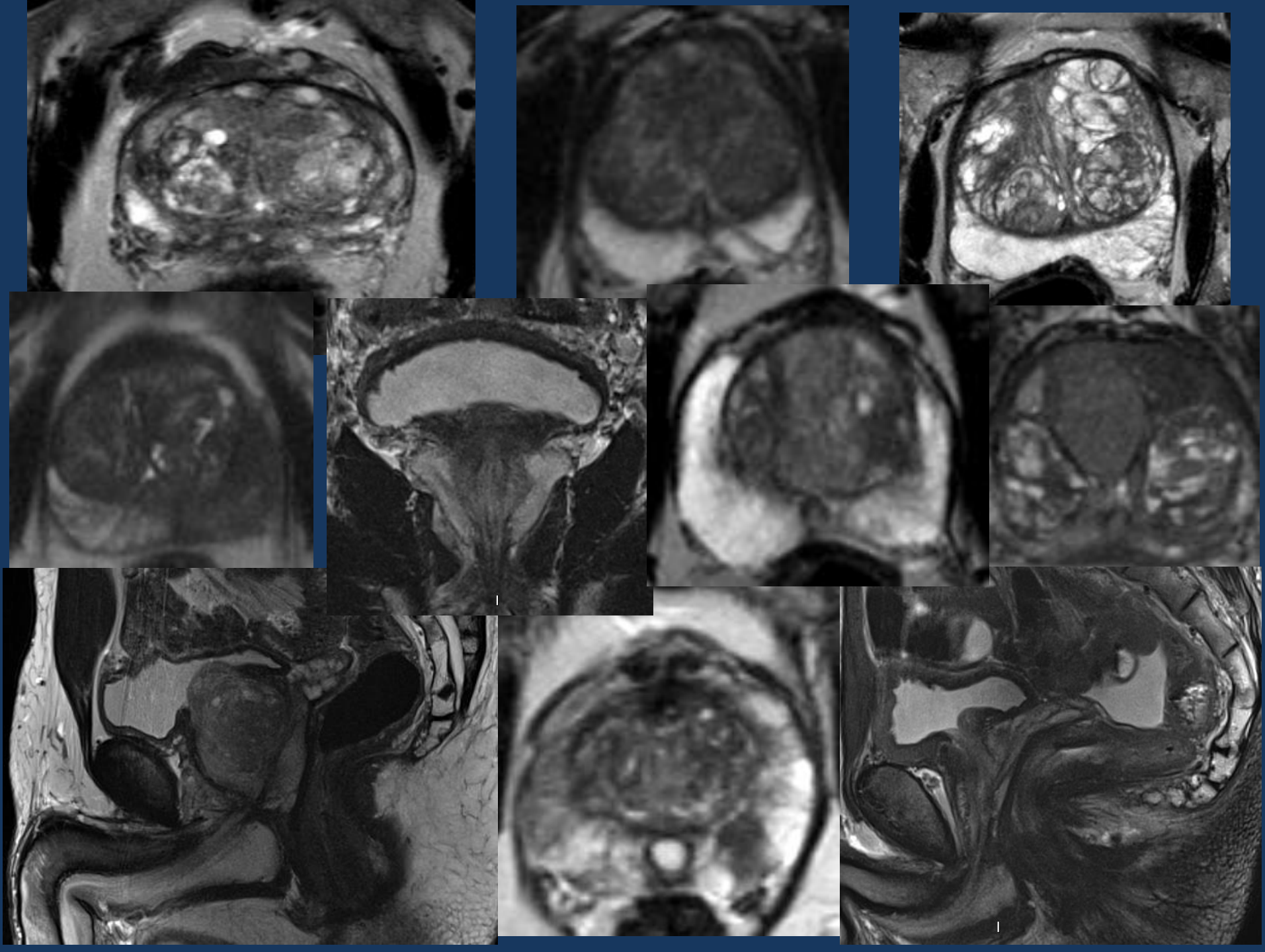
Using the Prostate Imaging - Reporting and Data System (PI-RADS version 2.1) for Scoring Prostate Lesions on Multiparametric Prostate MRI

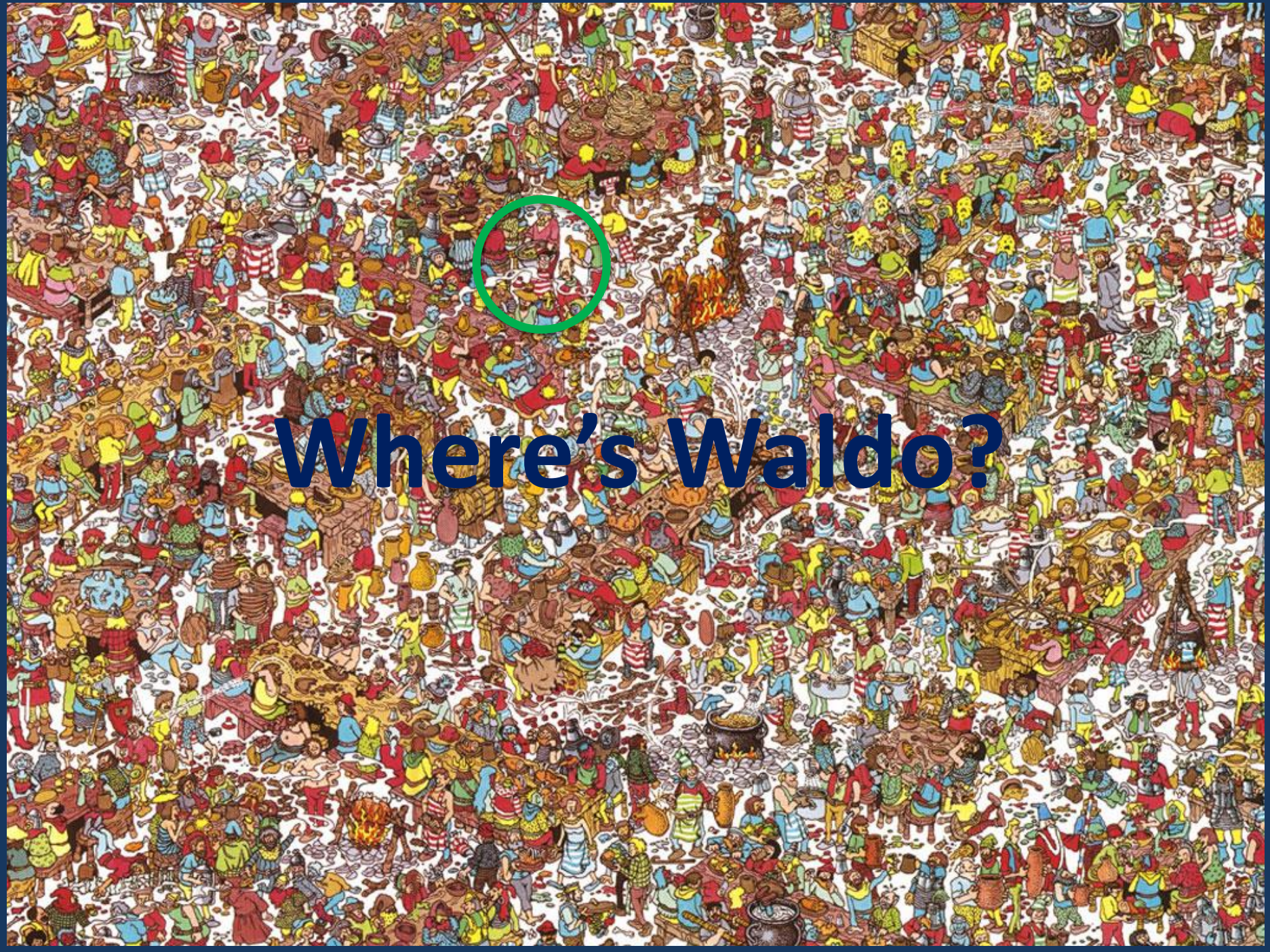
Katarzyna J. Macura, MD, PhD, FACR

Professor of Radiology, Urology, and Oncology

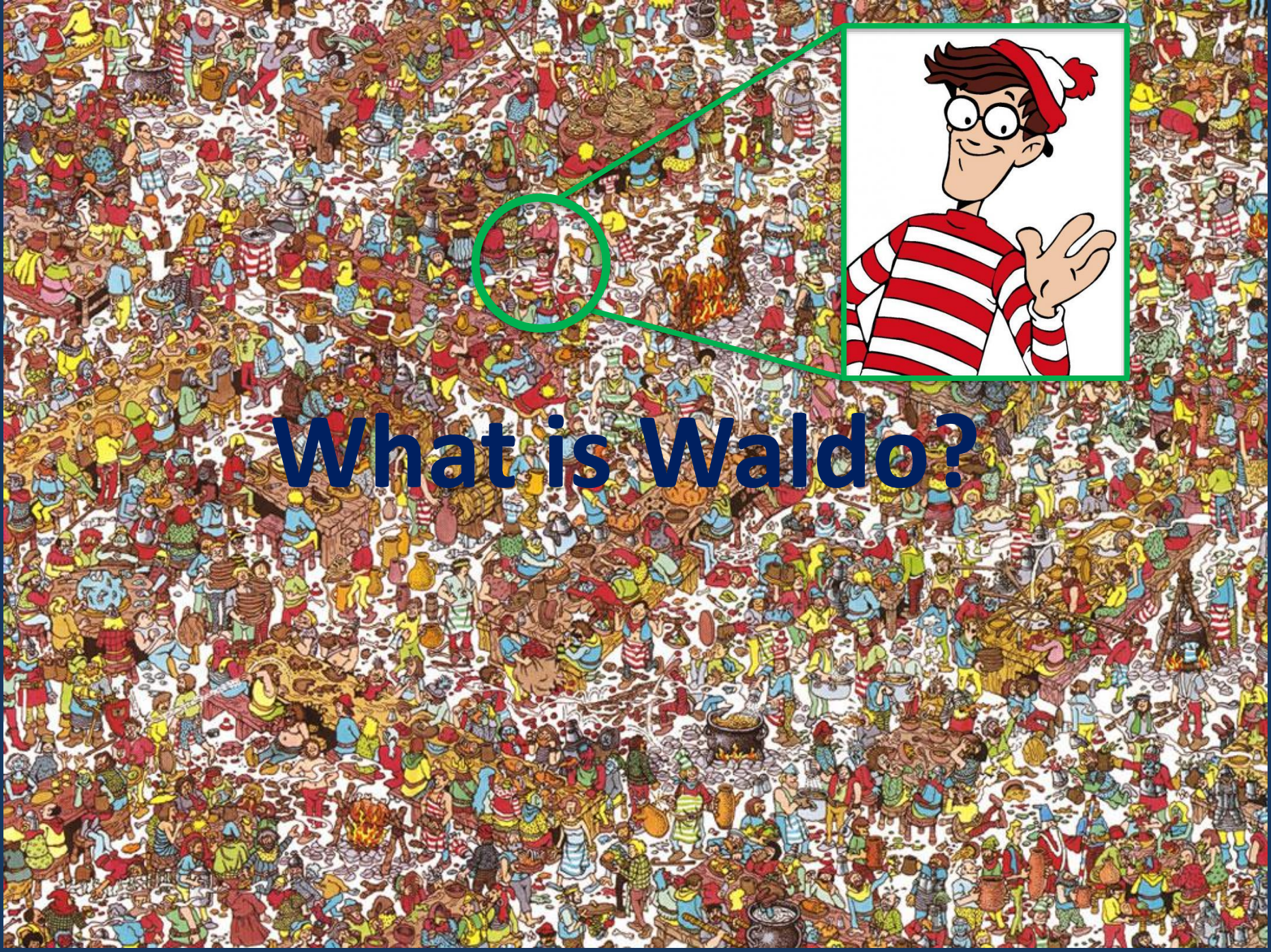
**The Russell H. Morgan Department of Radiology and
Radiological Science, Johns Hopkins University**

Baltimore, MD





Where's Waldo?



What is Waldo?

PI-RADS v2.1

Prostate Imaging Reporting and Data System

**5 point scale to predict
MR-visible nodule's likelihood of
being a clinically significant
cancer**

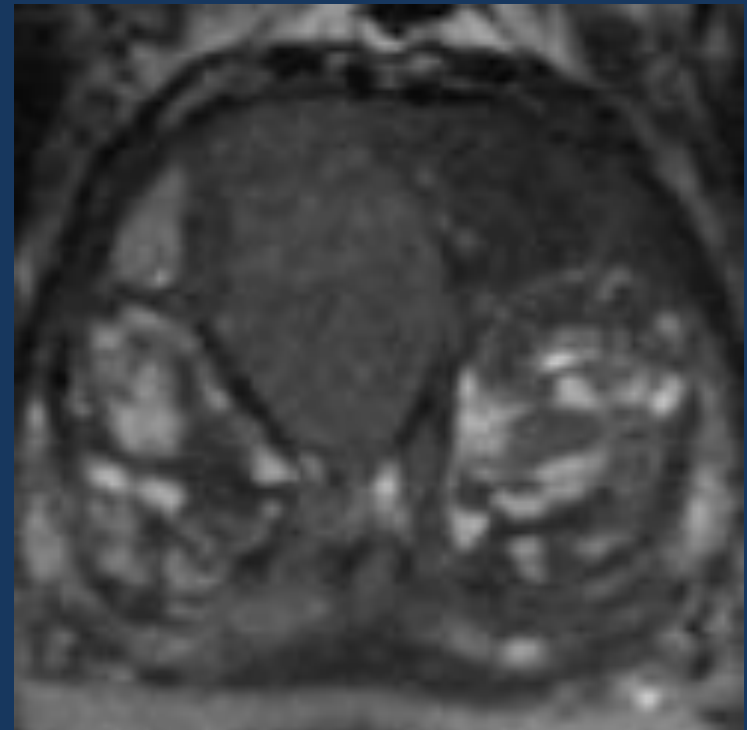
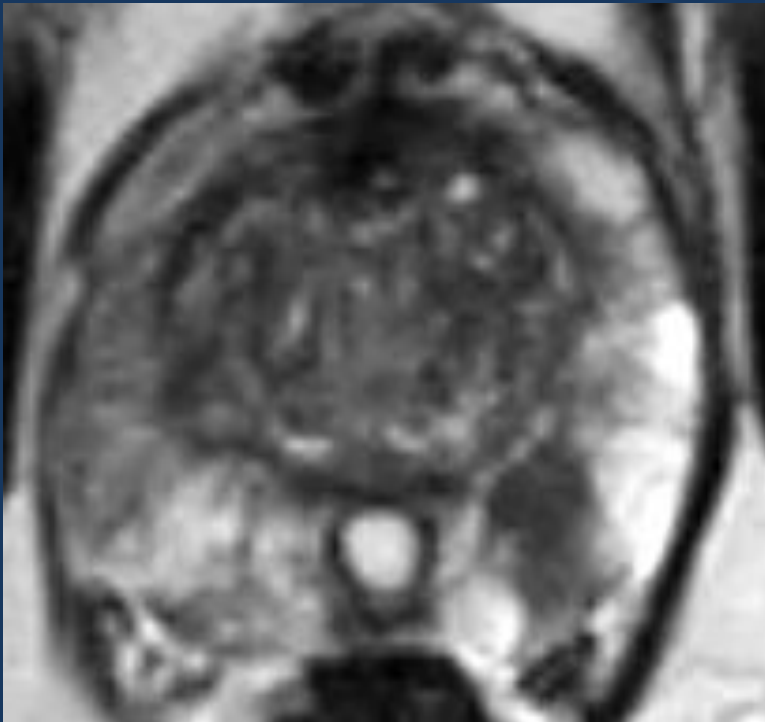
PI-RADS Version 2.1 European Urology 2019

PI-RADS Assessment Categories

- | | | |
|---|--------------|--|
| 1 | Very low | clinically significant cancer is highly unlikely |
| 2 | Low | clinically significant cancer is unlikely |
| 3 | Intermediate | clinically significant cancer is equivocal |
| 4 | High | clinically significant cancer is likely |
| 5 | Very high | clinically significant cancer is highly likely |

Prostate Background Assessment

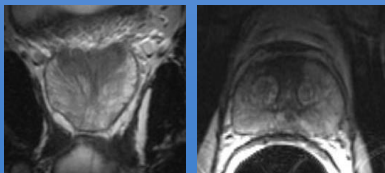
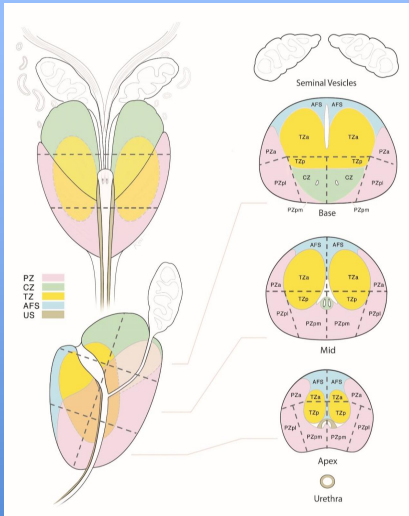
- What is FOCAL and different from the background?
- What is ASYMMETRIC?



Step-by-step Assessment

1

Anatomical Localization



2

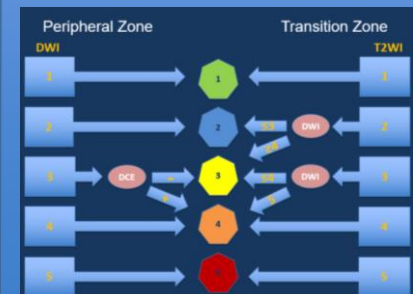
Qualitative Evaluation on T2WI, DWI (1-5 score) and DCE (positive/negative)

Score	Peripheral Zone (PZ)
1	Uniformly hyperintense (normal)
2	Linear, wedge-shaped, or diffuse mild hypointensity, usually indistinct margin
3	Non-circumscribed, rounded, mild hypointensity
4	Circumscribed, homogenous moderate hypointense focus/mass confined to prostate and <1.5 cm in greatest dimension
5	Same as 4 but ≥1.5cm in greatest dimension or definite extraprostatic extension/invasive behavior

3

Overall PI-RADS Assessment

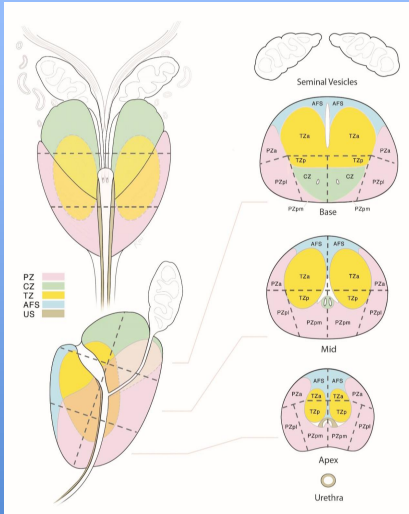
DWI	T2W	DCE	PIRADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



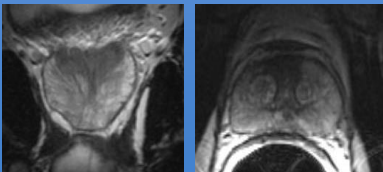
Step-by-step Assessment

1

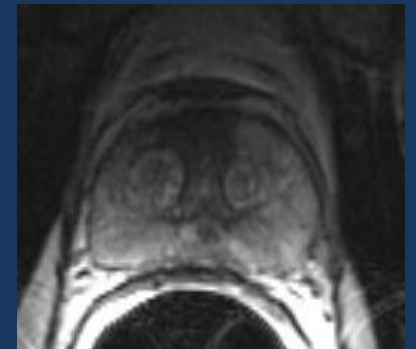
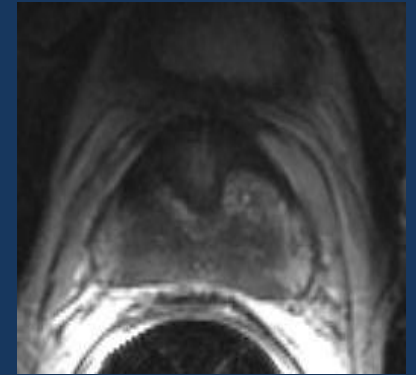
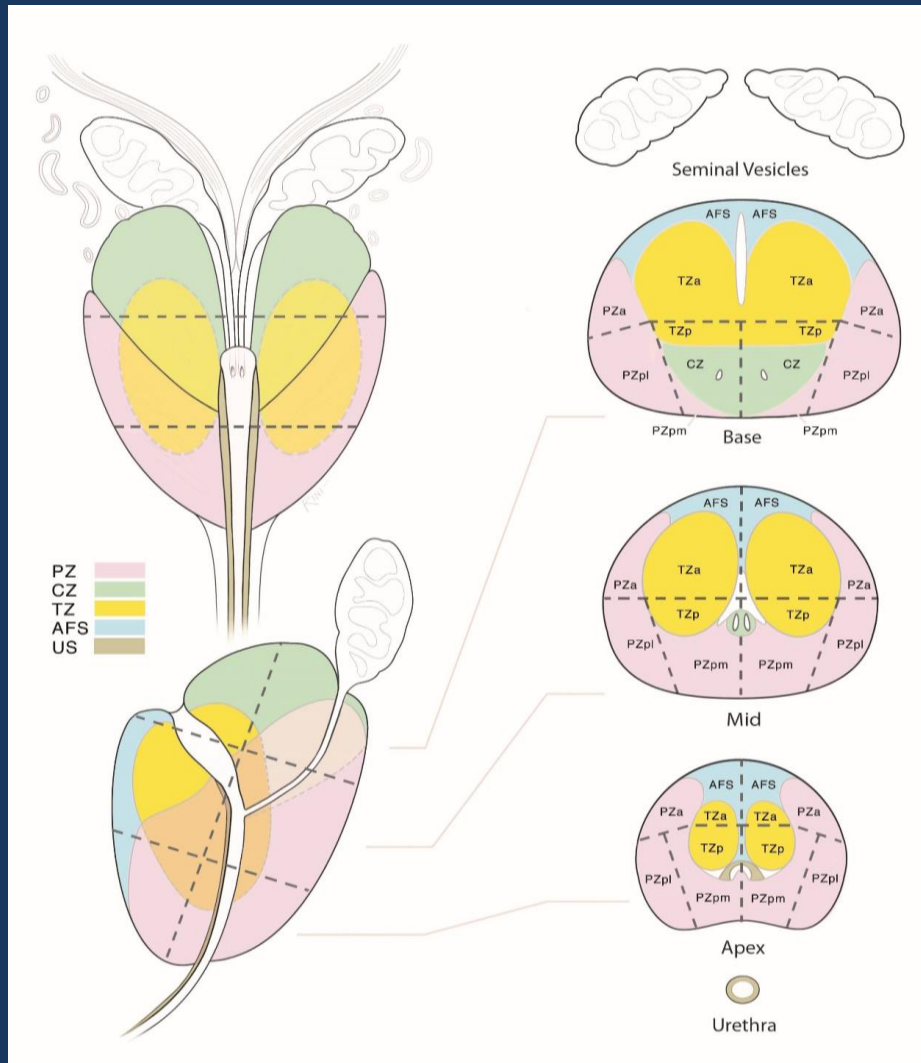
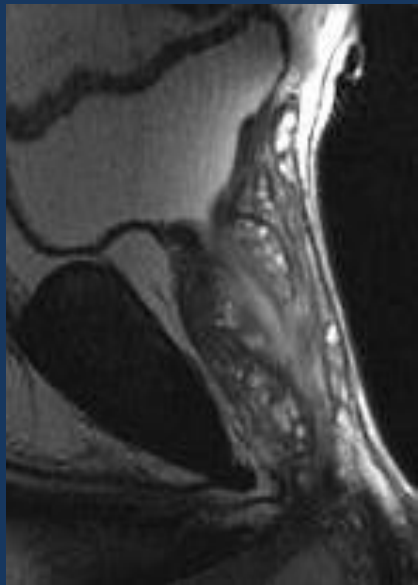
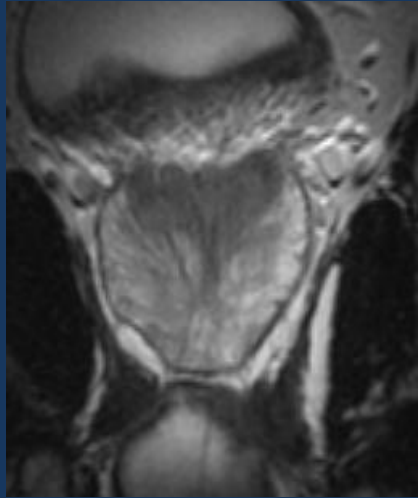
Anatomical Localization



PZ peripheral zone
CZ central zone
TZ transition zone
AFS Anterior Fibromuscular Stroma
US Urethral Sphincter



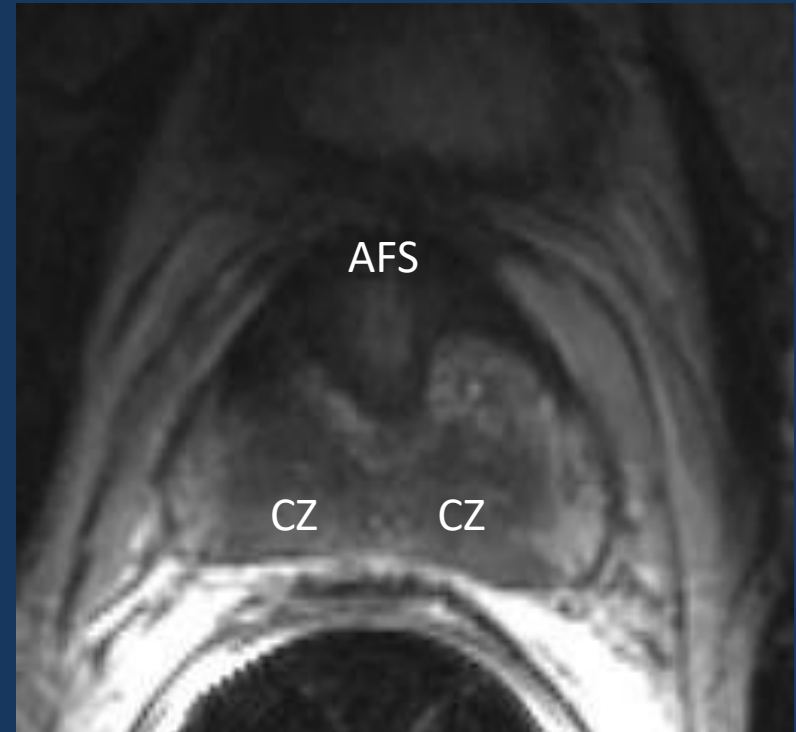
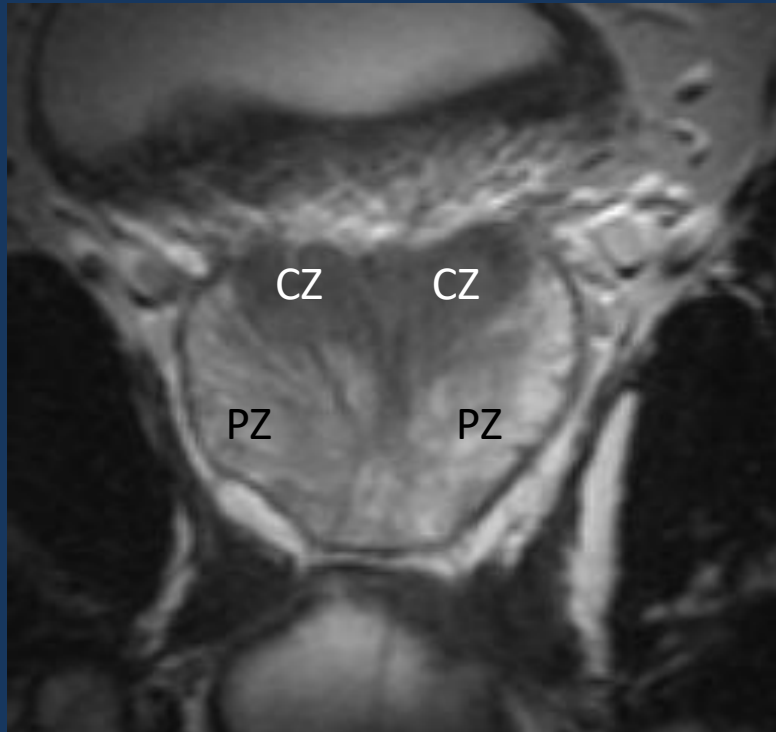
Prostate Zonal Anatomy



Prostate Zonal Anatomy: Cancer Origin

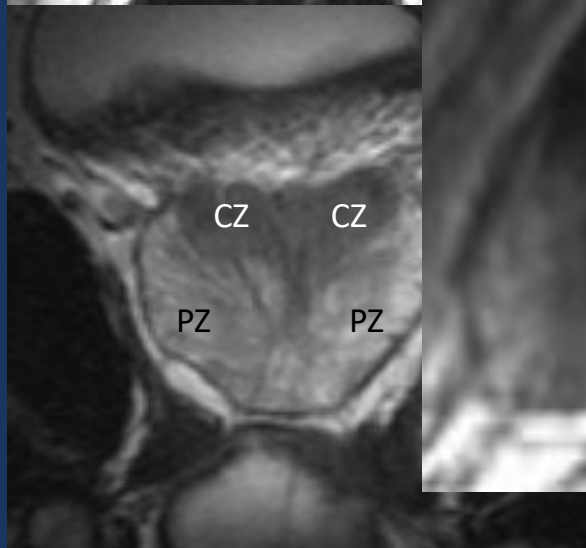
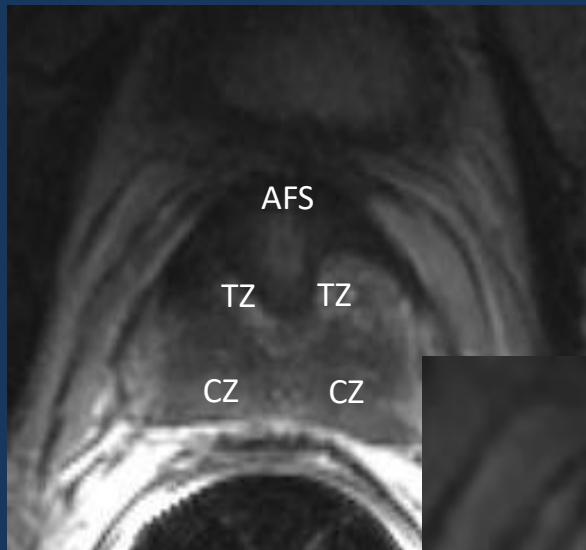
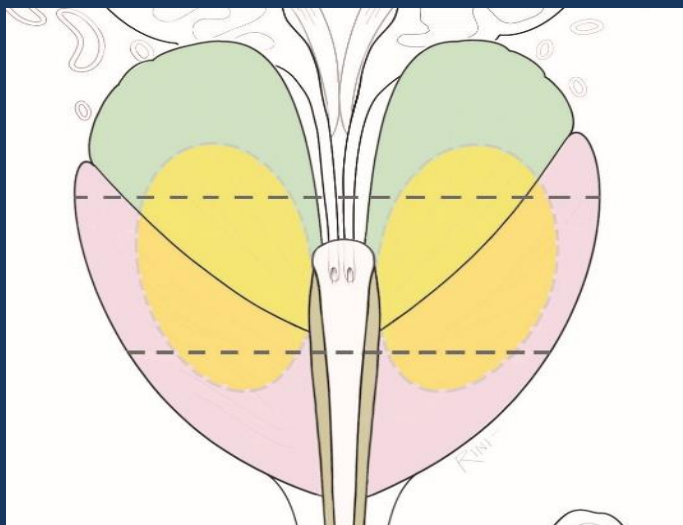
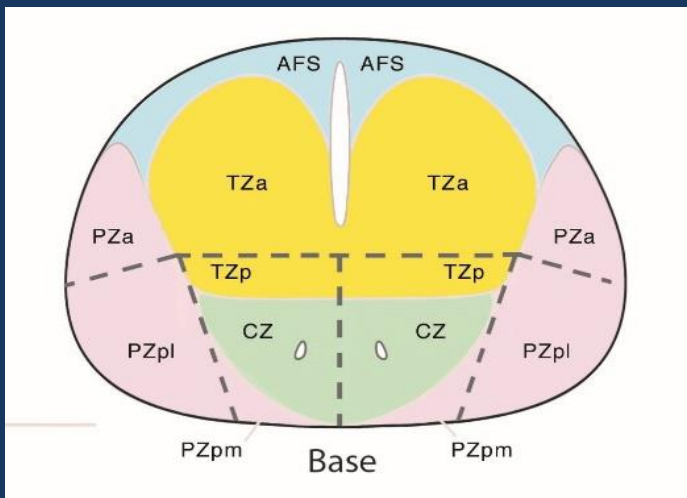
- **70%-75%** of prostate cancers originate in the **PZ** and 20%-30% in the TZ
- Cancers originating in the CZ are uncommon < 5% and most are secondary to invasion by PZ tumors
- Primary CZ cancers are significantly more aggressive than PZ or TZ cancers with greater risk of extracapsular extension, seminal vesicle invasion and positive surgical margins

Prostate Zonal Anatomy

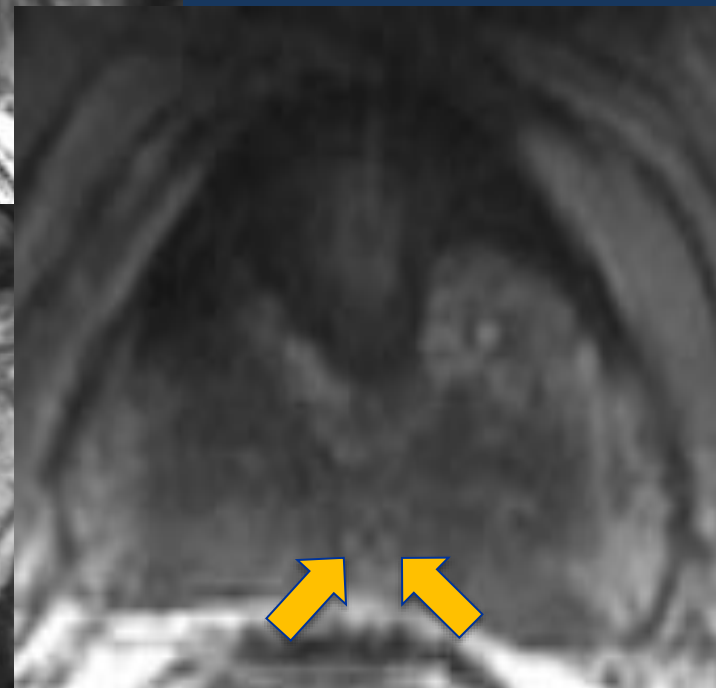


**Central Zone (CZ), Peripheral Zone (PZ)
Anterior Fibromuscular Stroma (AFS)**

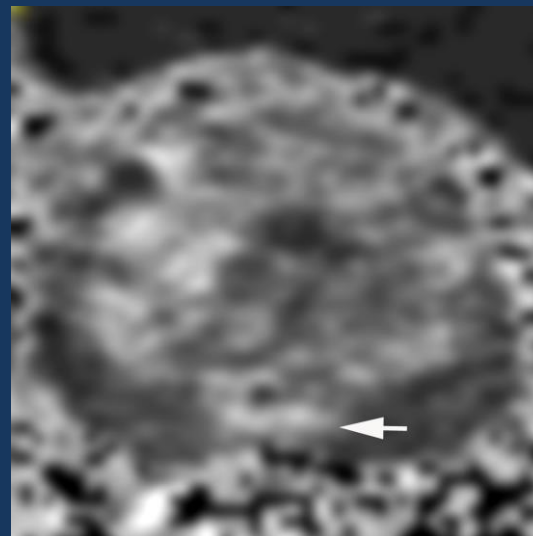
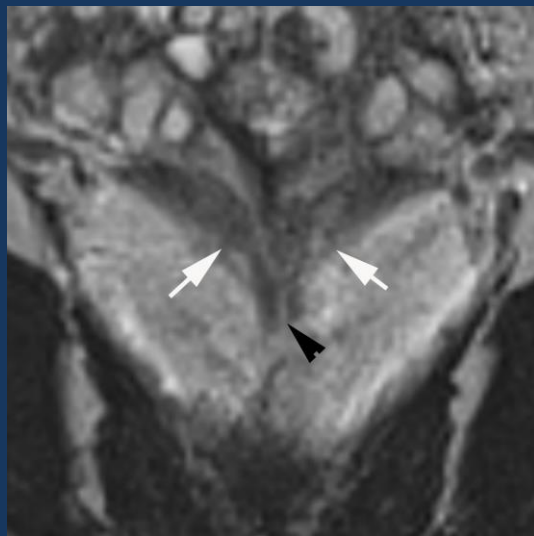
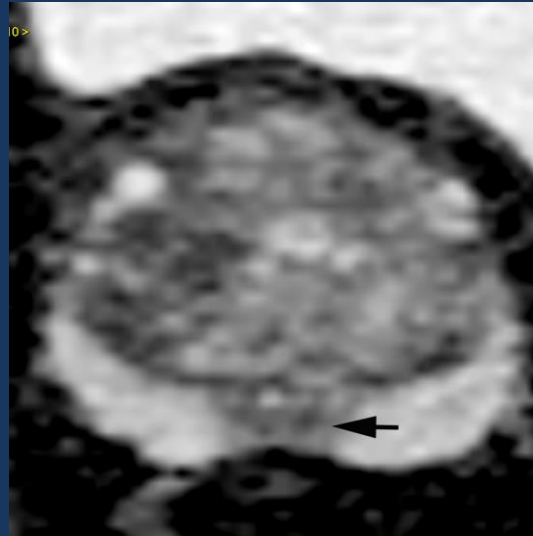
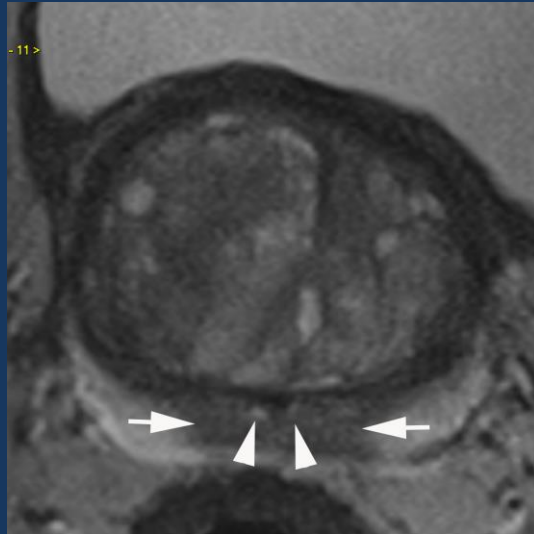
Prostate Central Zone



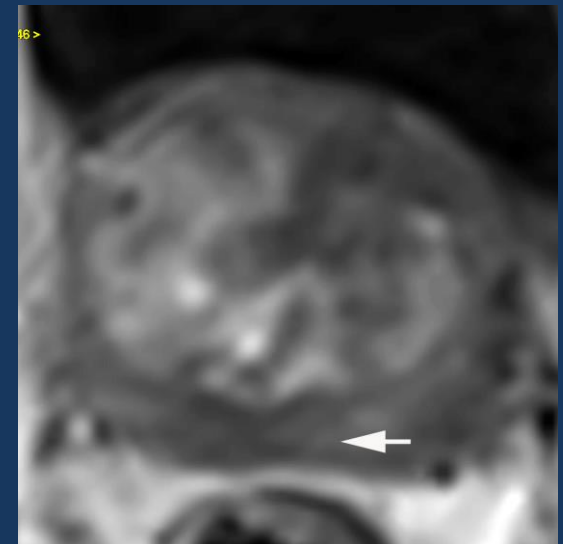
Central Zone (CZ)
Peripheral Zone (PZ)
Transition Zone (TZ)
Anterior Fibromuscular Stroma (AFS)



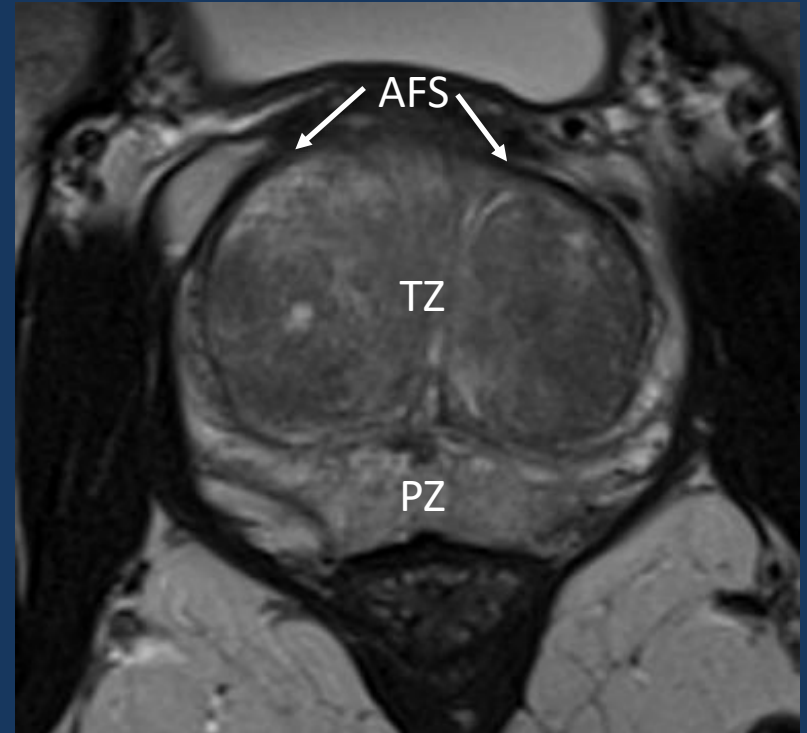
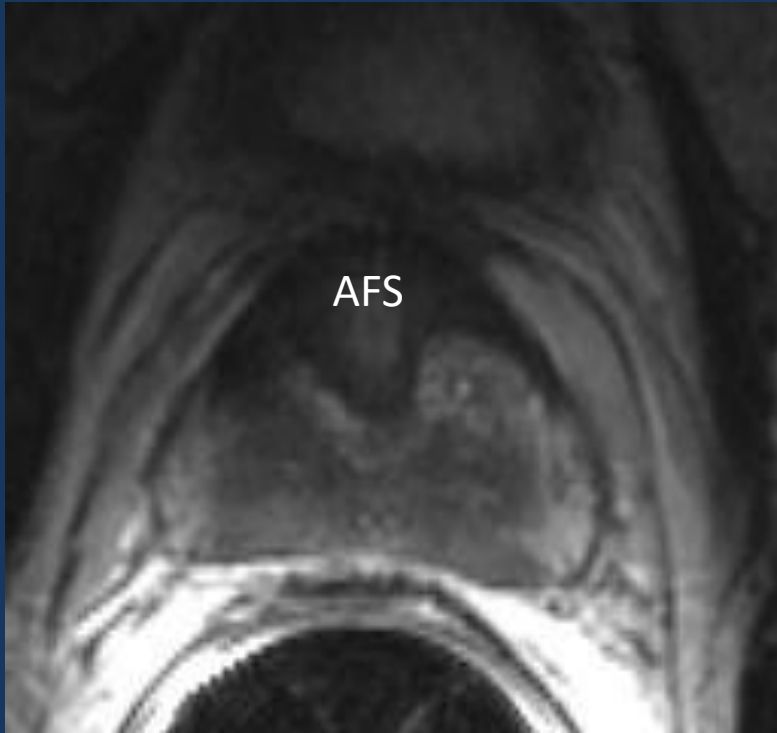
Normal Central Zone



Symmetric

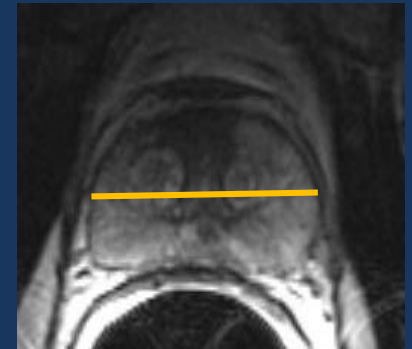
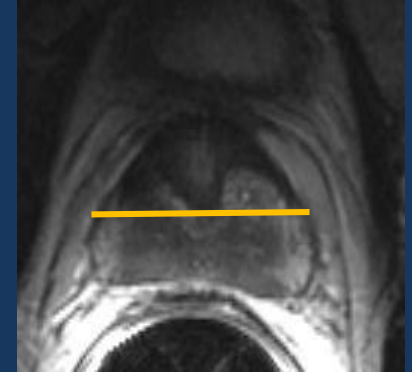
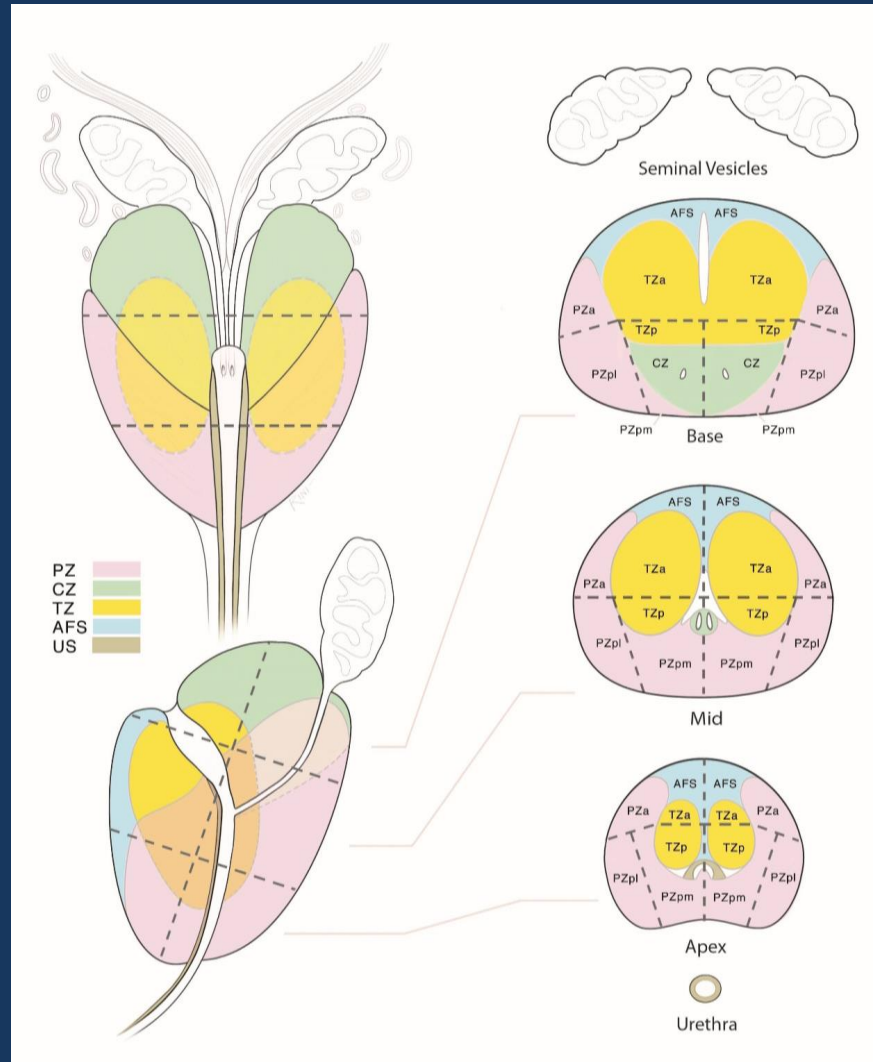
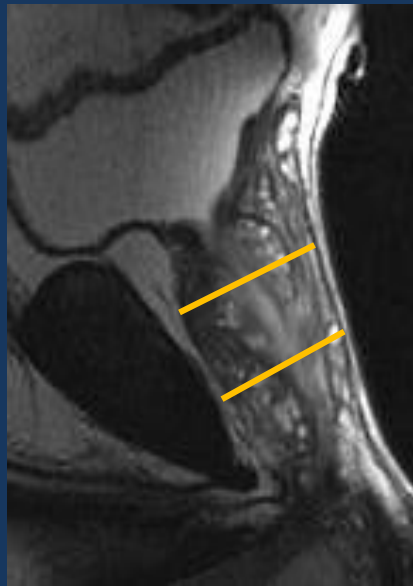
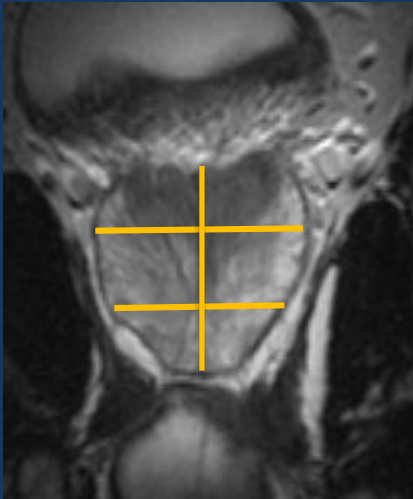


Prostate Zonal Anatomy

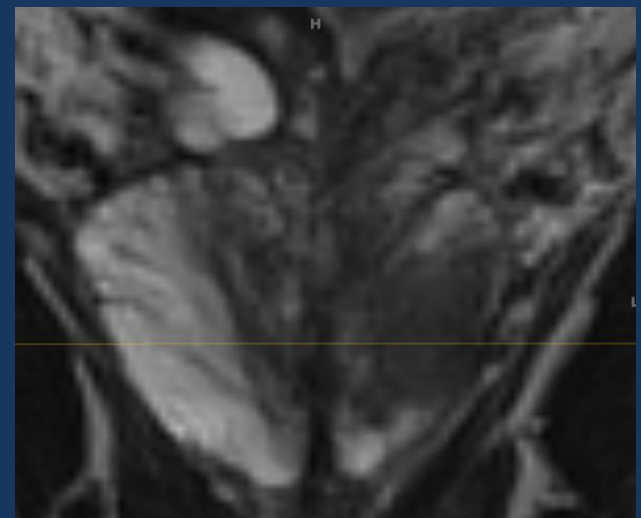
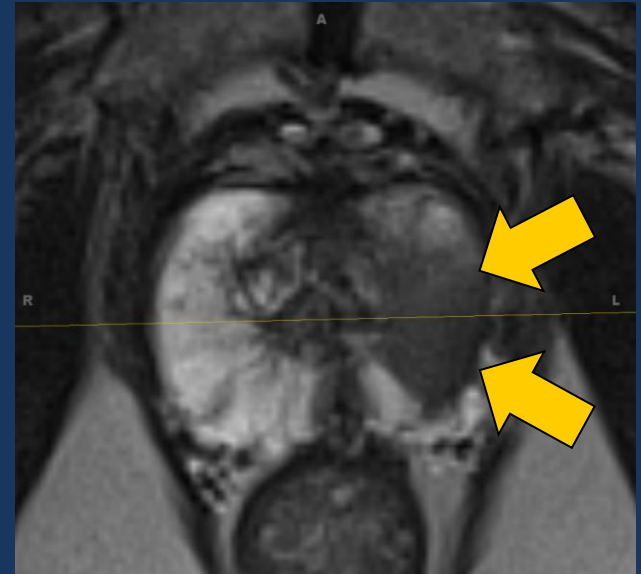
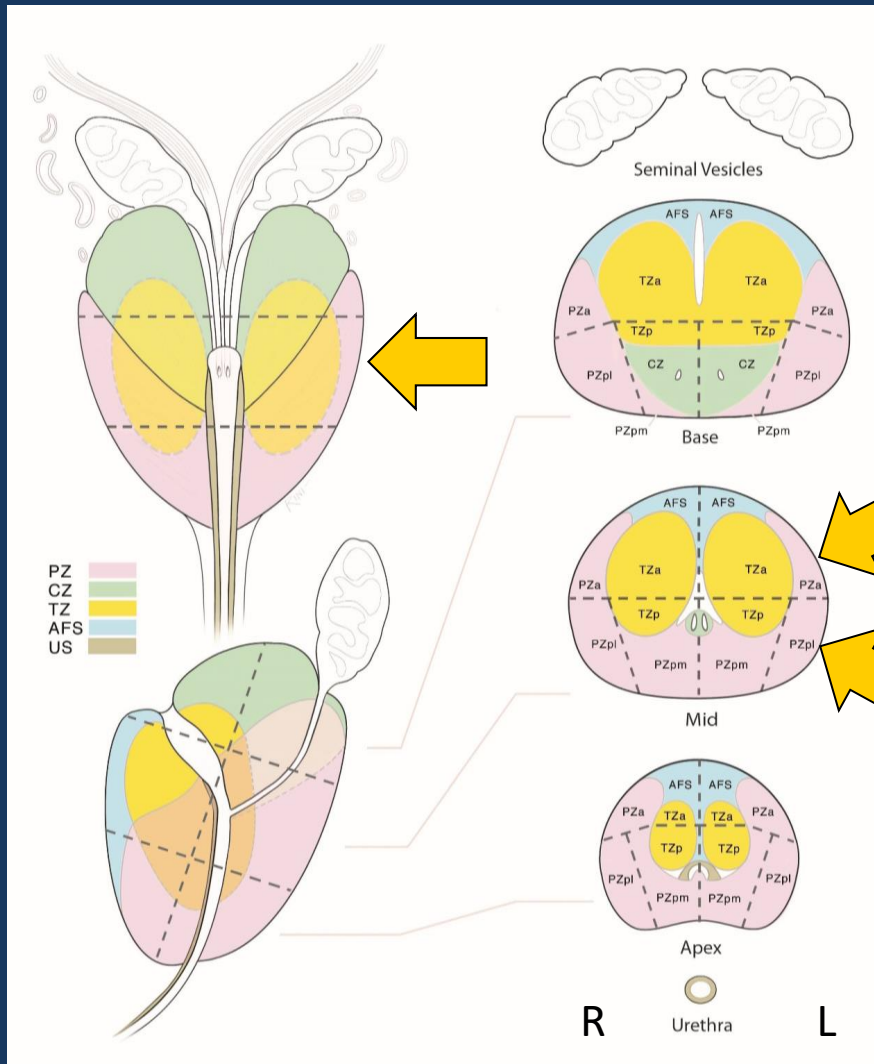


Anterior Fibromuscular Stroma (AFS)
Transition Zone (TZ)

Prostate Anatomy: Sectors (38)



Prostate Anatomy: Sectors (38)

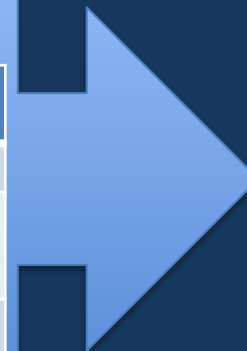


Step-by-step Assessment

2

**Qualitative
Evaluation on
T2WI, DWI
(1-5 score)
and DCE
(positive/negative)**

Score	Peripheral Zone (PZ)
1	Uniformly hyperintense (normal)
2	Linear, wedge-shaped, or diffuse mild hypointensity, usually indistinct margin
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4	Circumscribed, homogenous moderate hypointense focus/mass confined to prostate and <1.5 cm in greatest dimension
5	Same as 4 but ≥ 1.5 cm in greatest dimension or definite extraprostatic extension/invasive behavior



Peripheral Zone

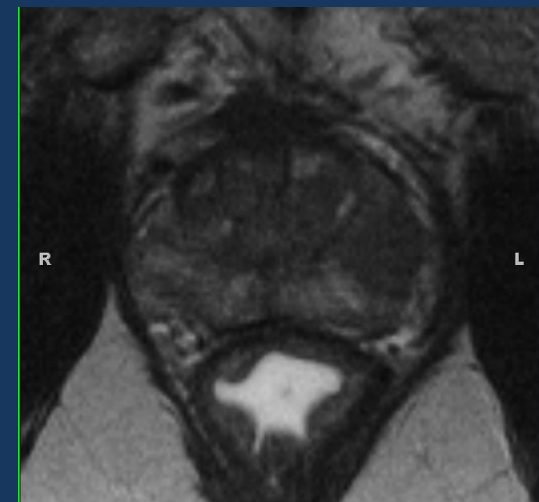
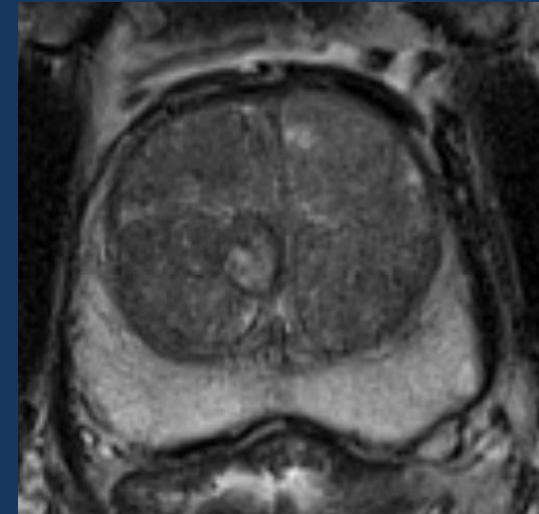
Transition Zone

***Central Zone**

***AFS**

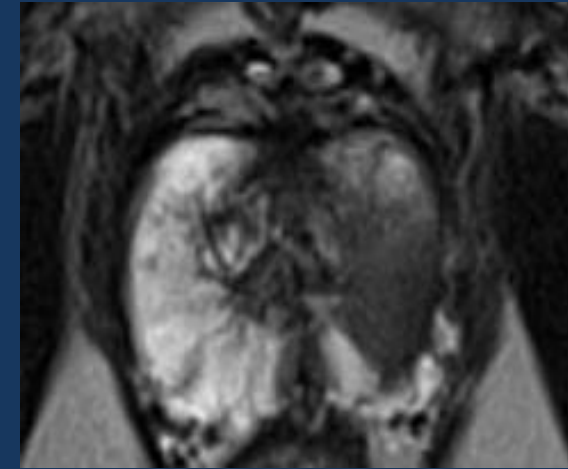
PI-RADS Peripheral Zone T2WI

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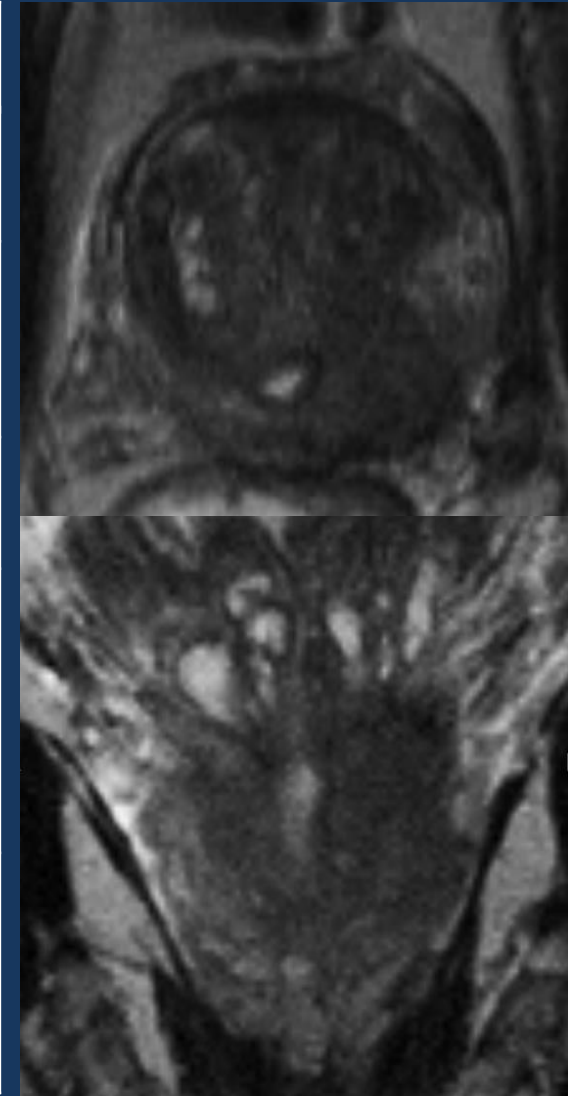
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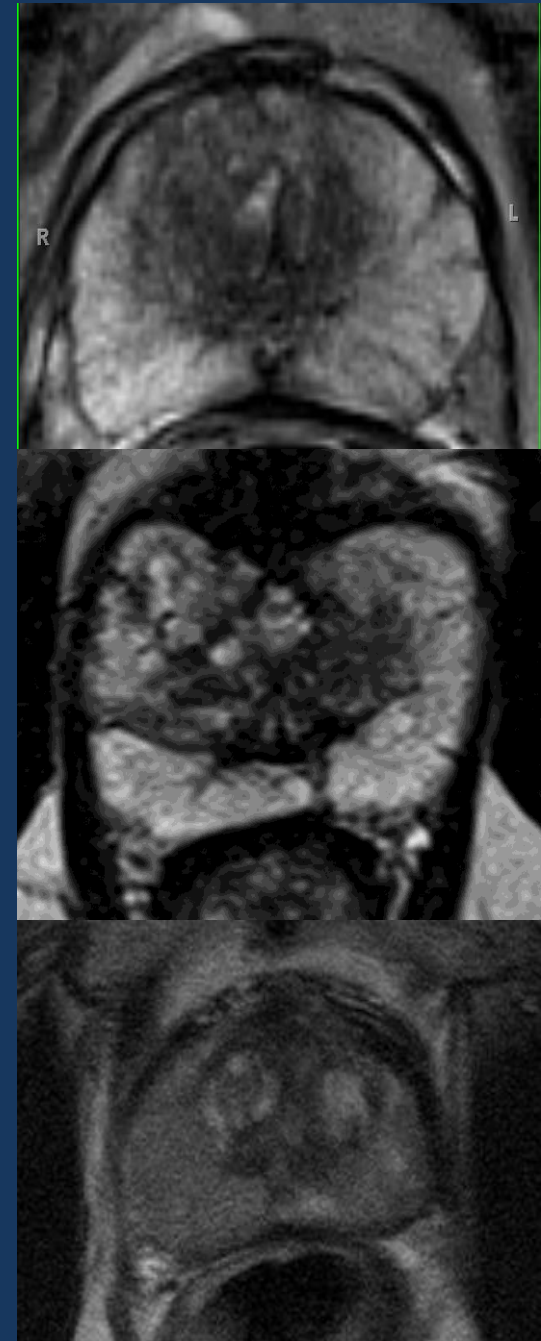
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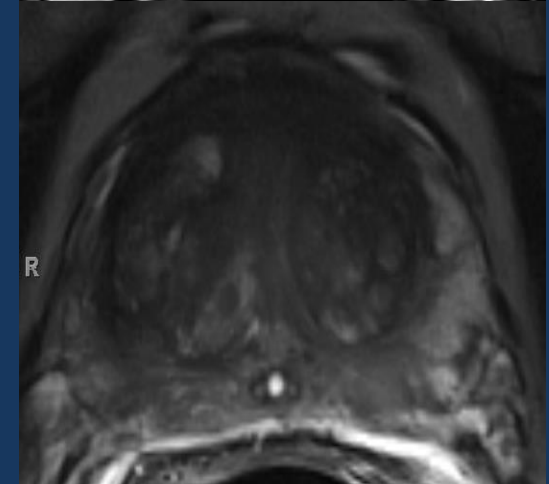
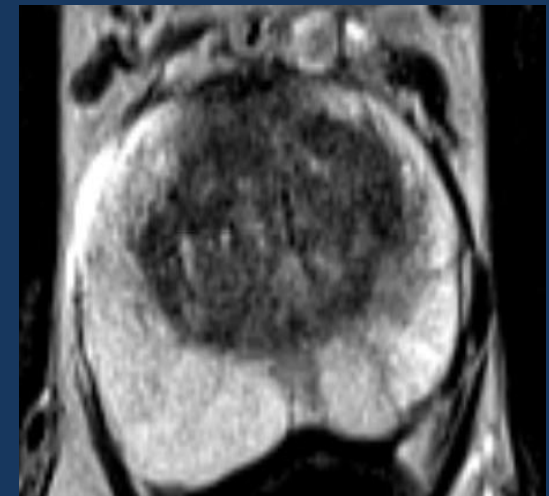
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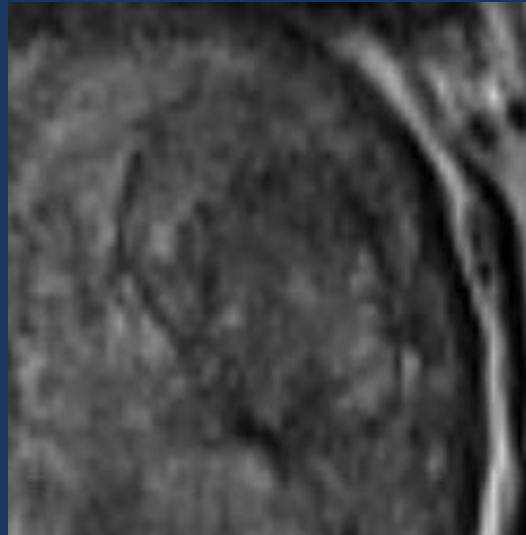
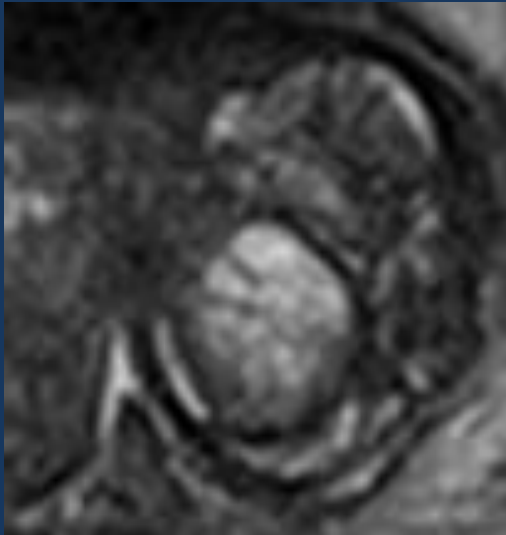
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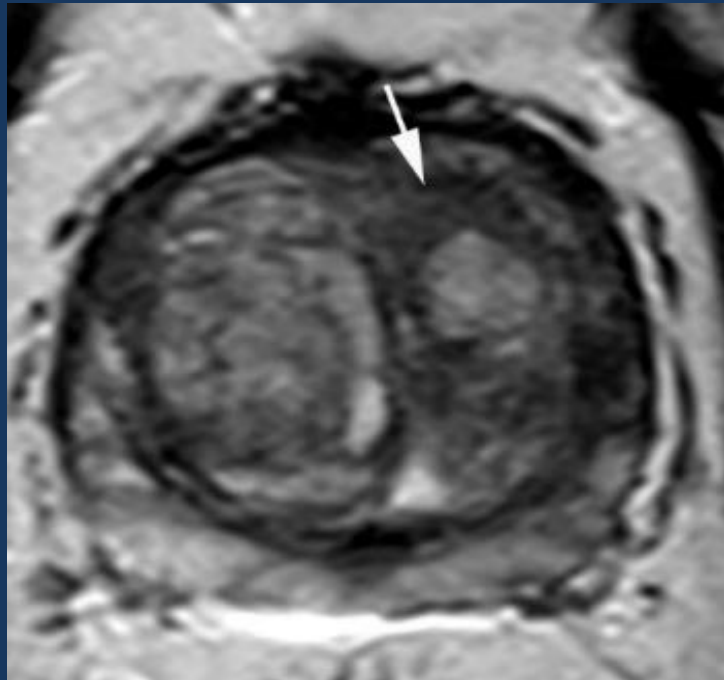
PI-RADS v2.1 Transition Zone T2WI

- Normal appearing TZ (rare) - homogeneous intermediate signal intensity, OR a round, completely encapsulated “typical nodule” – score 1
- A mostly encapsulated nodule OR a homogeneous circumscribed nodule without encapsulation “atypical nodule” - score 2



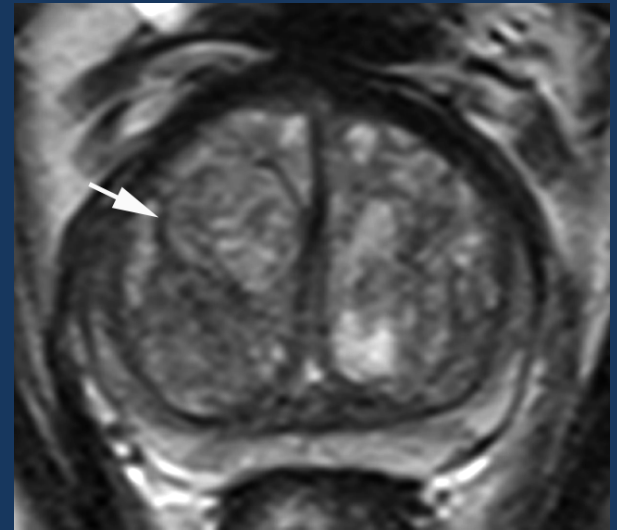
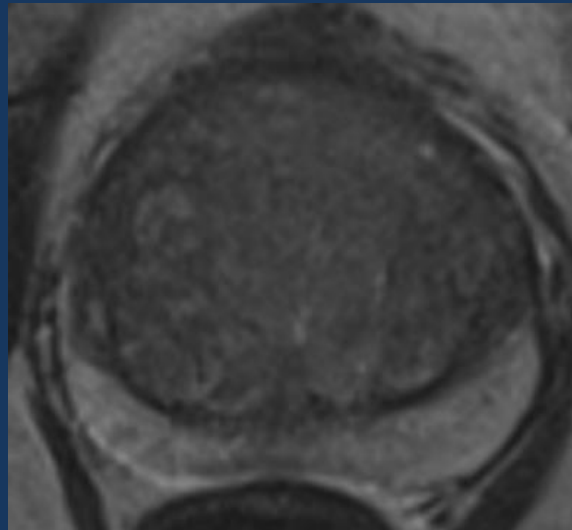
PI-RADS v2.1 Transition Zone T2WI

- OR a homogeneous mildly hypointense area between nodules – score 2



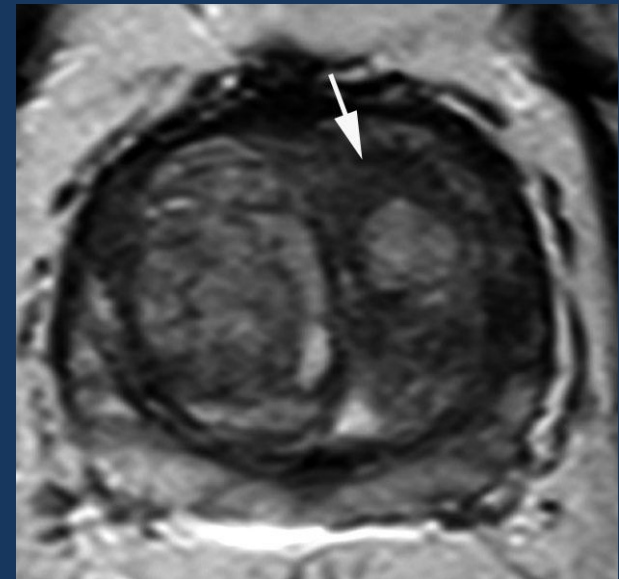
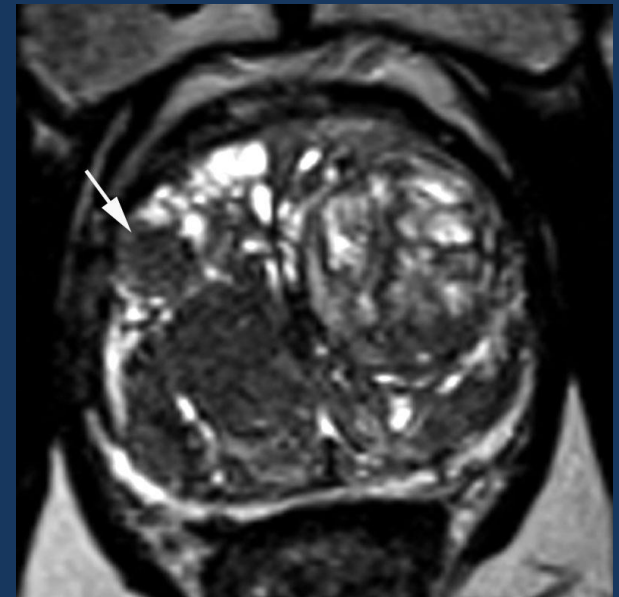
PI-RADS Transition Zone T2WI

Score	Transition Zone (TZ)
1	Normal appearing - homogeneous intermediate signal intensity (rare), OR a round, completely encapsulated nodule (“typical nodule”)



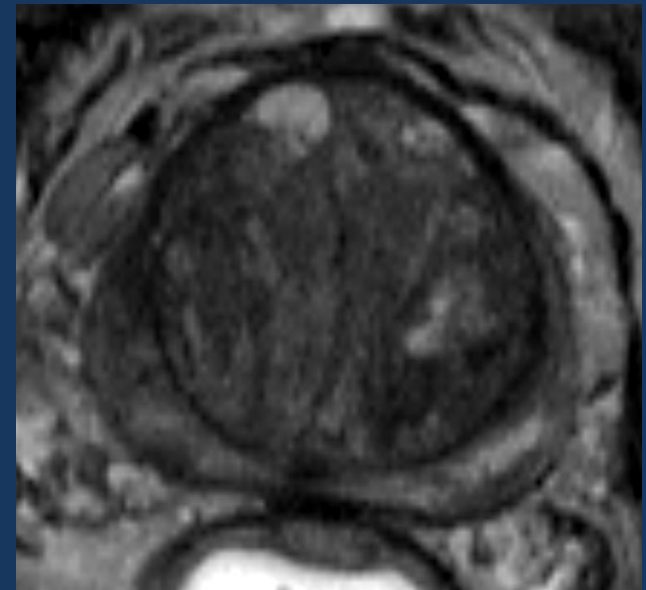
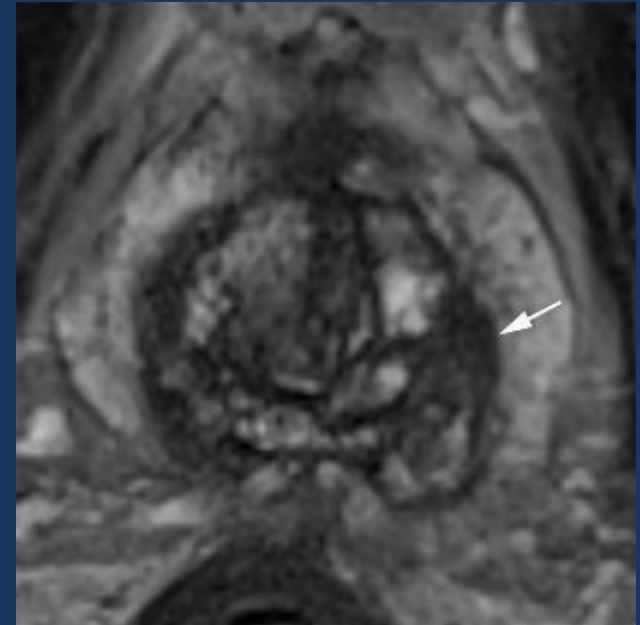
PI-RADS Transition Zone T2WI

Score	Transition Zone (TZ)
2	A mostly encapsulated nodule OR a homogeneous circumscribed nodule without encapsulation (“ atypical nodule ”) OR a homogeneous mildly hypointense area between nodules



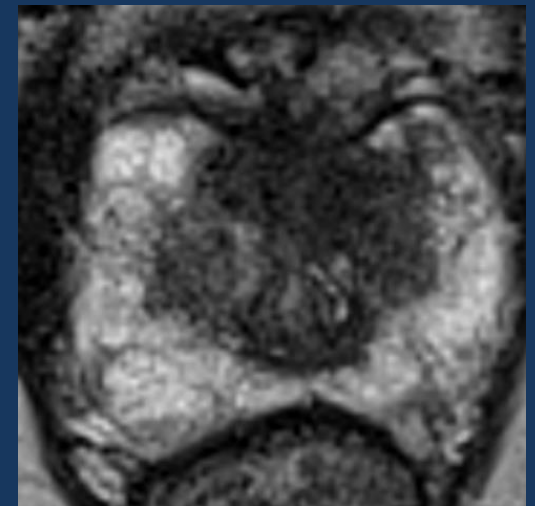
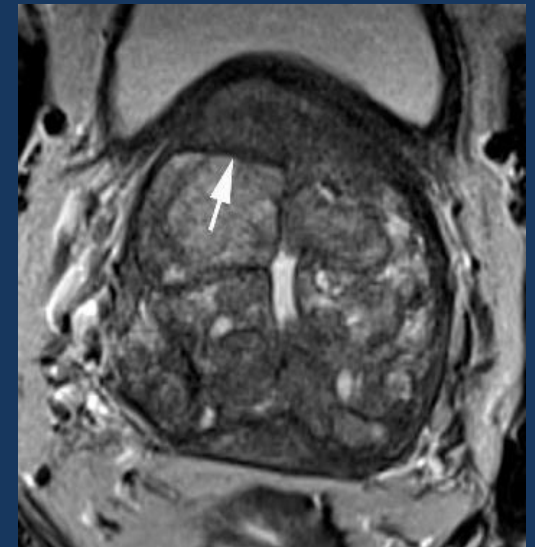
PI-RADS Transition Zone T2WI

Score	Transition Zone (TZ)
3	Heterogeneous signal intensity with obscured margins, others that do not qualify as 2, 4, or 5



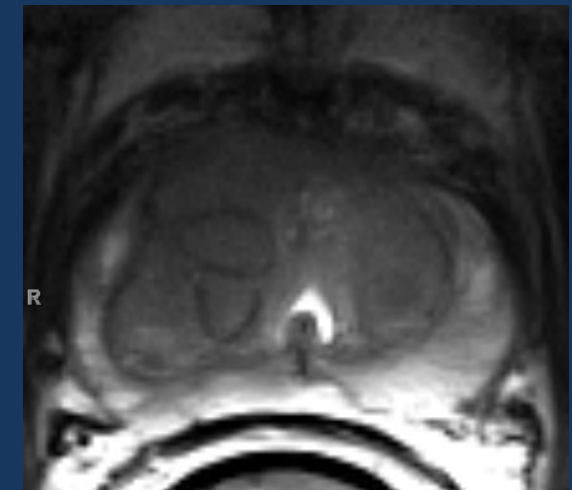
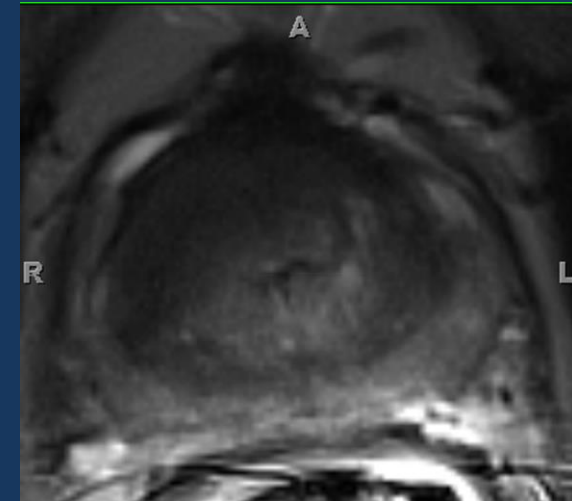
PI-RADS Transition Zone T2WI

Score	Transition Zone (TZ)
4	Lenticular or non-circumscribed, homogeneous, moderately hypointense, and <1.5 cm in greatest dimension
5	Same as 4, but ≥ 1.5 cm in greatest dimension or definite extraprostatic extension/invasive behavior



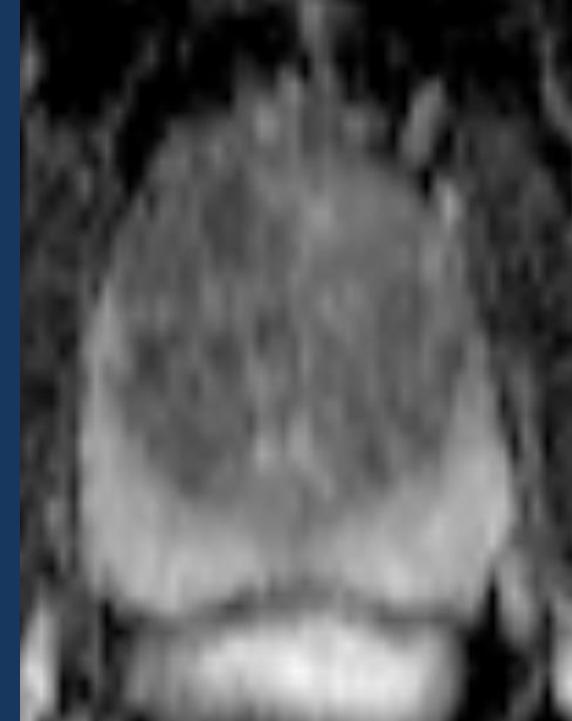
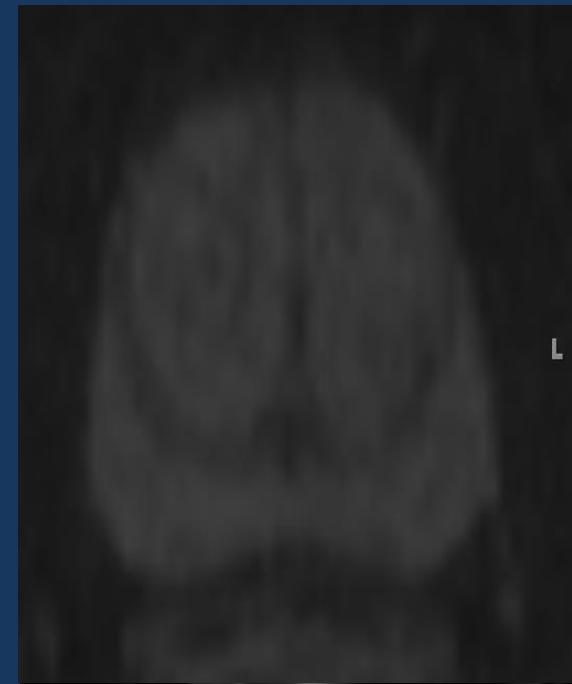
PI-RADS Transition Zone T2WI

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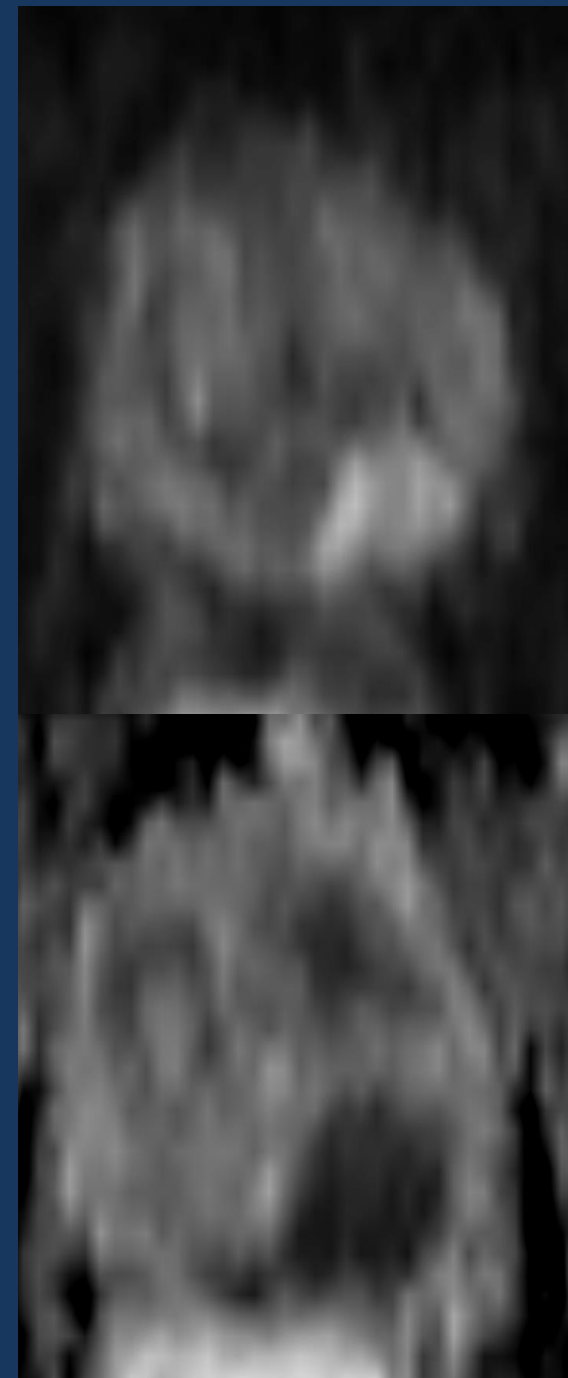
PI-RADS Peripheral Zone DWI

Score	Peripheral Zone (PZ)
1	No abnormality (normal) on ADC or high b-value DWI



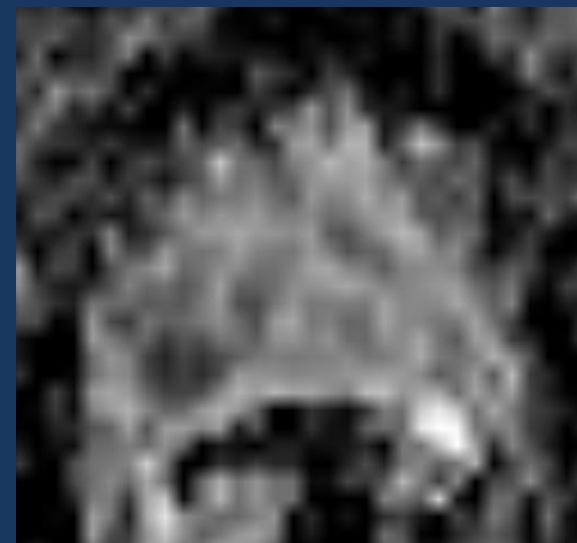
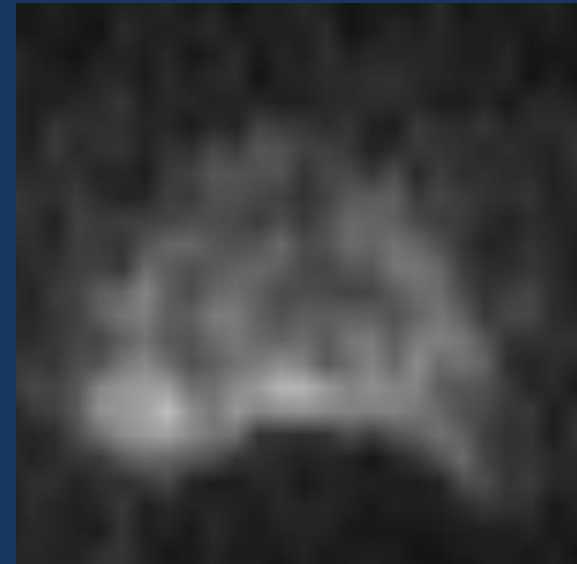
PI-RADS Peripheral Zone DWI

Score	Peripheral Zone (PZ)
4	Focal moderately hypointense on ADC and markedly hyperintense on high b-value DWI; <1.5cm on axial
5	Same as 4 but ≥ 1.5 cm in greatest dimension or definite extraprostatic extension/invasive behavior



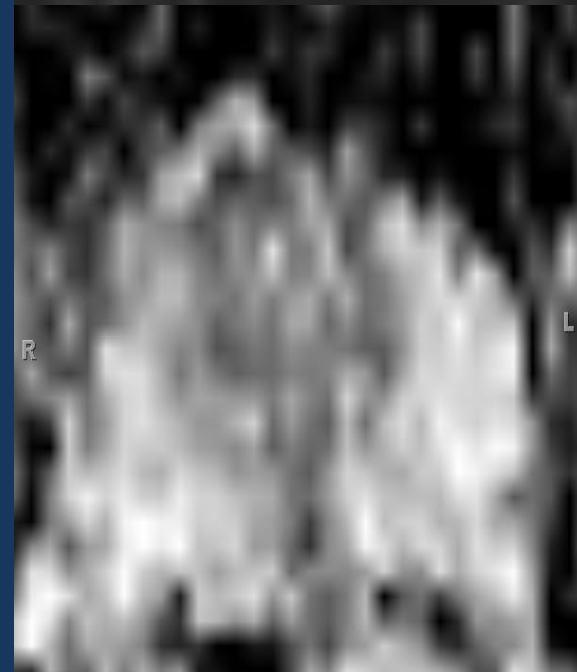
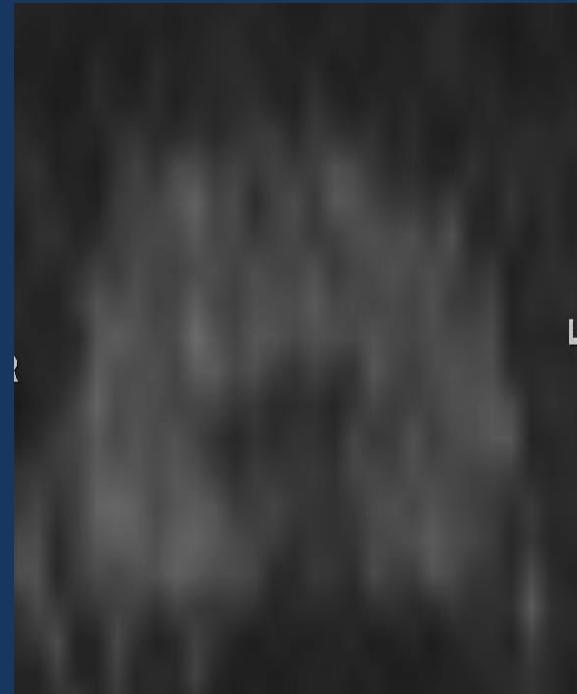
PI-RADS Peripheral Zone DWI

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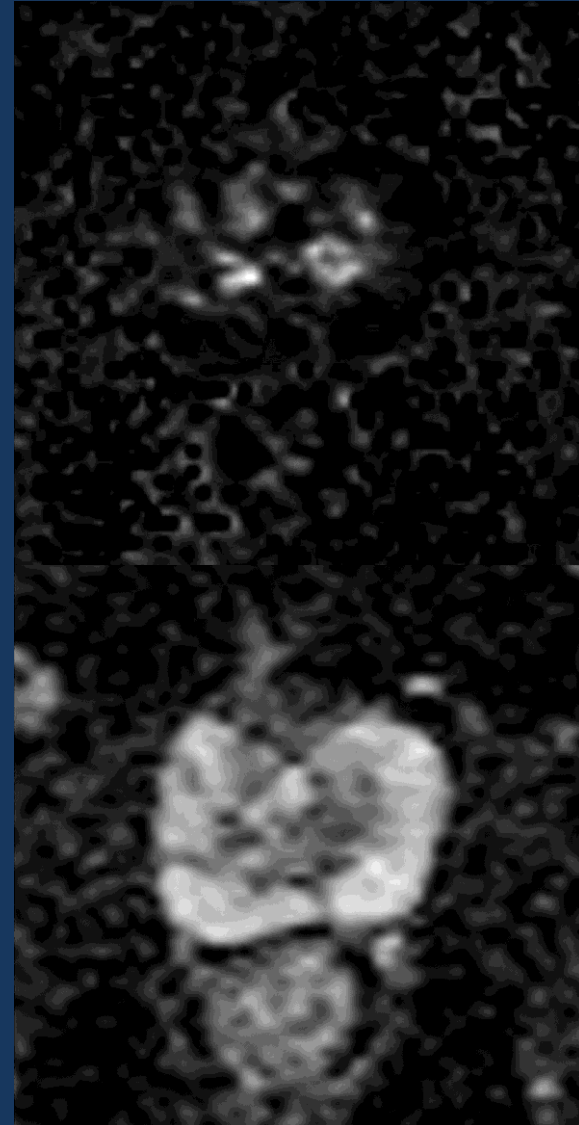
PI-RADS Peripheral Zone DWI

Score	Peripheral Zone (PZ)
2	Linear/wedge shaped hypointense on ADC and/or linear/wedge shaped hyperintense on high b-value DWI



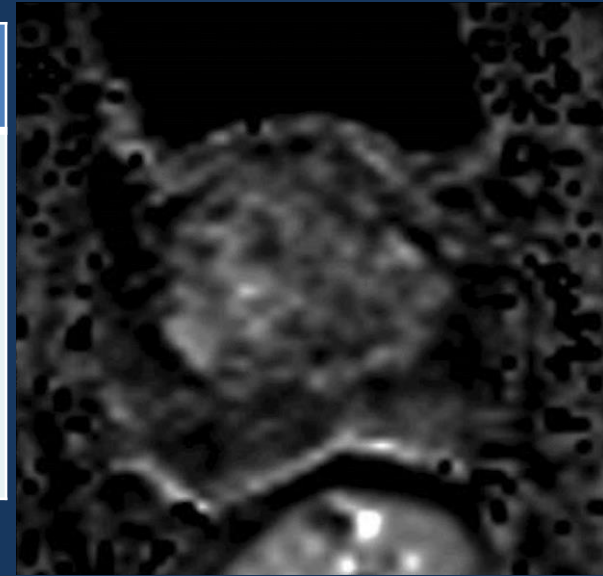
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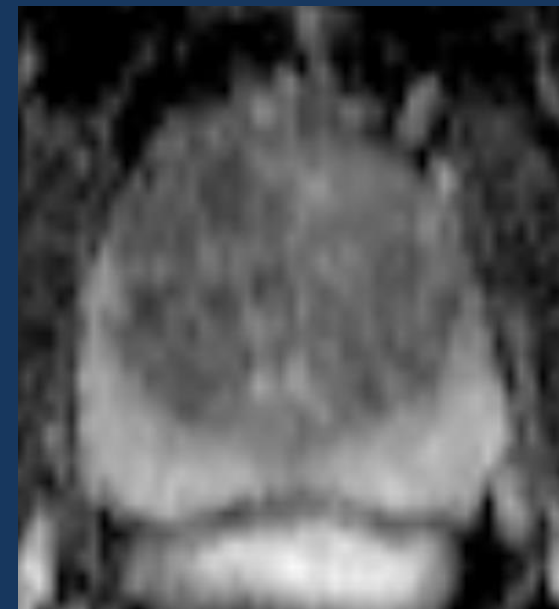
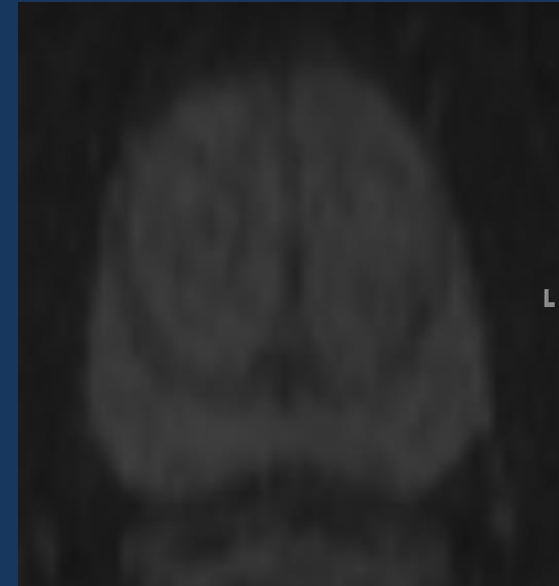
PI-RADS Peripheral Zone DWI

Score	Peripheral Zone (PZ)
3	Focal (discrete and different from the background) hypointense on ADC and/or focal hyperintense on high b-value DWI; may be markedly hypointense on ADC or markedly hyperintense on high b-value DWI, but not both



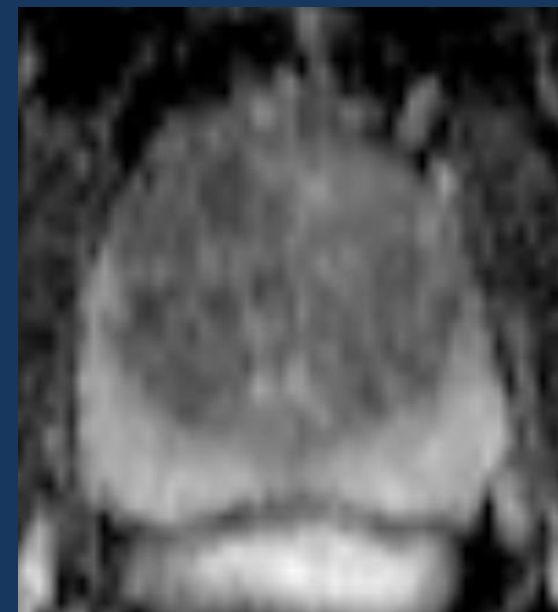
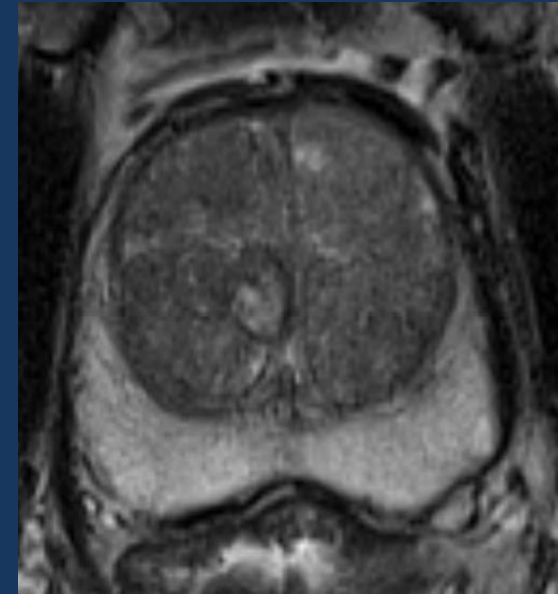
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
1	No abnormality (normal) on ADC or high b-value DWI



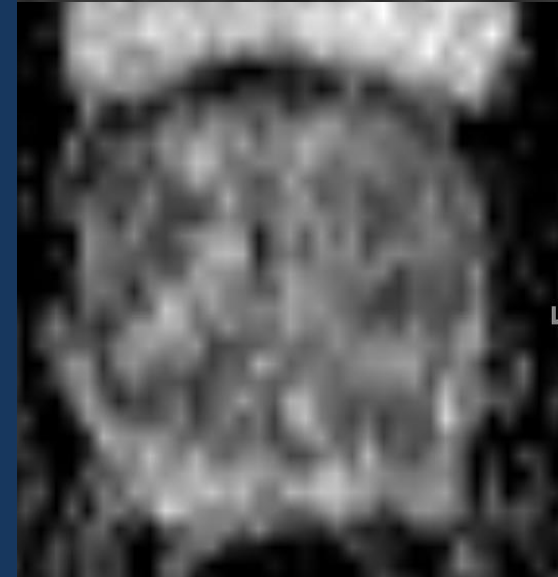
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
1	No abnormality (normal) on ADC or high b-value DWI



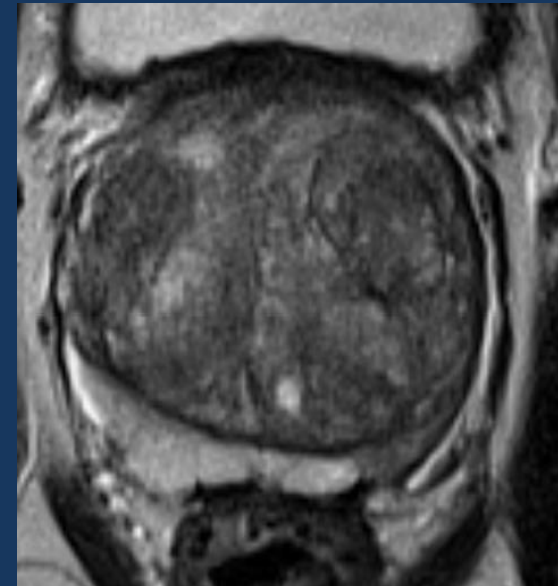
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
2	Linear/wedge shaped hypointense on ADC and/or linear/wedge shaped hyperintense on high b-value DWI, Non-focal hypointense on ADC and/or hyperintense on high b-value DWI



PI-RADS Transition Zone DWI

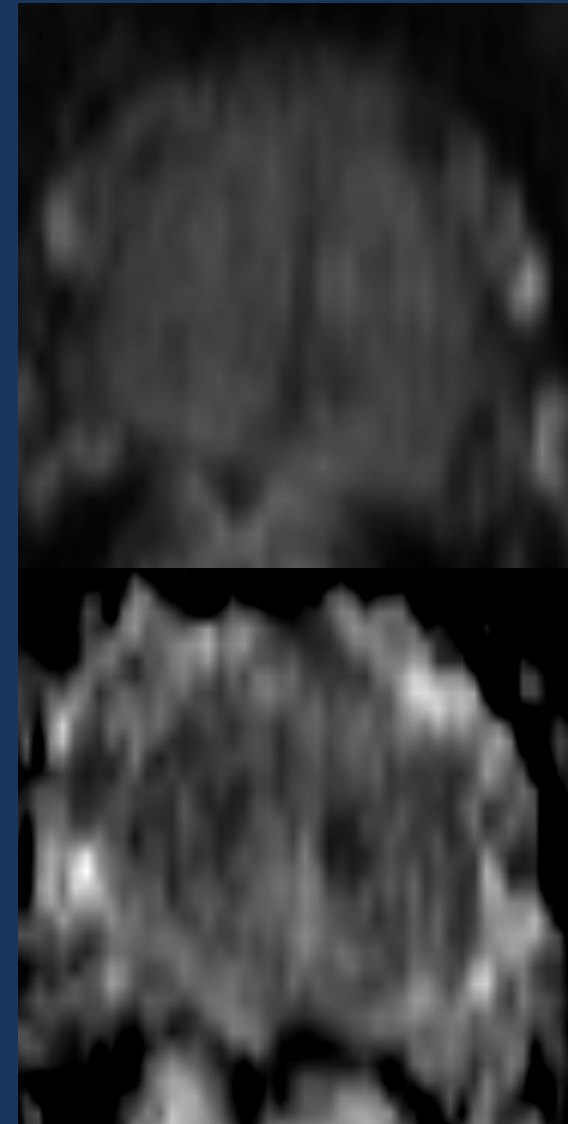
Score	Transition Zone (TZ)
2	Linear/wedge shaped hypointense on ADC and/or linear/wedge shaped hyperintense on high b-value DWI, Non-focal hypointense on ADC and/or hyperintense on high b-value DWI



“copy & paste”

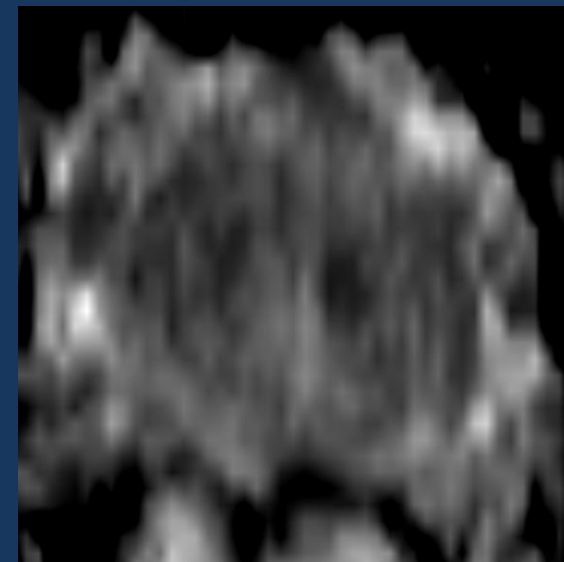
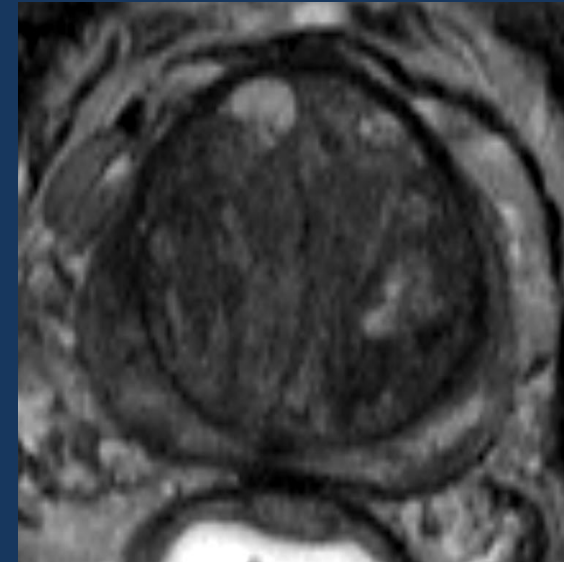
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
3	Focal (discrete and different from the background) hypointense on ADC and/or focal hyperintense on high b-value DWI; may be markedly hypointense on ADC or markedly hyperintense on high b-value DWI, but not both



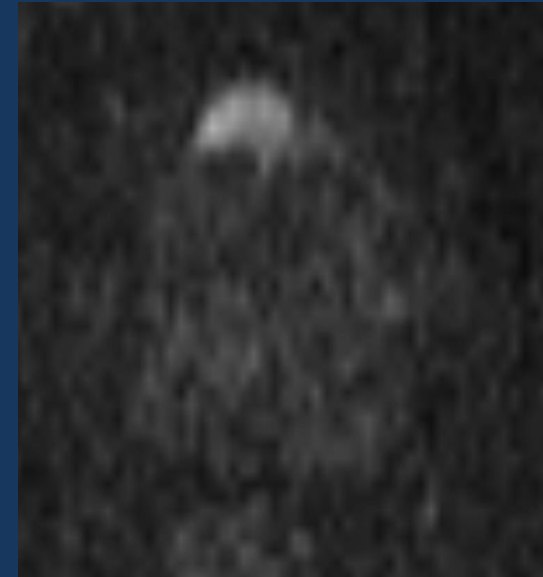
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
3	Focal (discrete and different from the background) hypointense on ADC and/or focal hyperintense on high b-value DWI; may be markedly hypointense on ADC or markedly hyperintense on high b-value DWI, but not both



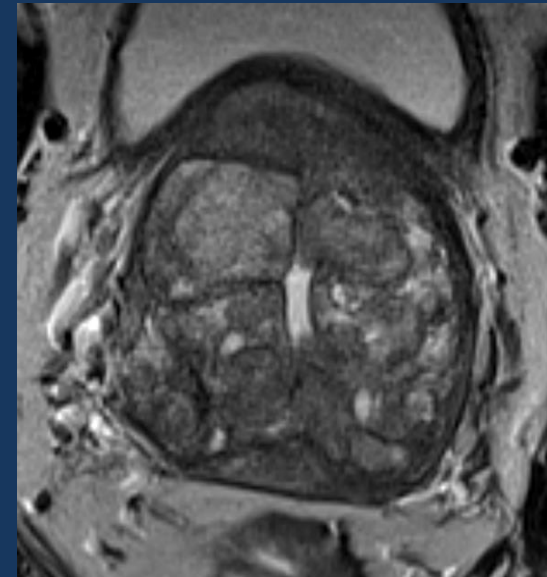
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
4	Focal moderately hypointense on ADC and markedly hyperintense on high b-value DWI; <1.5cm on axial
5	Same as 4 but ≥ 1.5 cm in greatest dimension or definite extraprostatic extension/invasive behavior



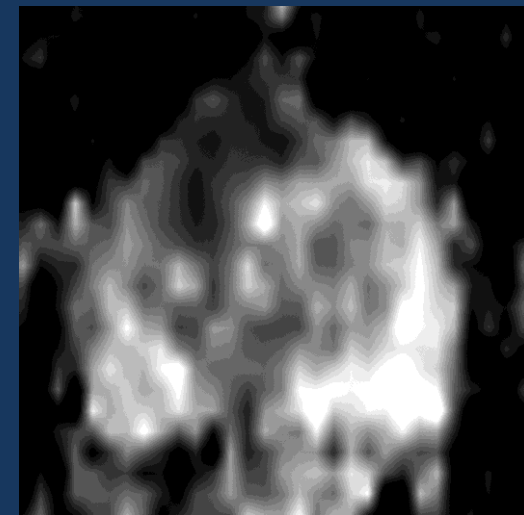
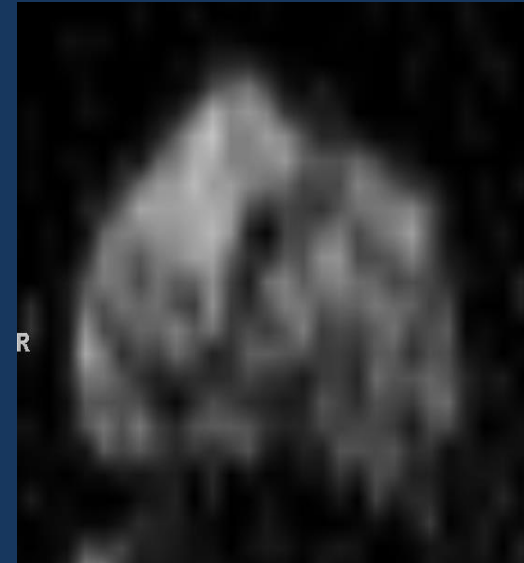
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
4	Focal moderately hypointense on ADC and markedly hyperintense on high b-value DWI; <1.5cm on axial
5	Same as 4 but ≥ 1.5 cm in greatest dimension or definite extraprostatic extension/invasive behavior



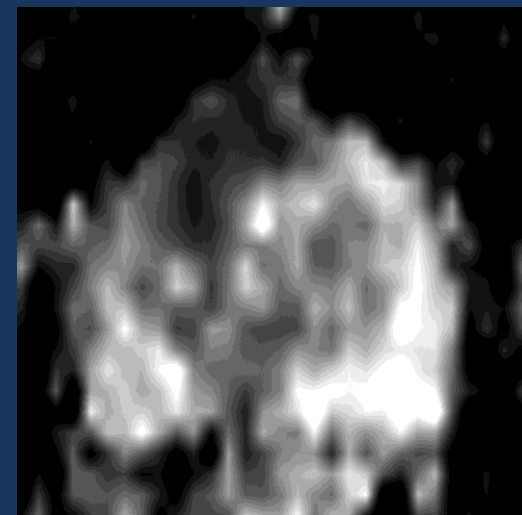
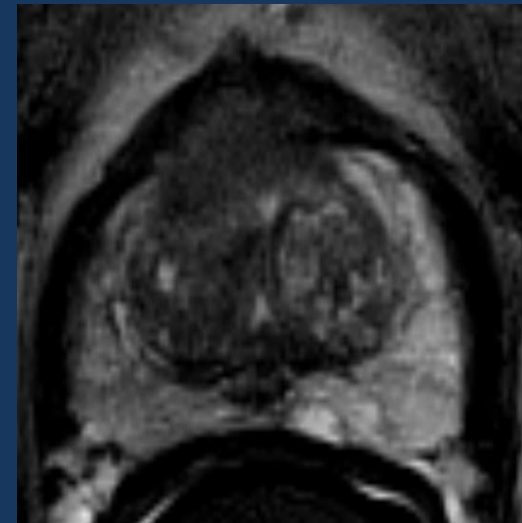
PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
4	Focal moderately hypointense on ADC and markedly hyperintense on high b-value DWI; <1.5cm on axial
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PI-RADS Transition Zone DWI

Score	Transition Zone (TZ)
4	Focal moderately hypointense on ADC and markedly hyperintense on high b-value DWI; <1.5cm on axial
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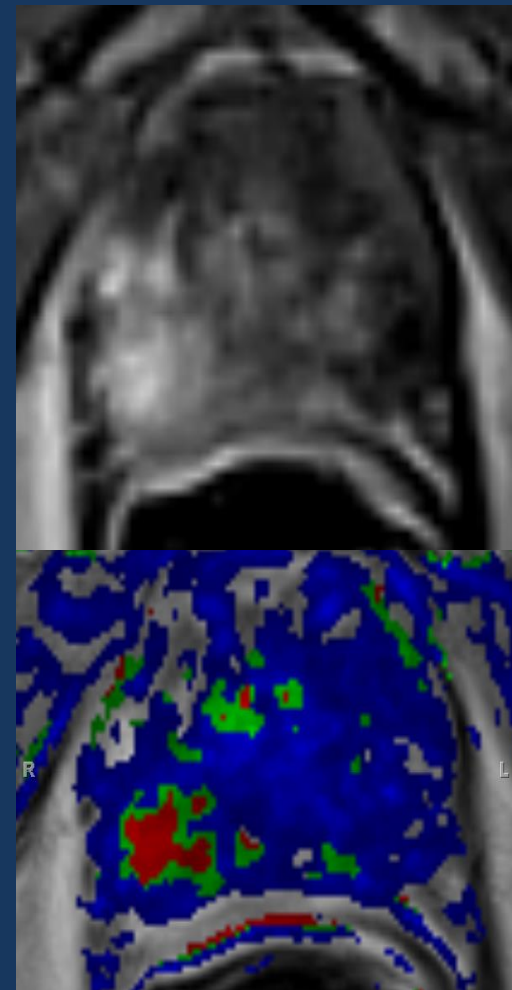


PI-RADS v2.1

- Scoring of DWI in PZ and TZ is revised as follows;
- 1: No change from PI-RADS v2
- 2: Linear/wedge shaped hypointense on ADC and/or linear/wedge shaped hyperintense on high b-value DWI
- 3: Focal (discrete and different from the background) hypointense on ADC and/or focal hyperintense on high b-value DWI; may be markedly hypointense on ADC or markedly hyperintense on high b-value DWI, but not both
- 4: No change from PI-RADS v2
- 5: No change from PI-RADS v2

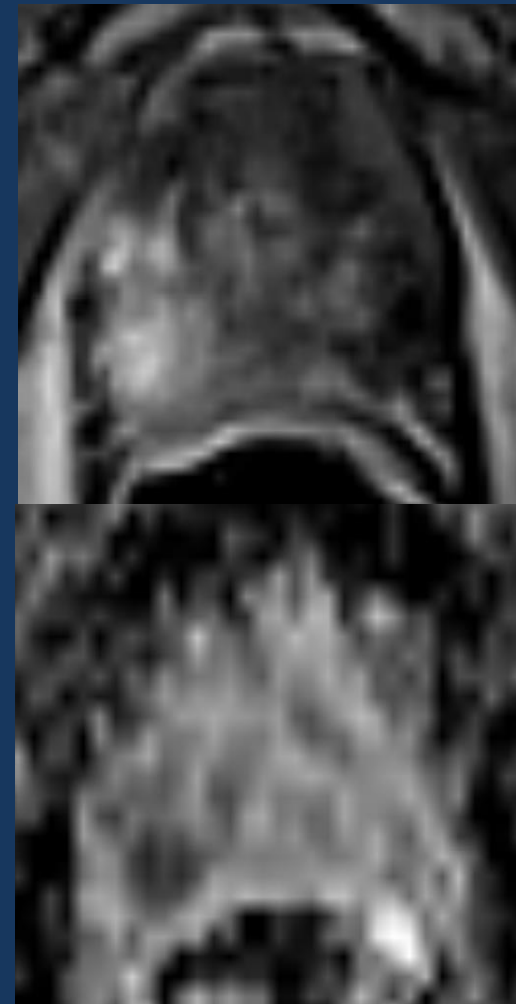
PI-RADS DCE

DCE Status	PZ / TZ Enhancement
Positive (+)	Focal, AND earlier than or contemporaneously with enhancement of adjacent normal prostatic tissues, AND corresponds to suspicious finding on T2W and/or DWI
Negative (-)	No early or contemporaneous enhancement; OR diffuse multifocal enhancement NOT corresponding to a focal finding on T2W and/or DWI OR focal enhancement corresponding to a lesion demonstrating features of BPH on T2WI (including features of extruded BPH in the PZ)



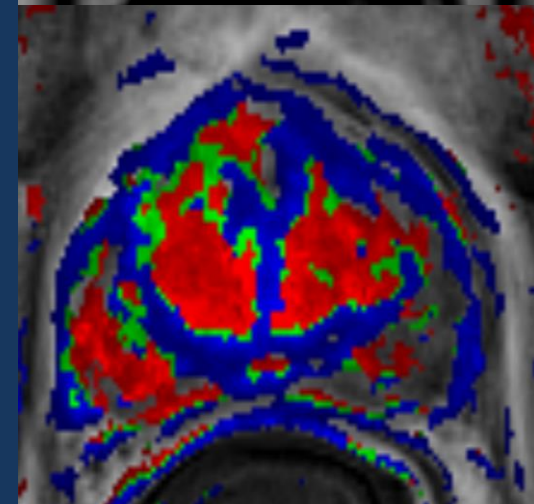
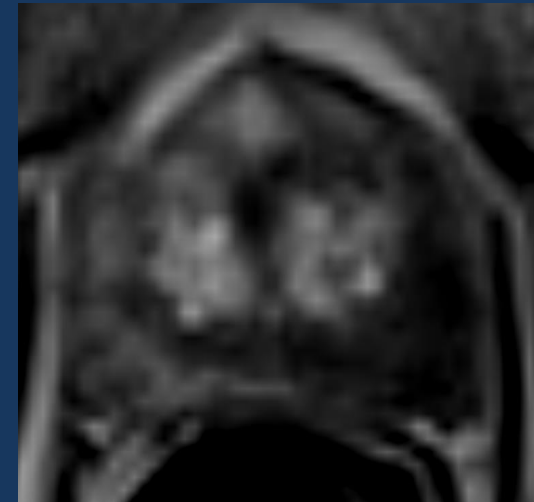
PI-RADS DCE

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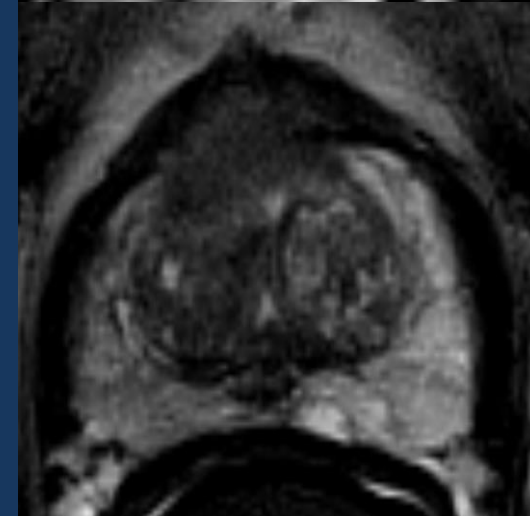
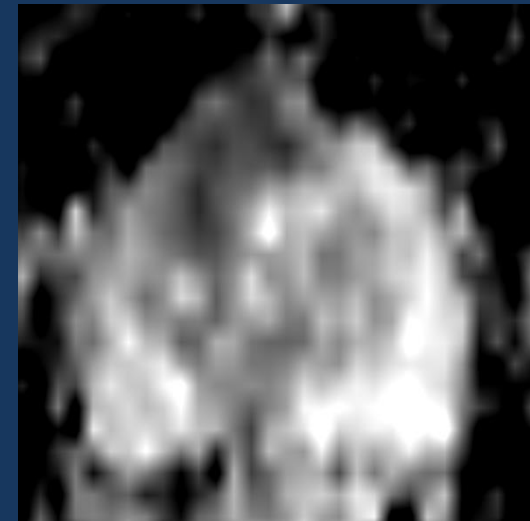
PI-RADS DCE

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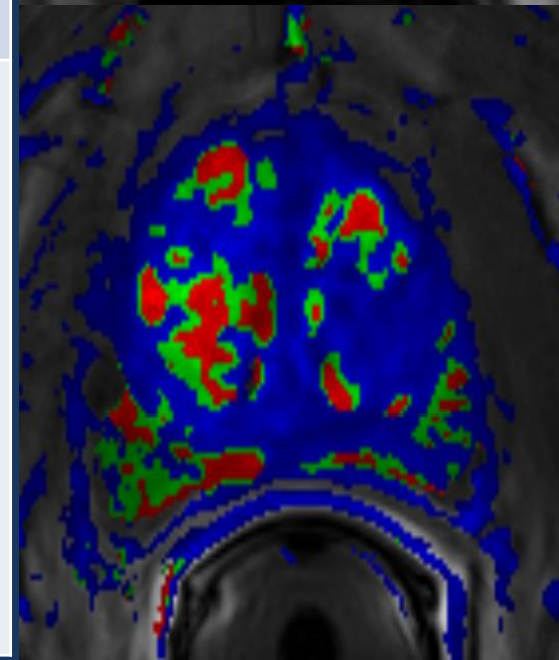
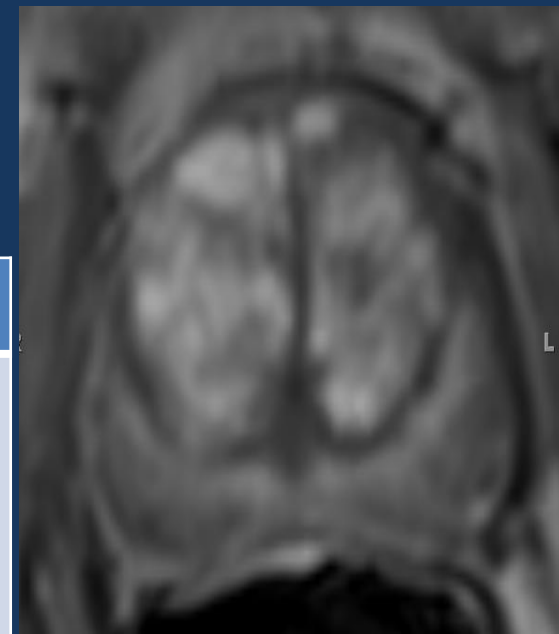
PI-RADS DCE

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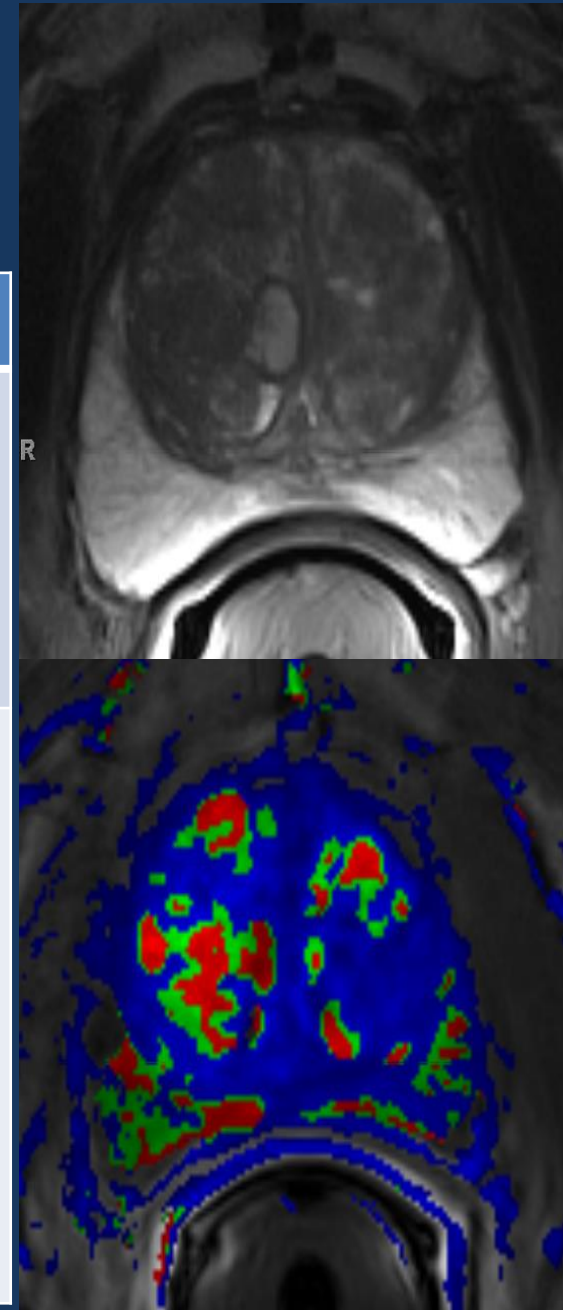
PI-RADS DCE

DCE Status	PZ / TZ Enhancement
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PI-RADS DCE

DCE Status	PZ / TZ Enhancement
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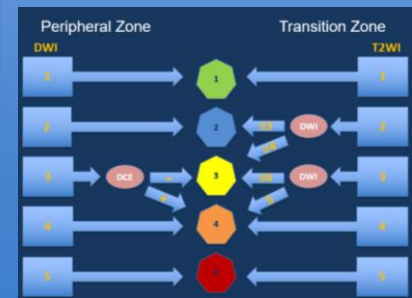
Step-by-step Assessment

3



Overall PI-RADS Assessment

DWI	T2W	DCE	PIRADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



PI-RADS v2.1 Assessment Rules

- Peripheral Zone
 - Dominant sequence:
 - **DWI-ADC**
 - Modifier for score 3: DCE - / + → **Overall score 4**
- Transition Zone
 - Dominant sequence:
 - **T2WI**
 - Modifier for score 2: DWI-ADC ≥ 4 → **Overall score 3**
 - Modifier for score 3: DWI-ADC **5** → **Overall score 4**

Peripheral Zone

DWI	T2W	DCE	OVERALL
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5

Transition Zone

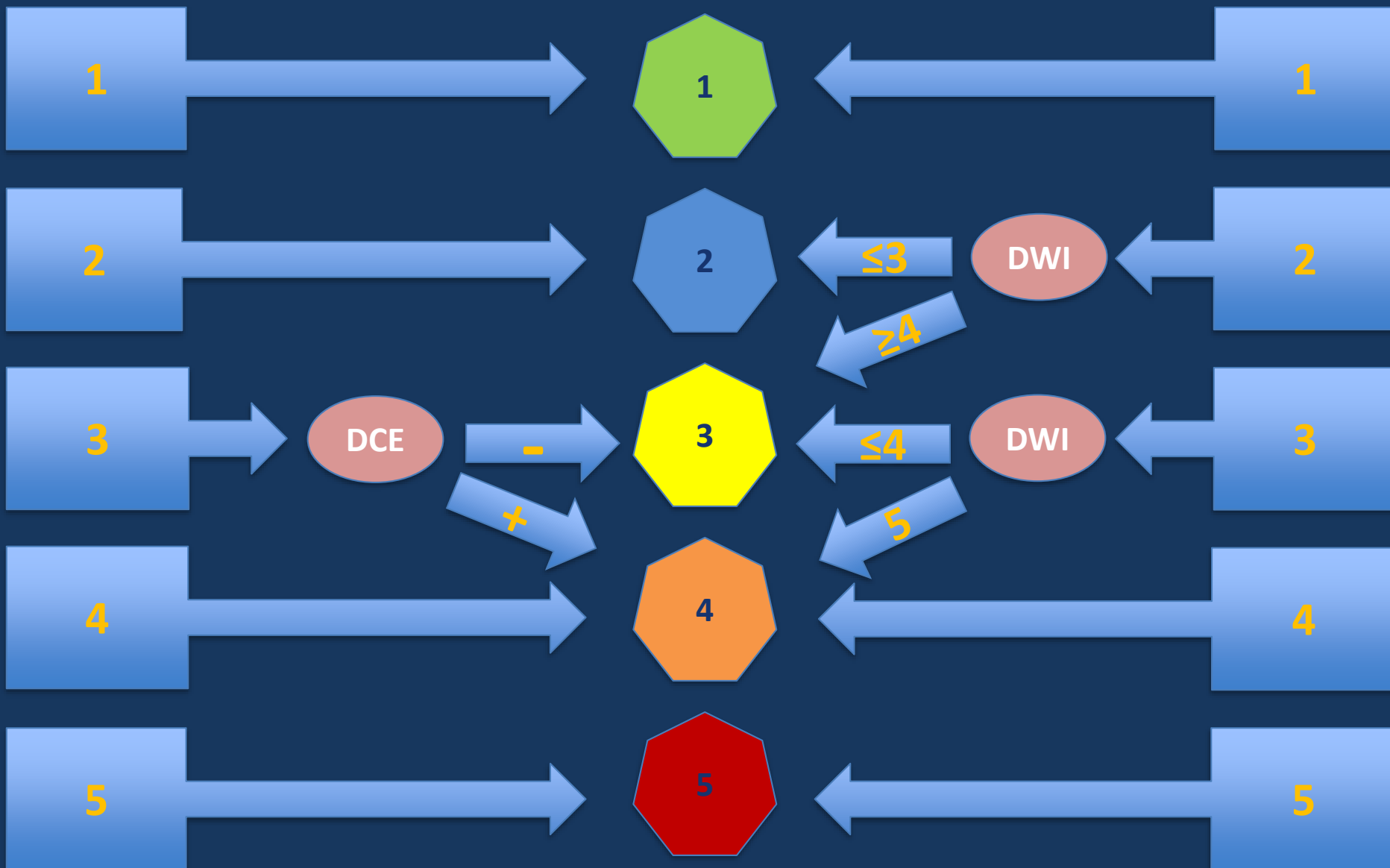
T2W	DWI	DCE	Overall
1	Any	Any	1
2	≤3	Any	2
	≥4	Any	3
3	≤4	Any	3
	5	Any	4
4	Any	Any	4
5	Any	Any	5

Peripheral Zone

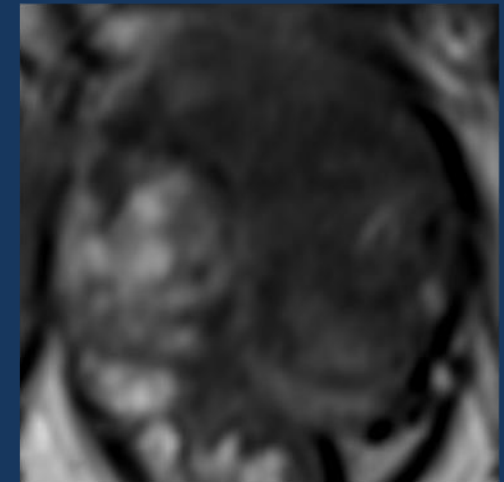
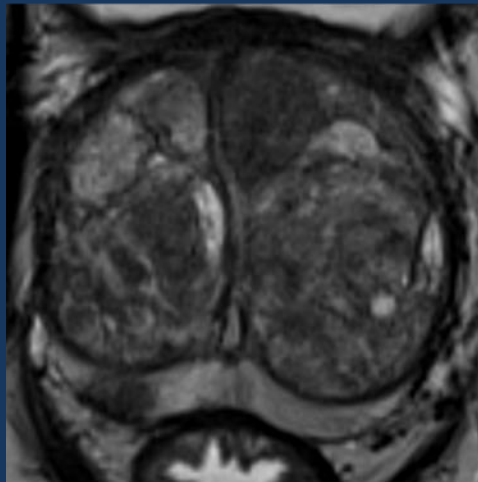
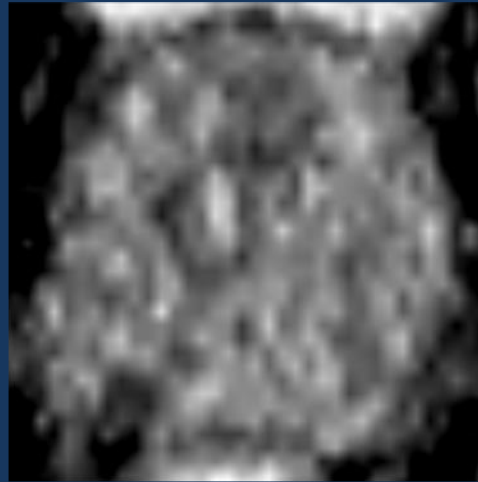
Transition Zone

DWI

T2WI



Overall PI-RADS v2.1 Assessment



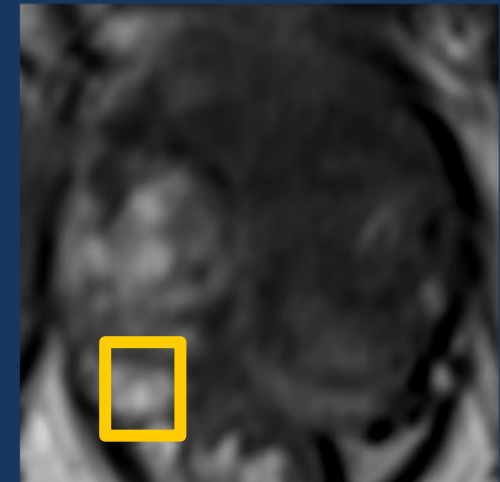
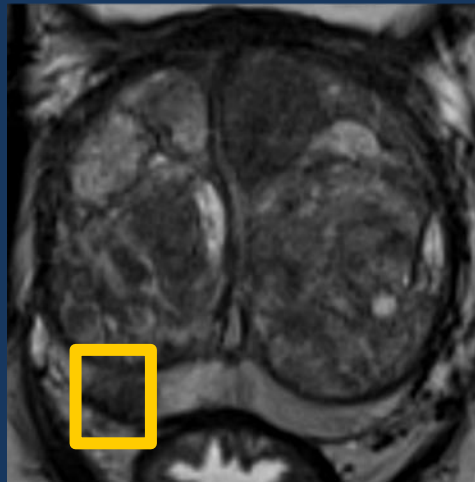
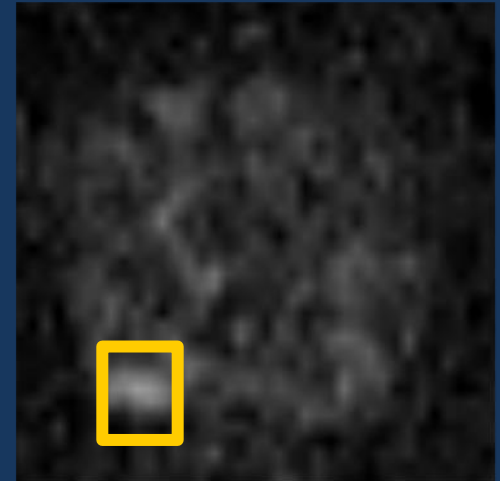
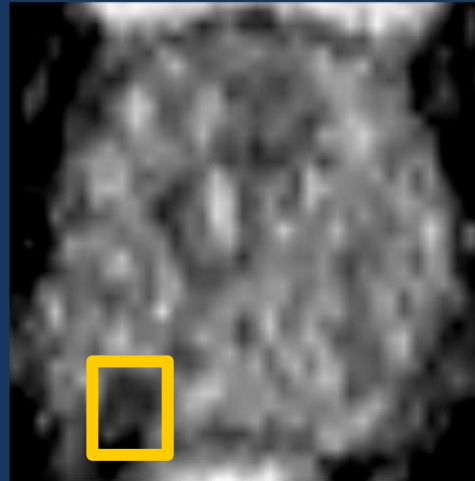
Overall PI-RADS v2.1 Assessment

Peripheral Zone (PZ)

Nodule 10 mm



DWI	T2W	DCE	PIRADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



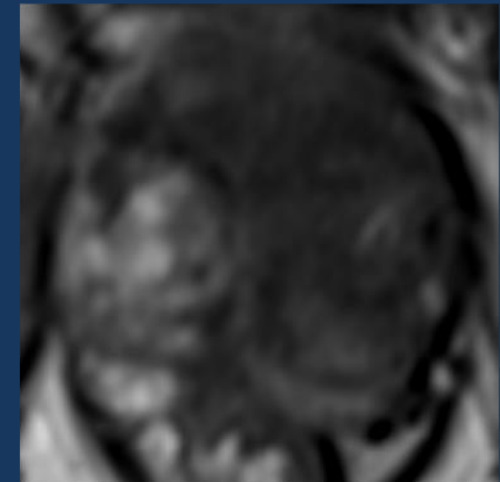
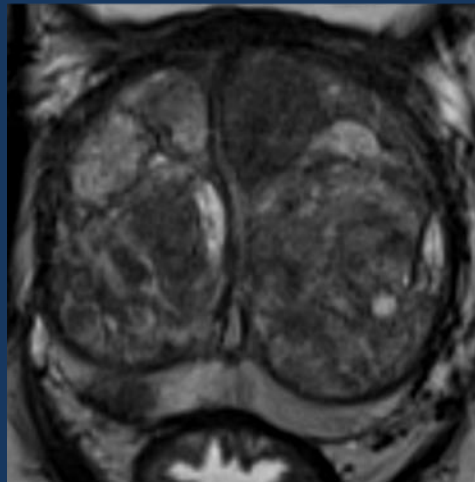
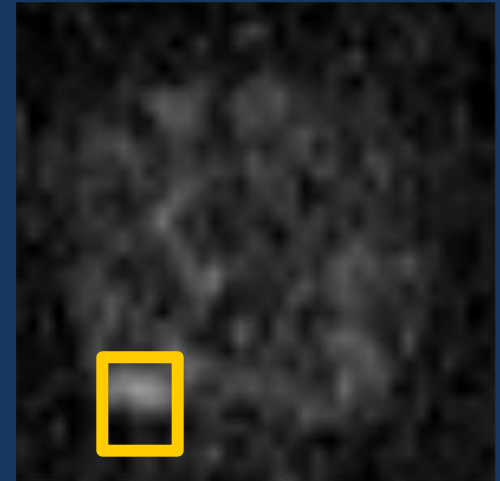
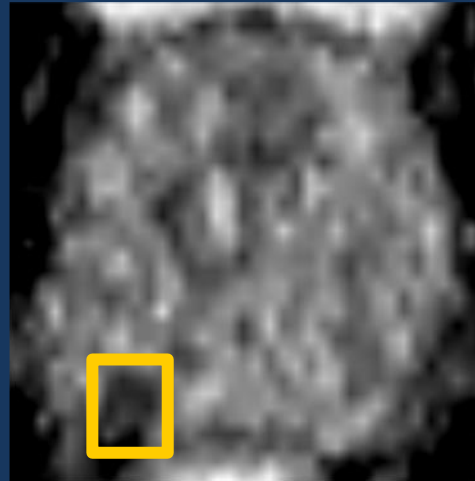
Overall PI-RADS v2.1 Assessment

Peripheral Zone (PZ)

Nodule 10 mm

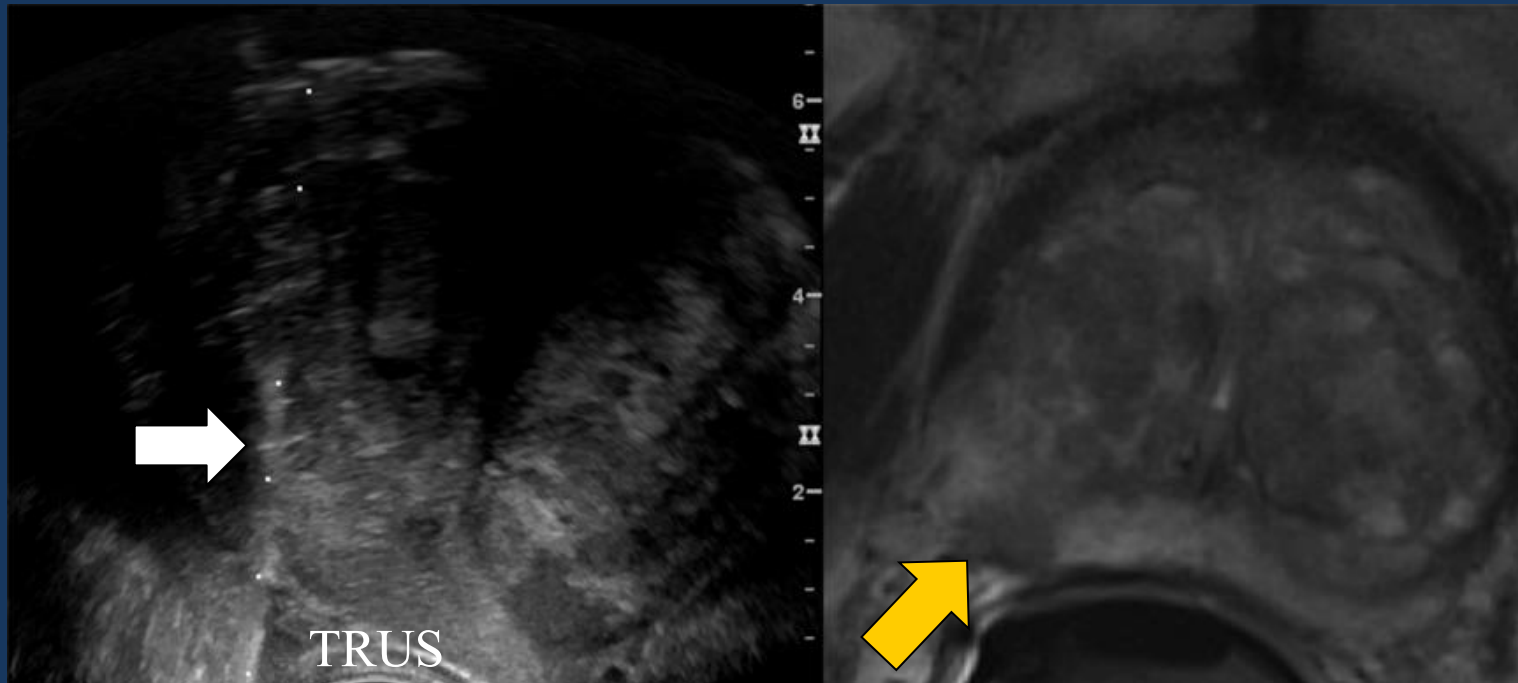


DWI	T2W	DCE	PIRADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



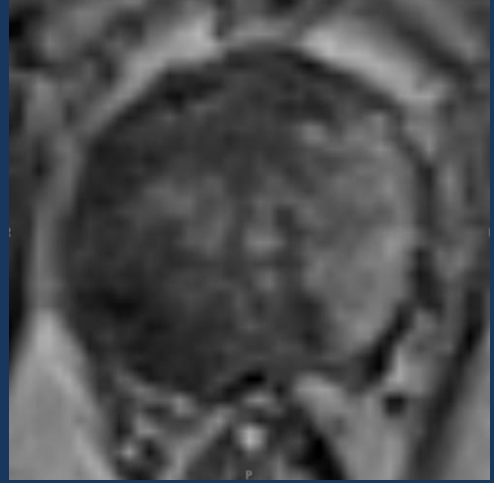
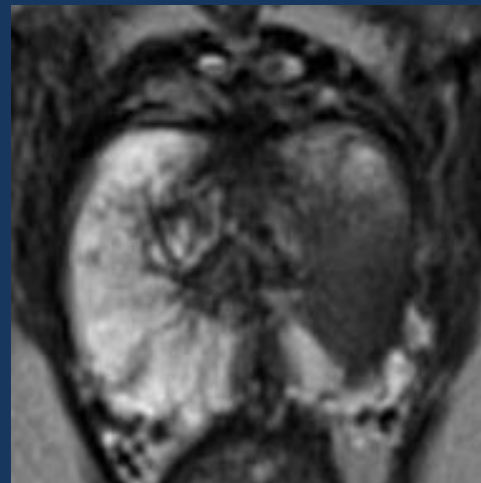
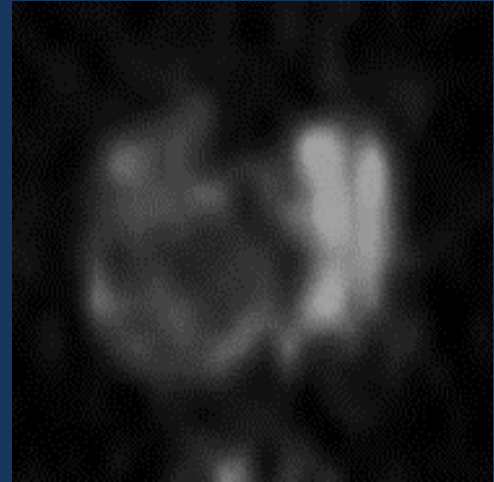
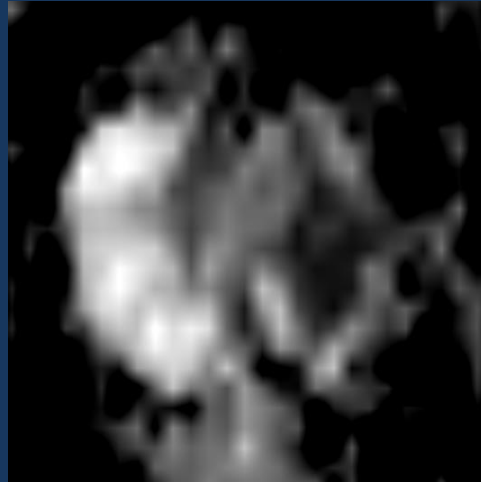
PI-RADS 4: clinically significant cancer is likely

MR-TRUS fusion biopsy



75M, PSA 11 ng/mL (PSAD 0.11) with prior TRUS BX Gleason 3 + 3 = 6 prostate cancer in 2 cores from the right peripheral zone. DRE neg. Patient in AS on F-U MRI PI-RADS 4. Targeted BX Gleason score **3+3=6** prostate cancer involving 60% of the core, **low risk**. No change on F-U mpMRI two years later. Patient remains in AS.

Overall PI-RADS v2.1 Assessment



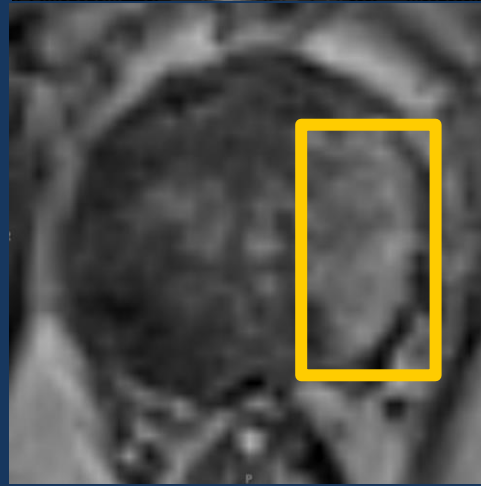
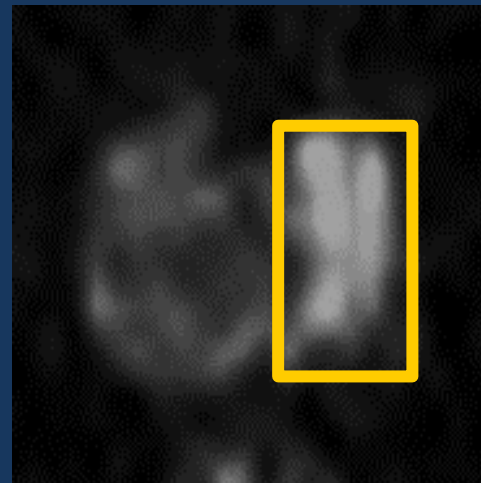
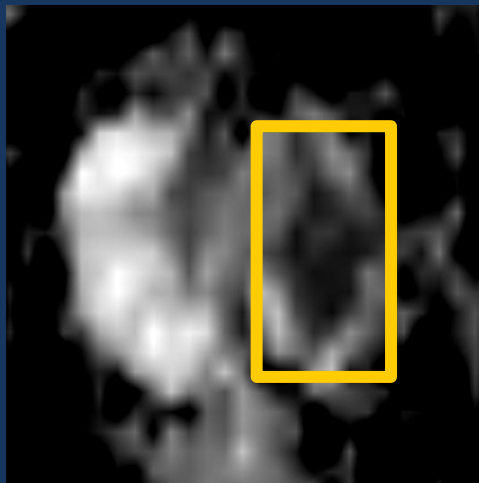
Overall PI-RADS v2.1 Assessment

Peripheral Zone (PZ)

Nodule 20 mm



DWI	T2W	DCE	PIRADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



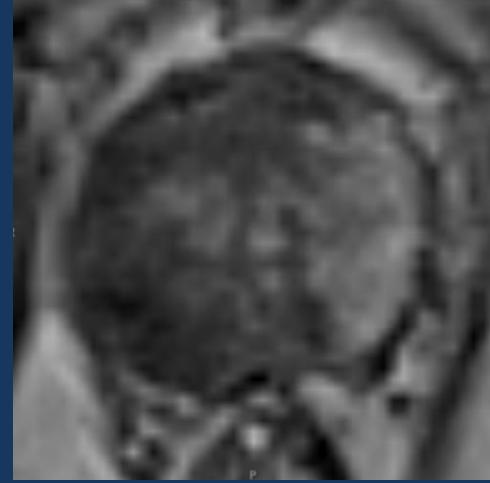
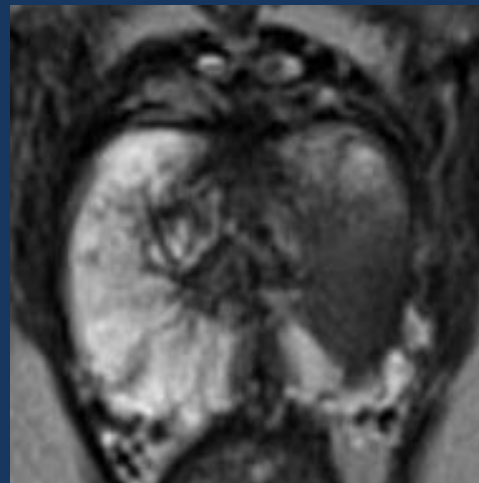
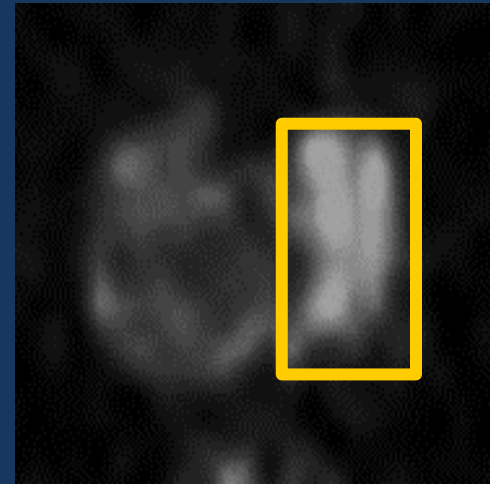
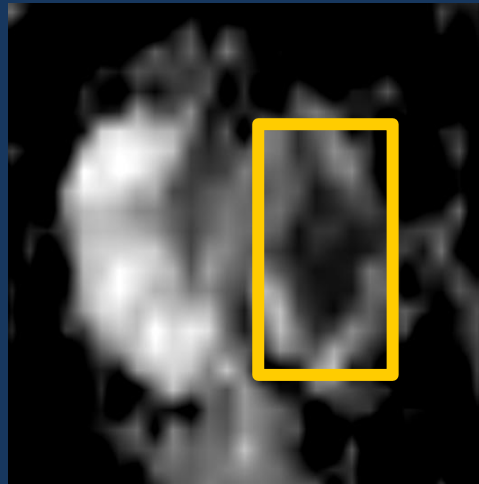
Overall PI-RADS v2.1 Assessment

Peripheral Zone (PZ)

Nodule 20 mm

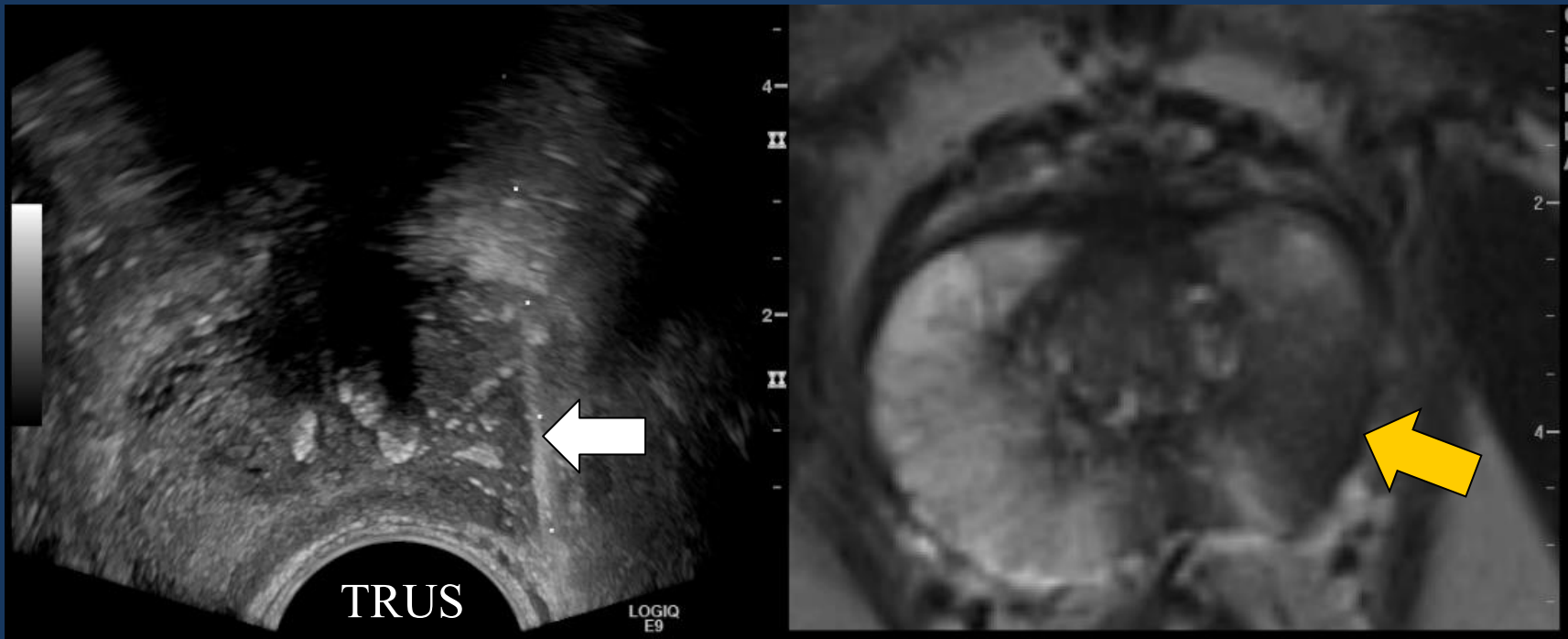


DWI	T2W	DCE	PI-RADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



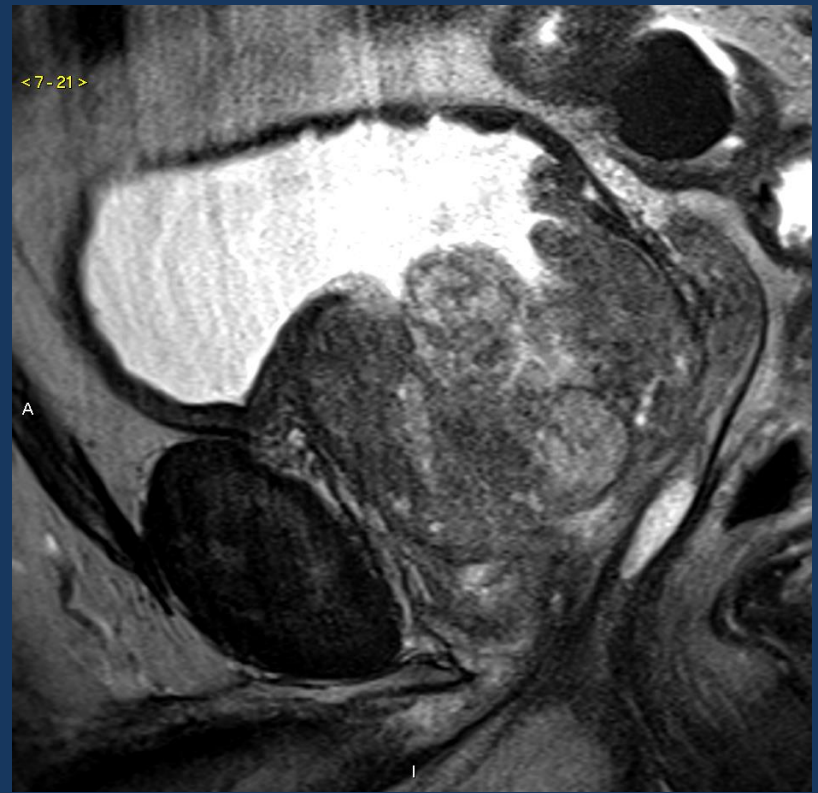
PI-RADS 5: clinically significant cancer highly likely

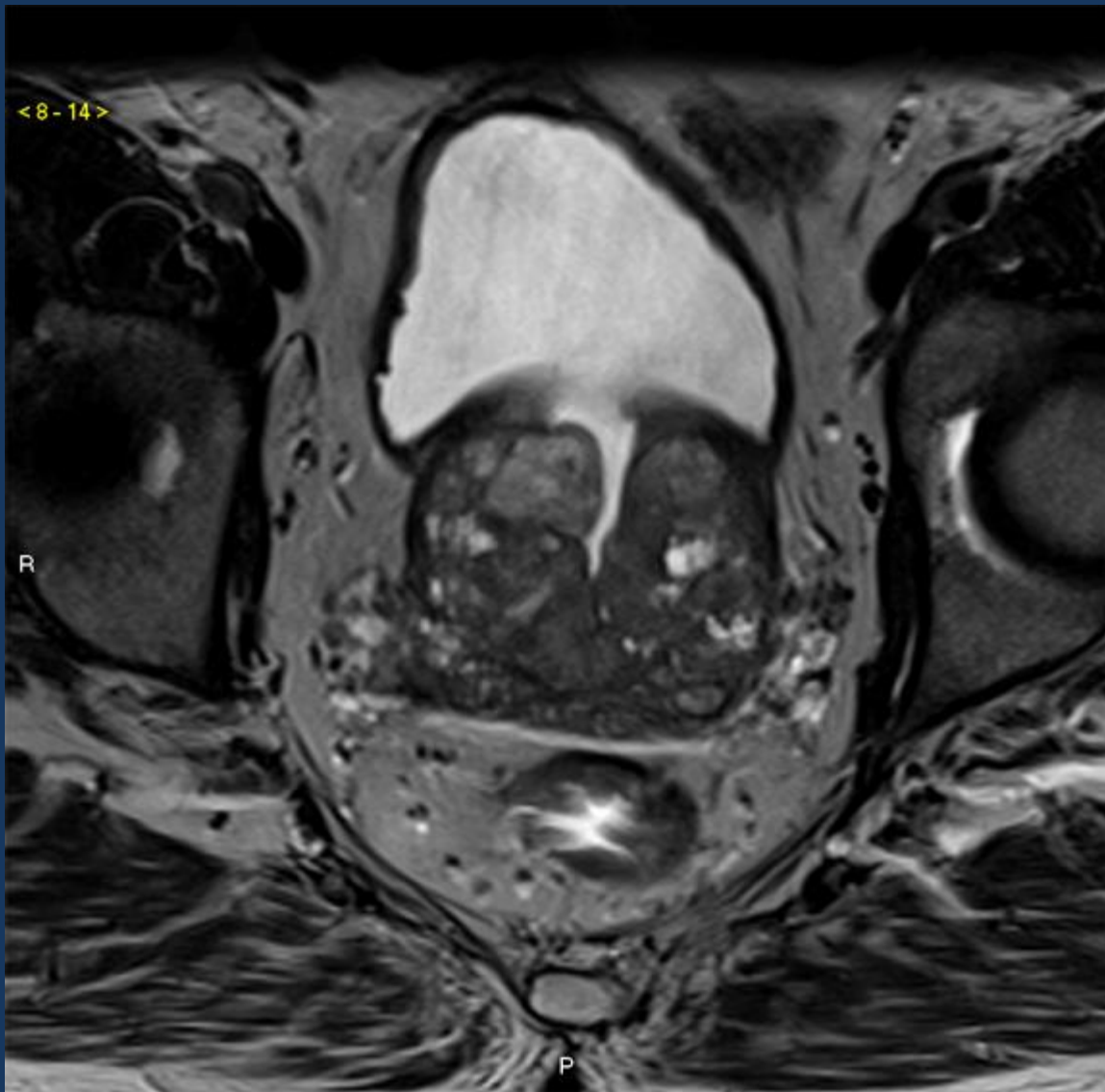
MR-TRUS fusion biopsy

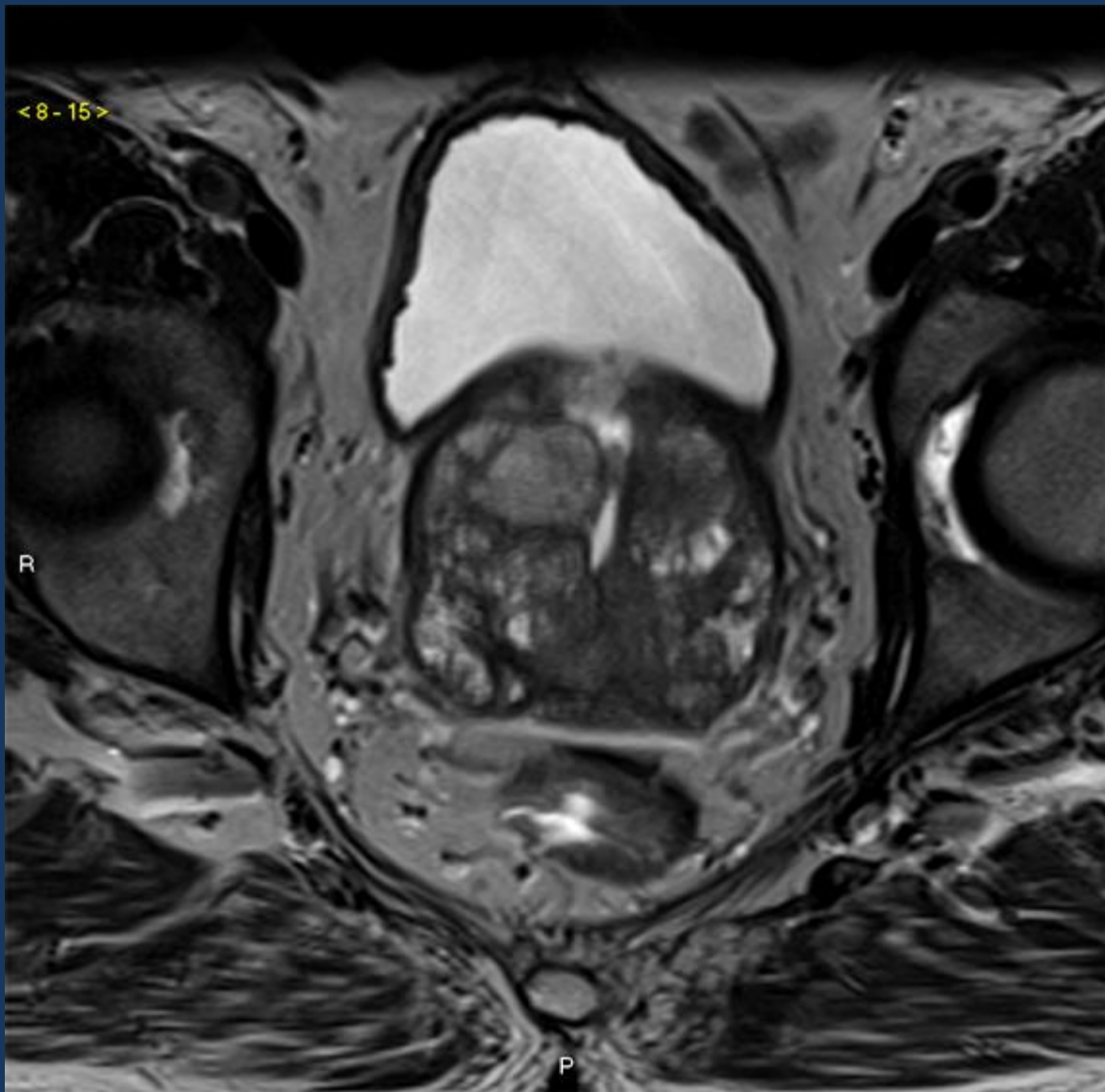


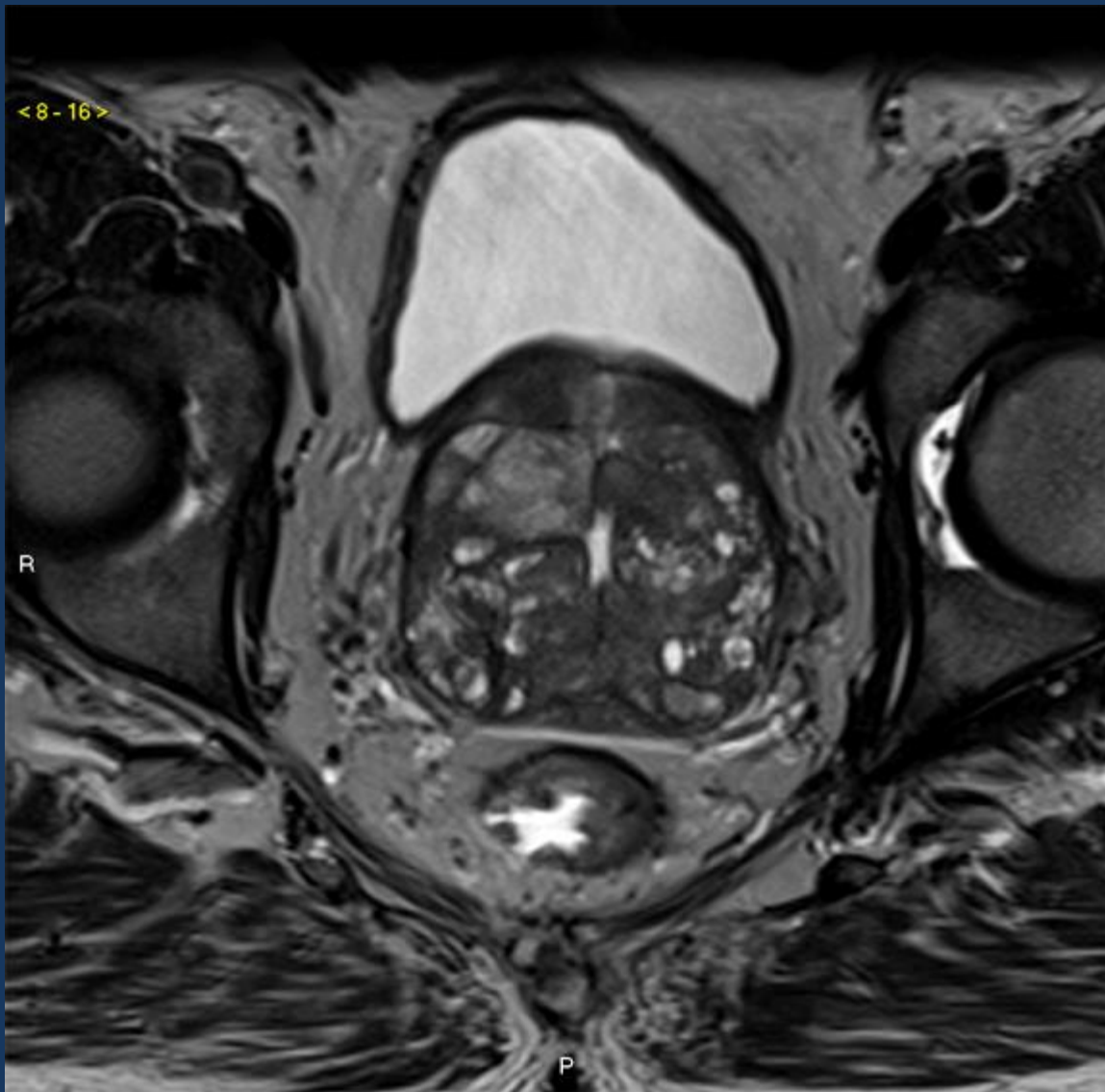
59M, PSA increased from 4.1 to 8.8 ng/mL, no prior BX:
Gleason **3+4=7** (80% of 1 core), G3+3=6 tumor (2 cores, 50%
each), and High grade prostatic intra-epithelial neoplasia
(HGPIN) → intermediate risk

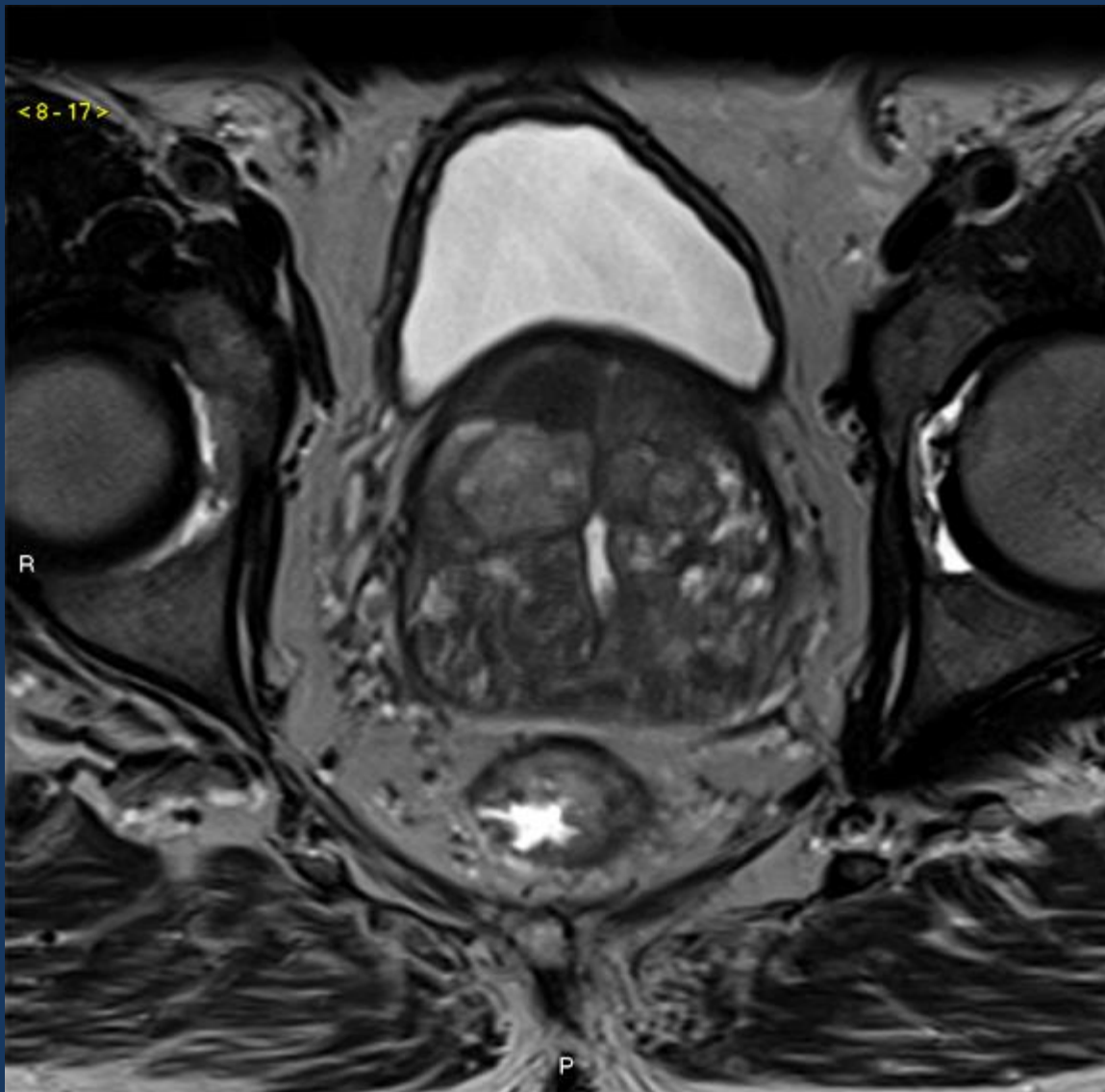
Transition Zone: BPH and ...

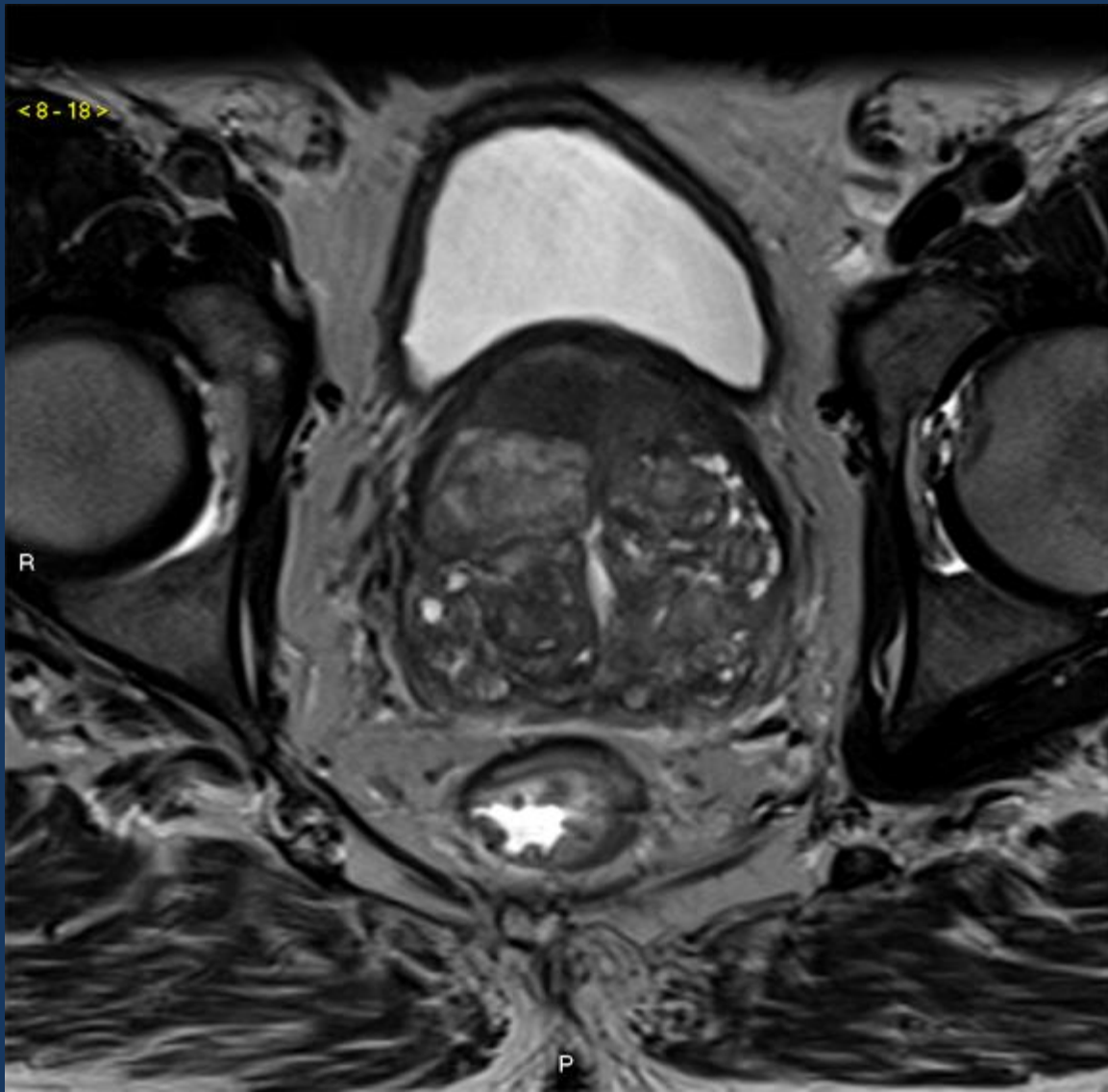


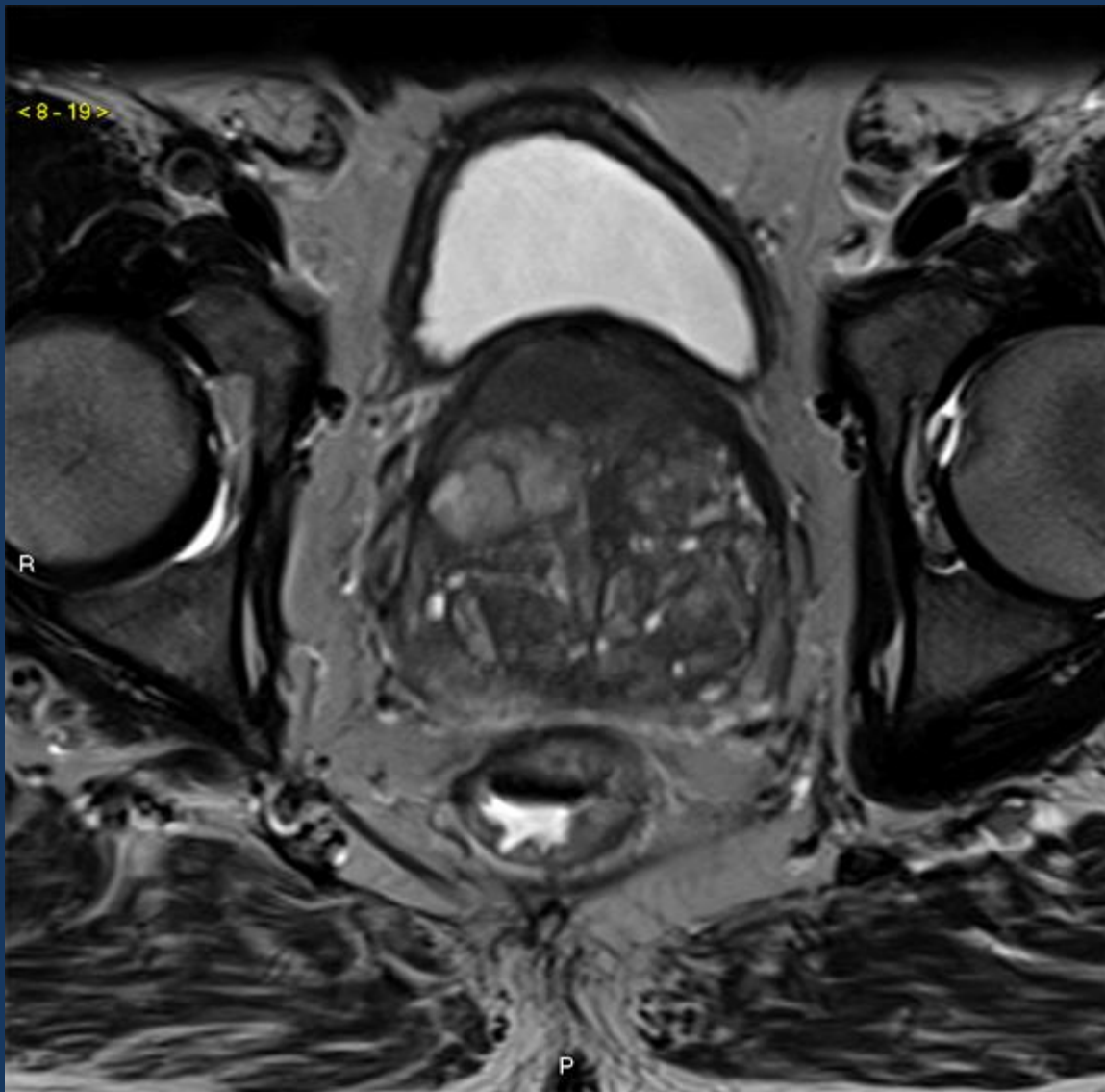


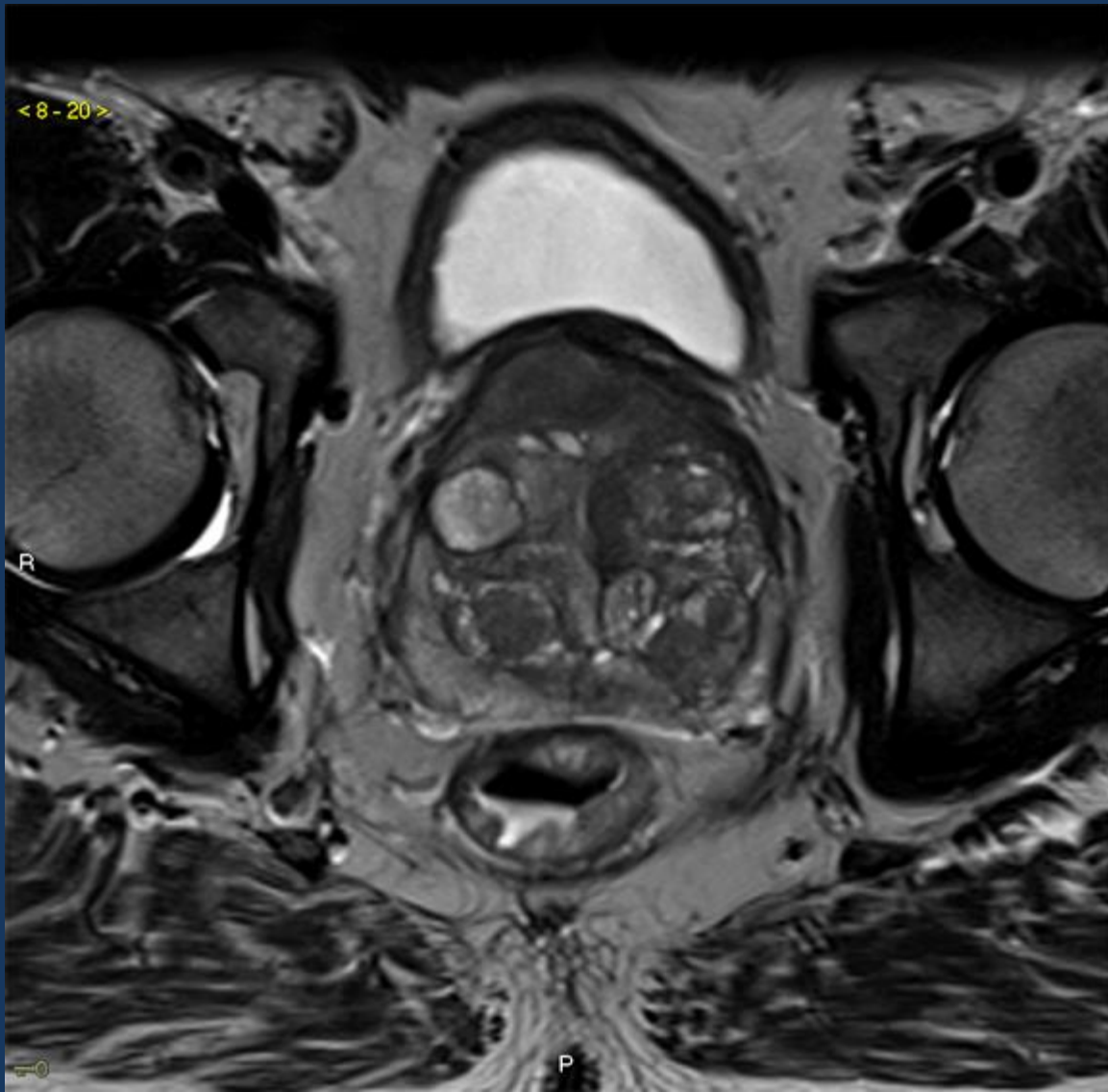


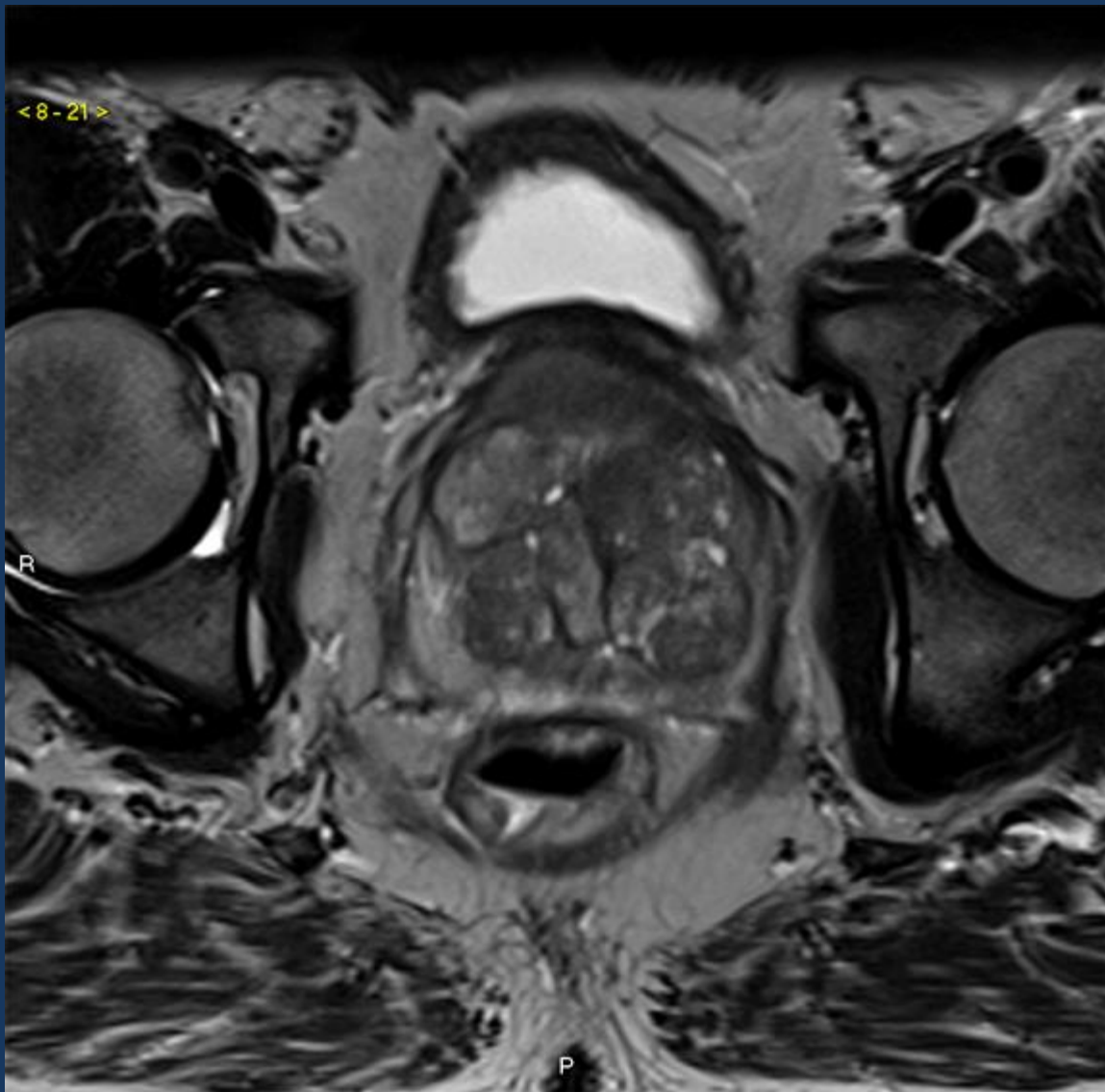




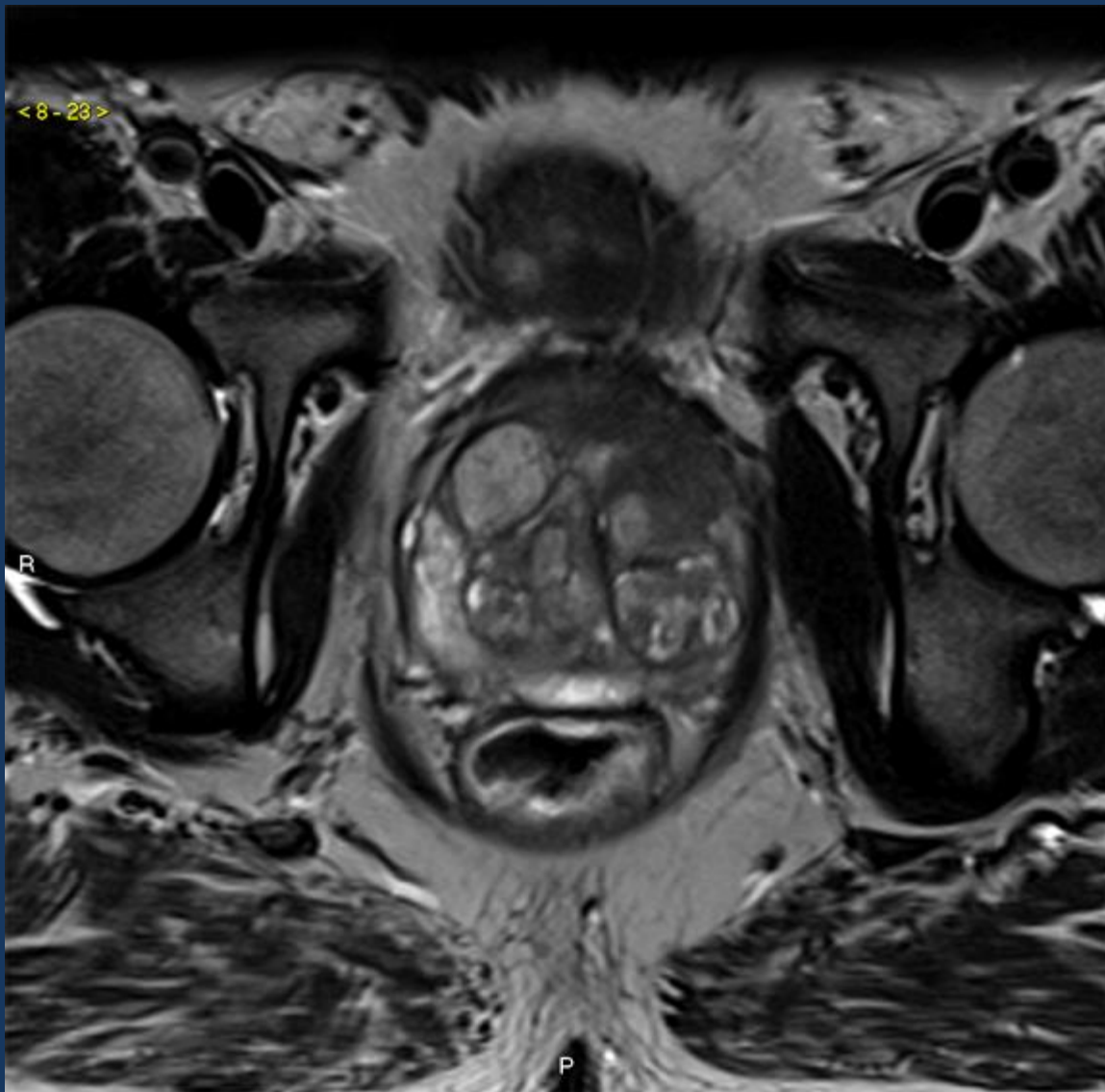


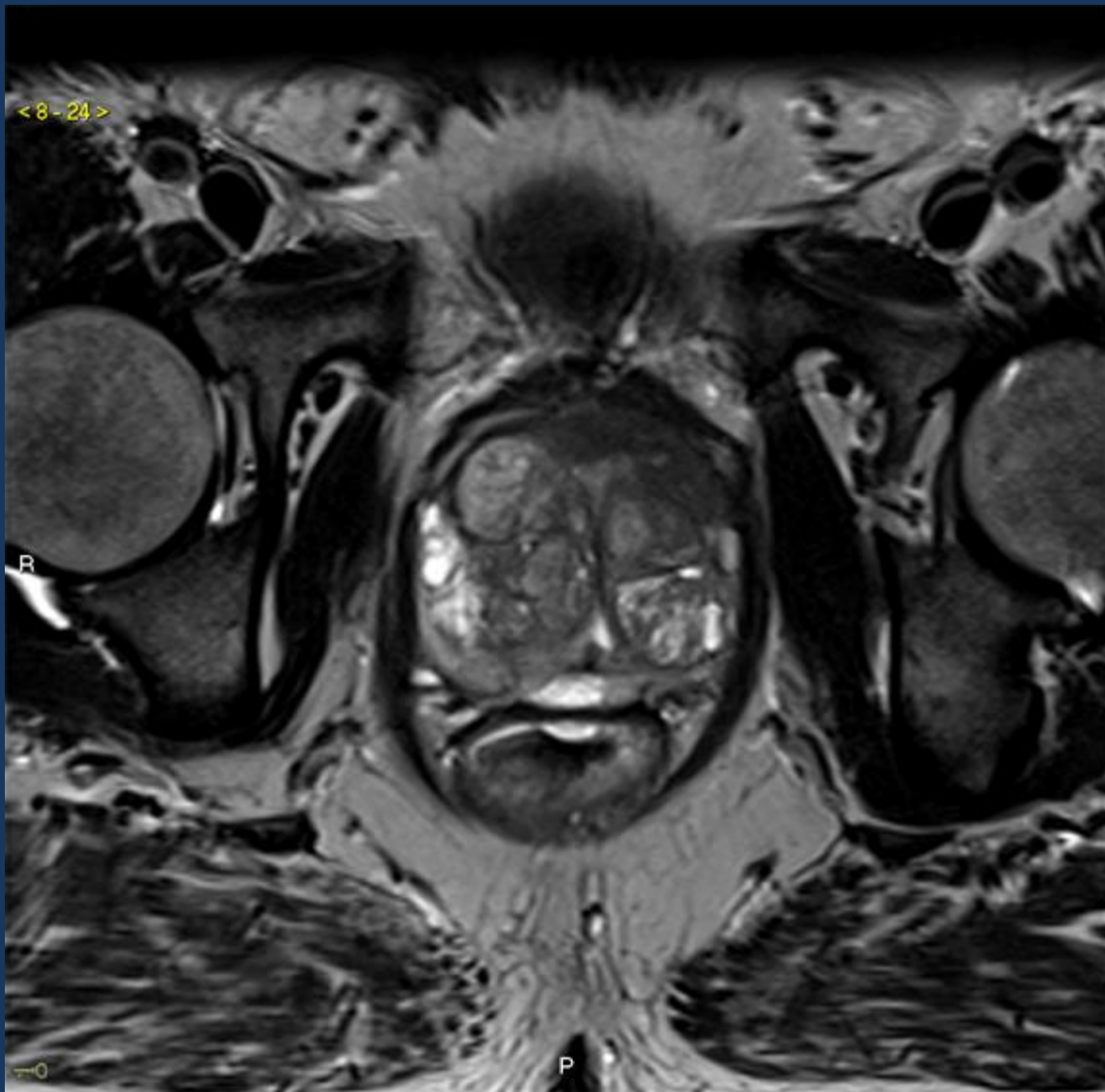






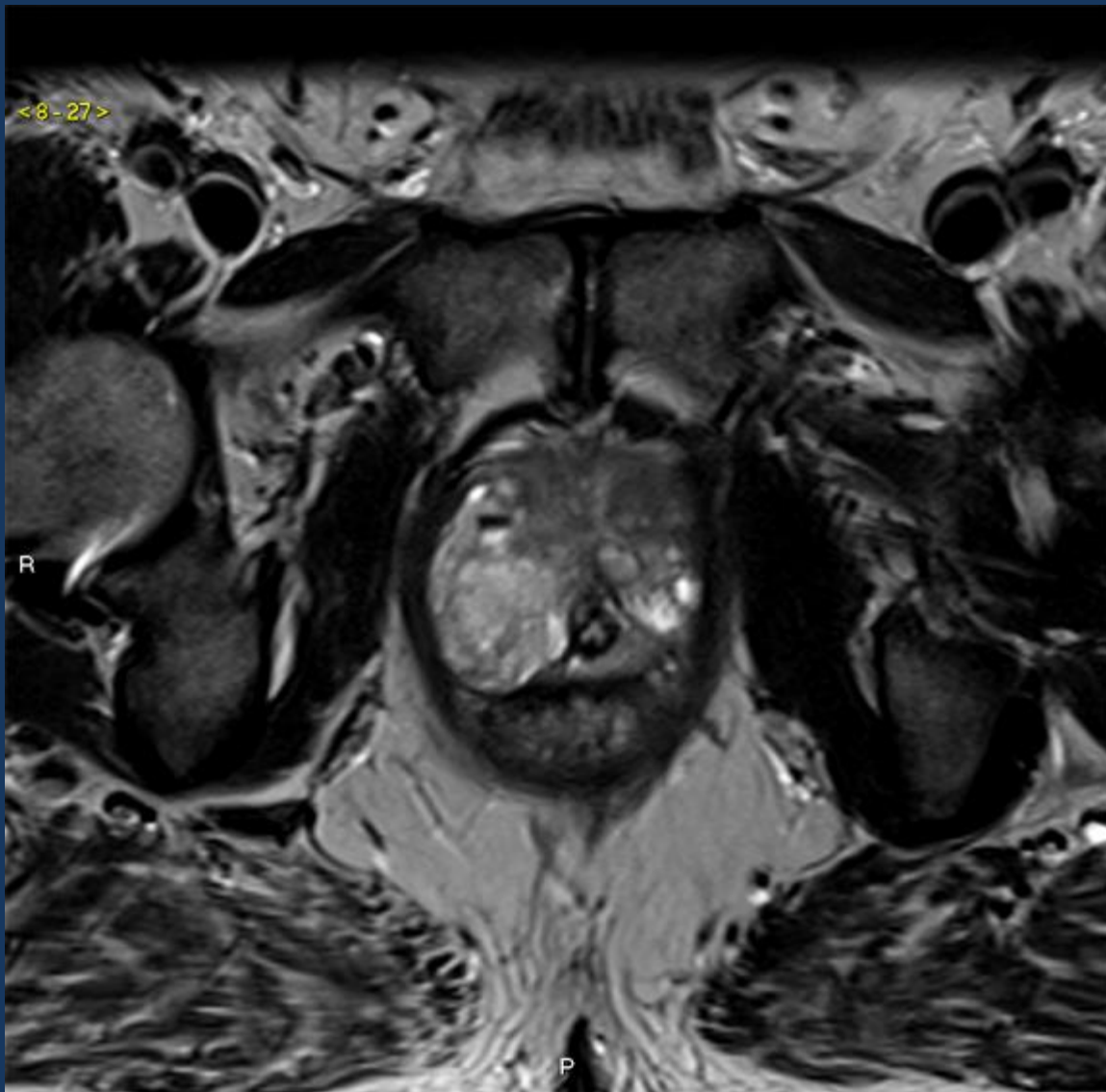


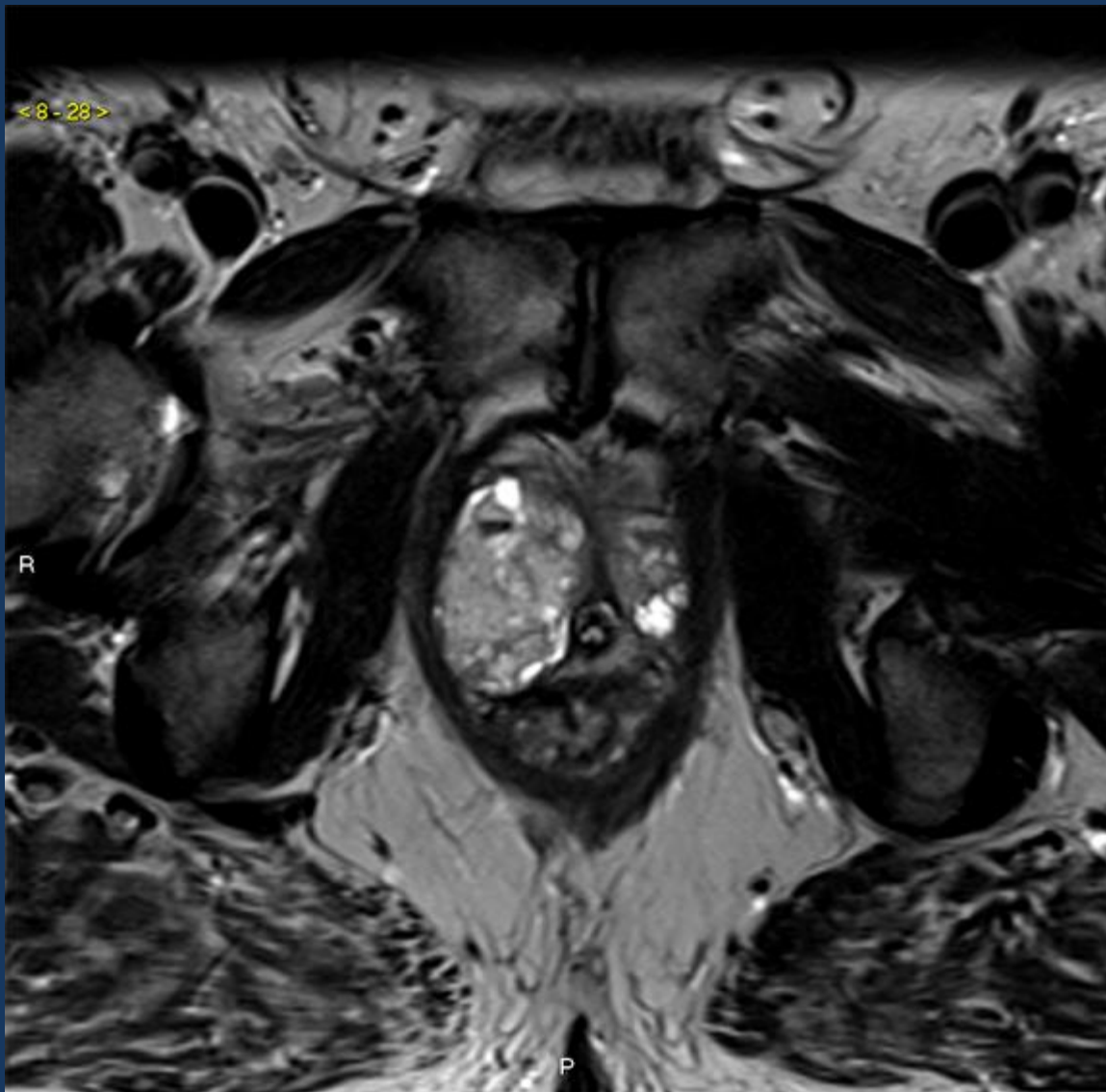


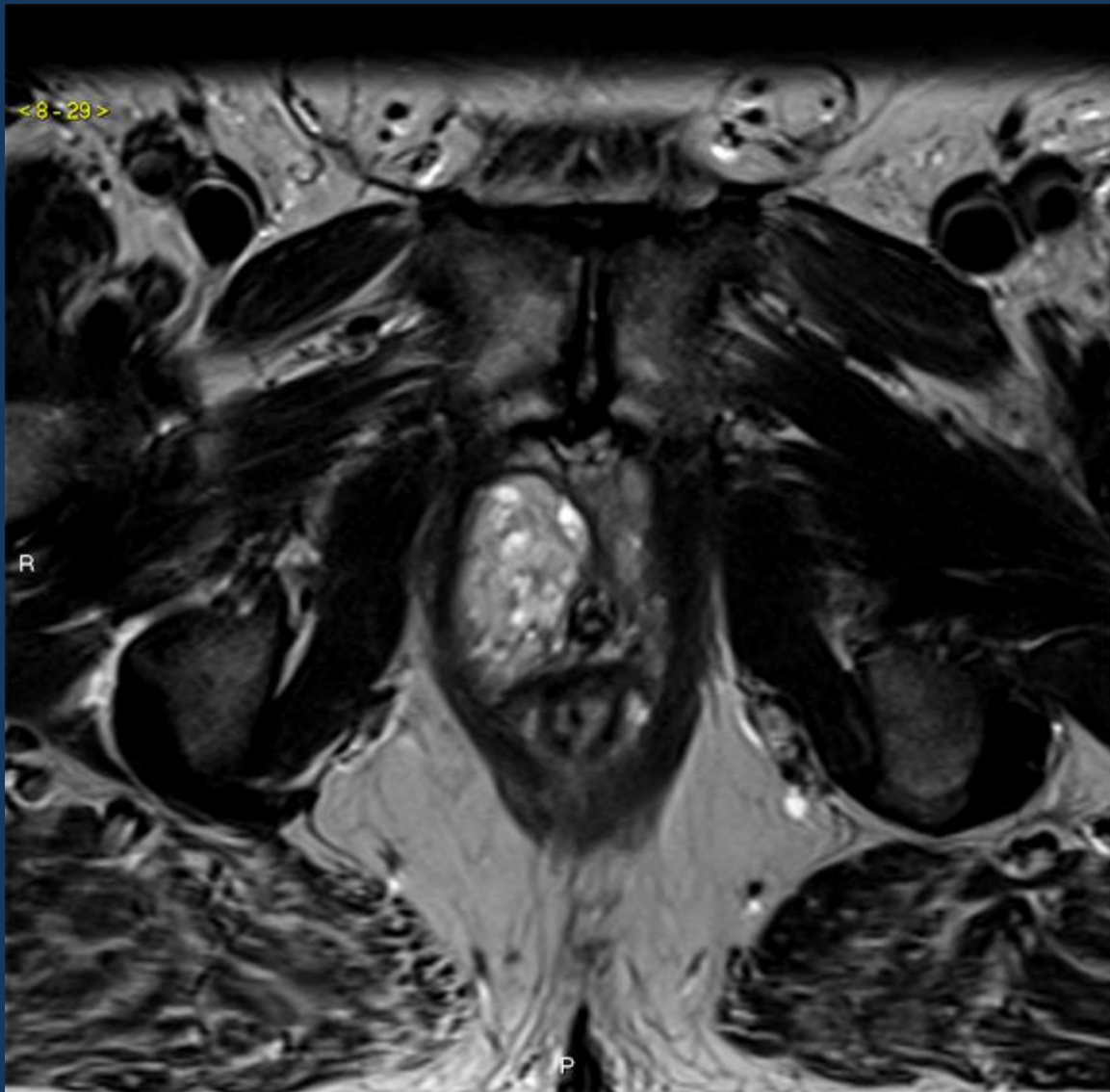


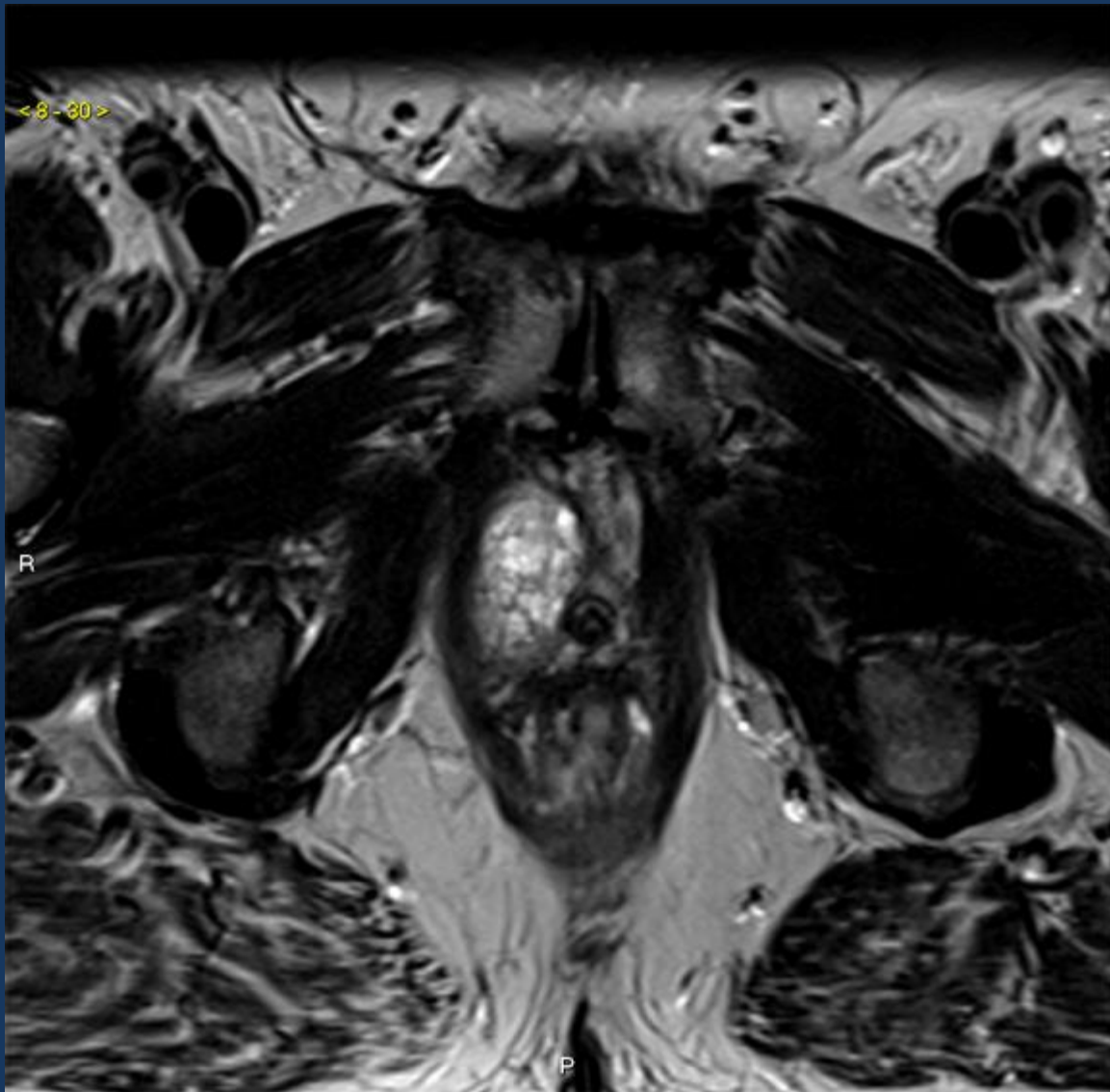


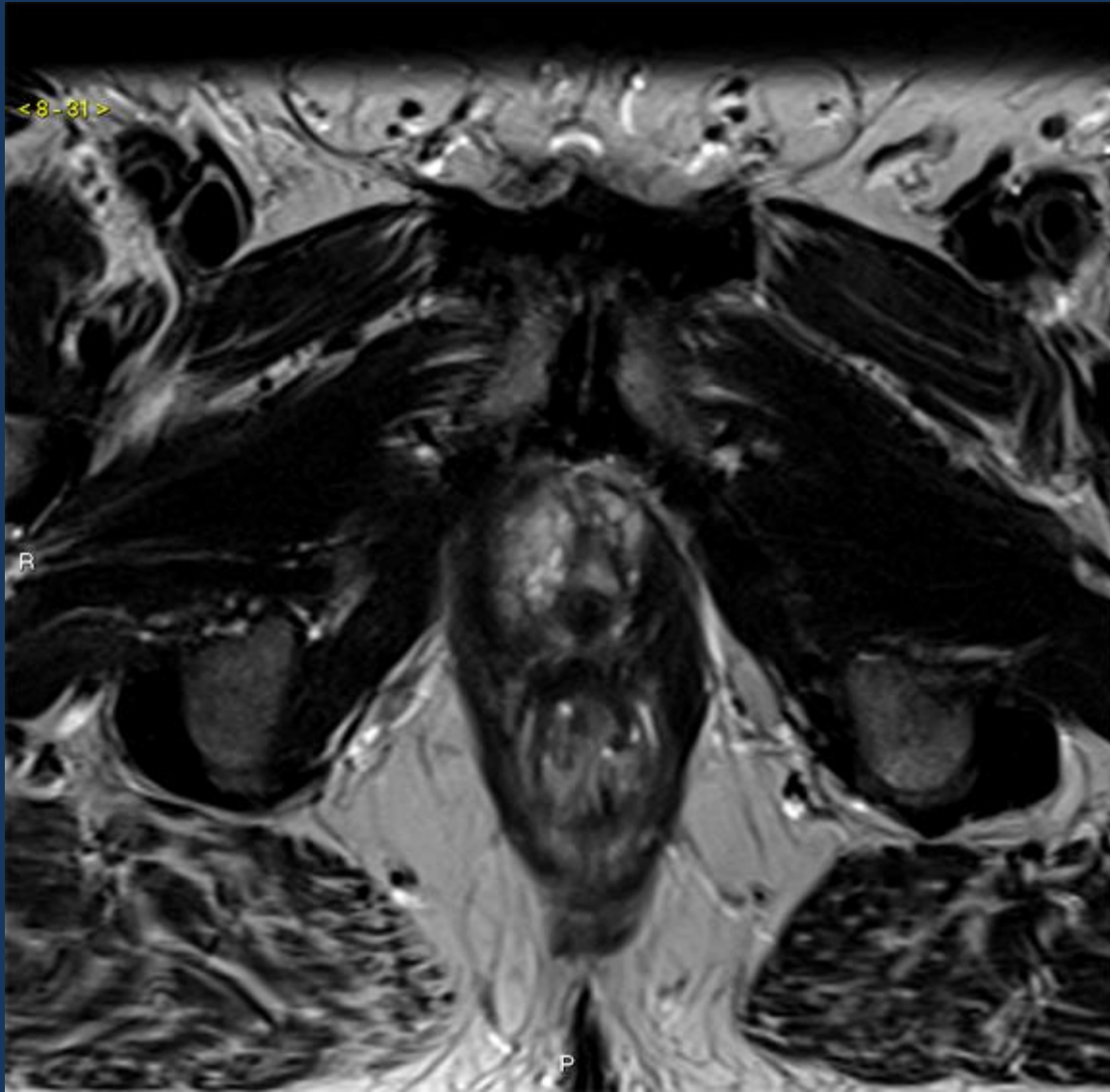




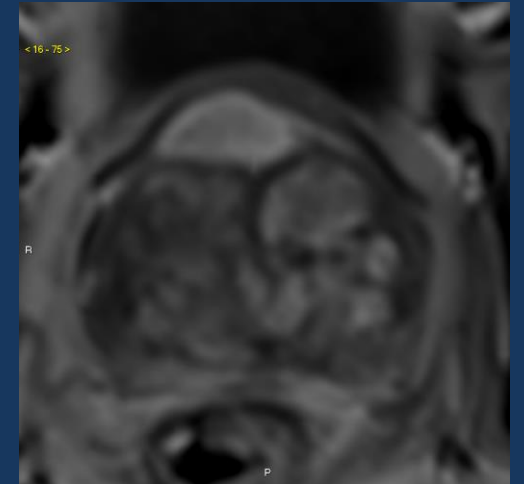
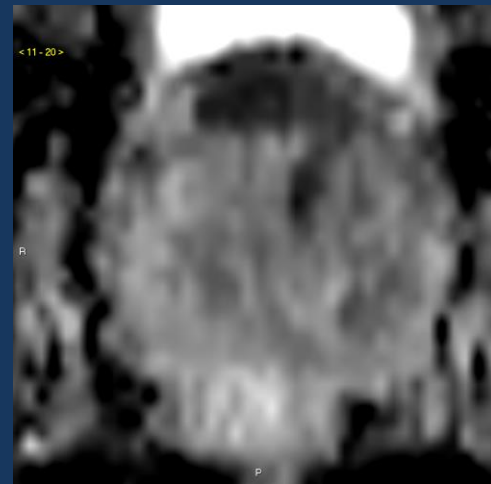
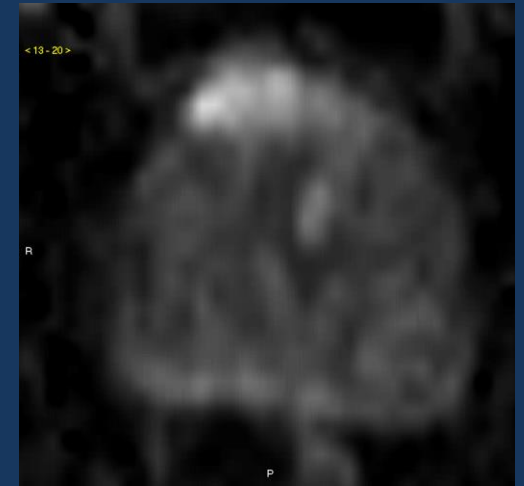
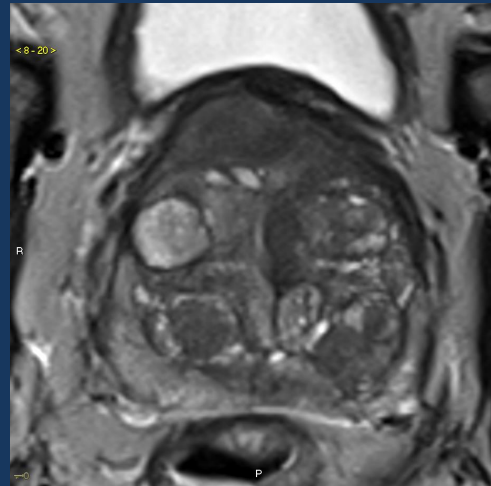








Overall PI-RADS v2.1 Assessment



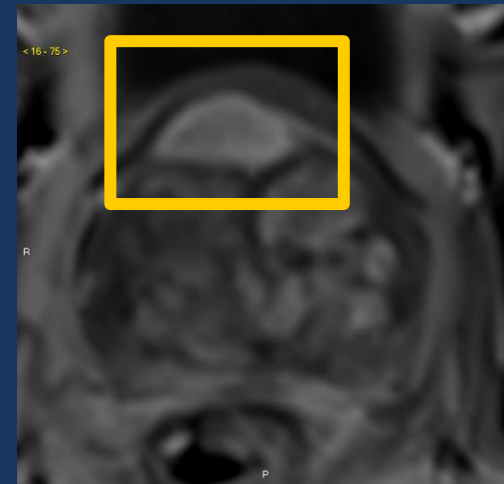
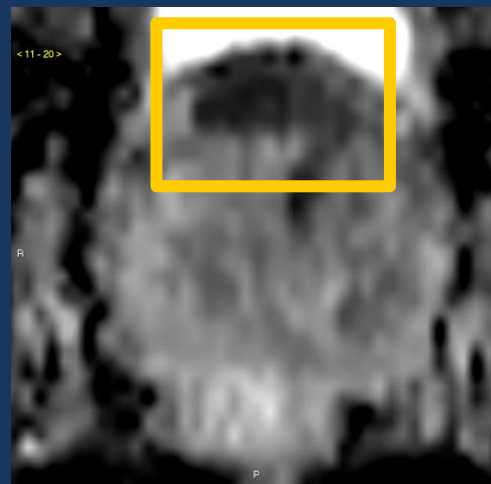
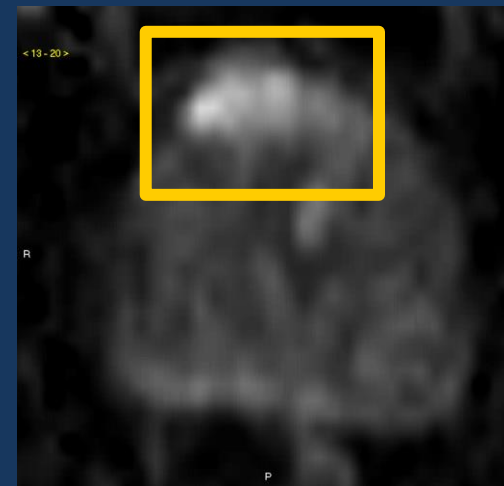
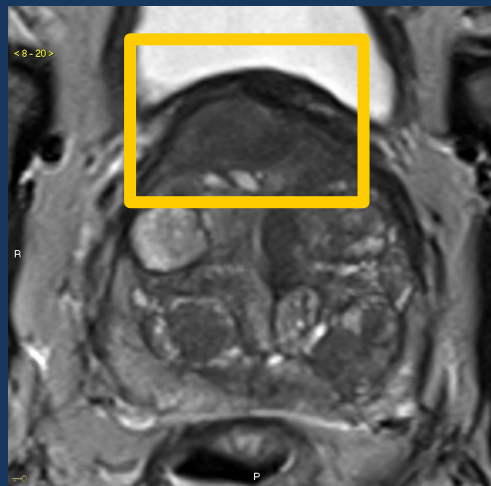
Overall PI-RADS v2.1 Assessment

Transition Zone (TZ)

Nodule 20 mm



T2W	DWI	DCE	Overall
1	Any	Any	1
2	≤ 3	Any	2
	≥ 4	Any	3
3	≤ 4	Any	3
	5	Any	4
4	Any	Any	4
5	Any	Any	5



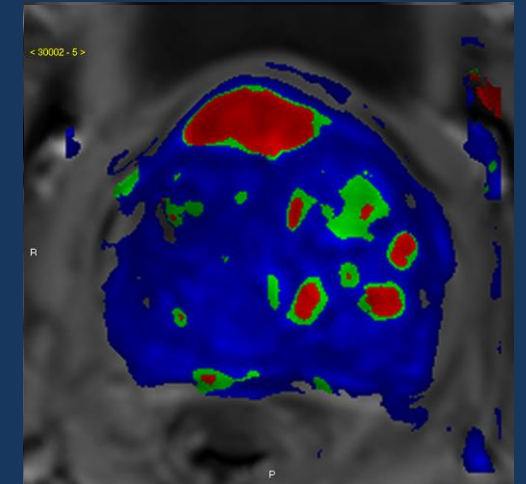
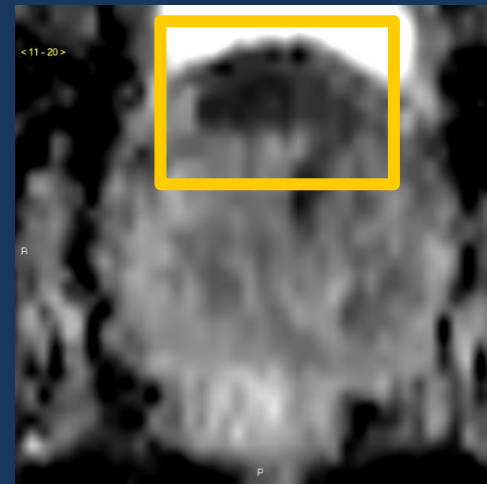
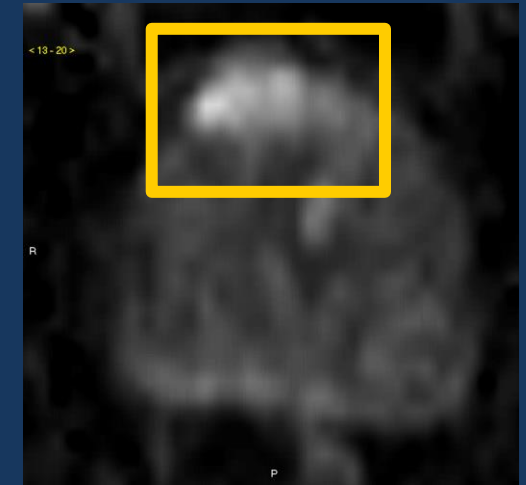
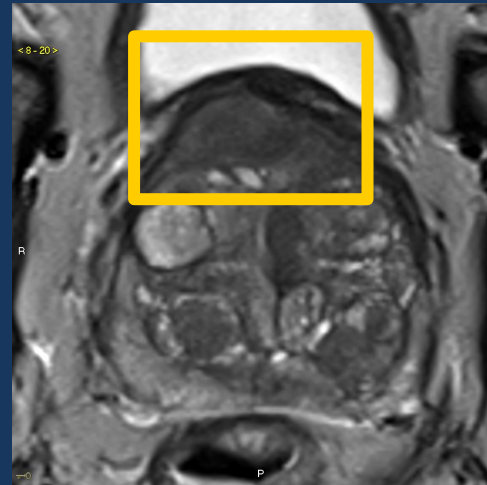
Overall PI-RADS v2.1 Assessment

Transition Zone (TZ)

Nodule 20 mm

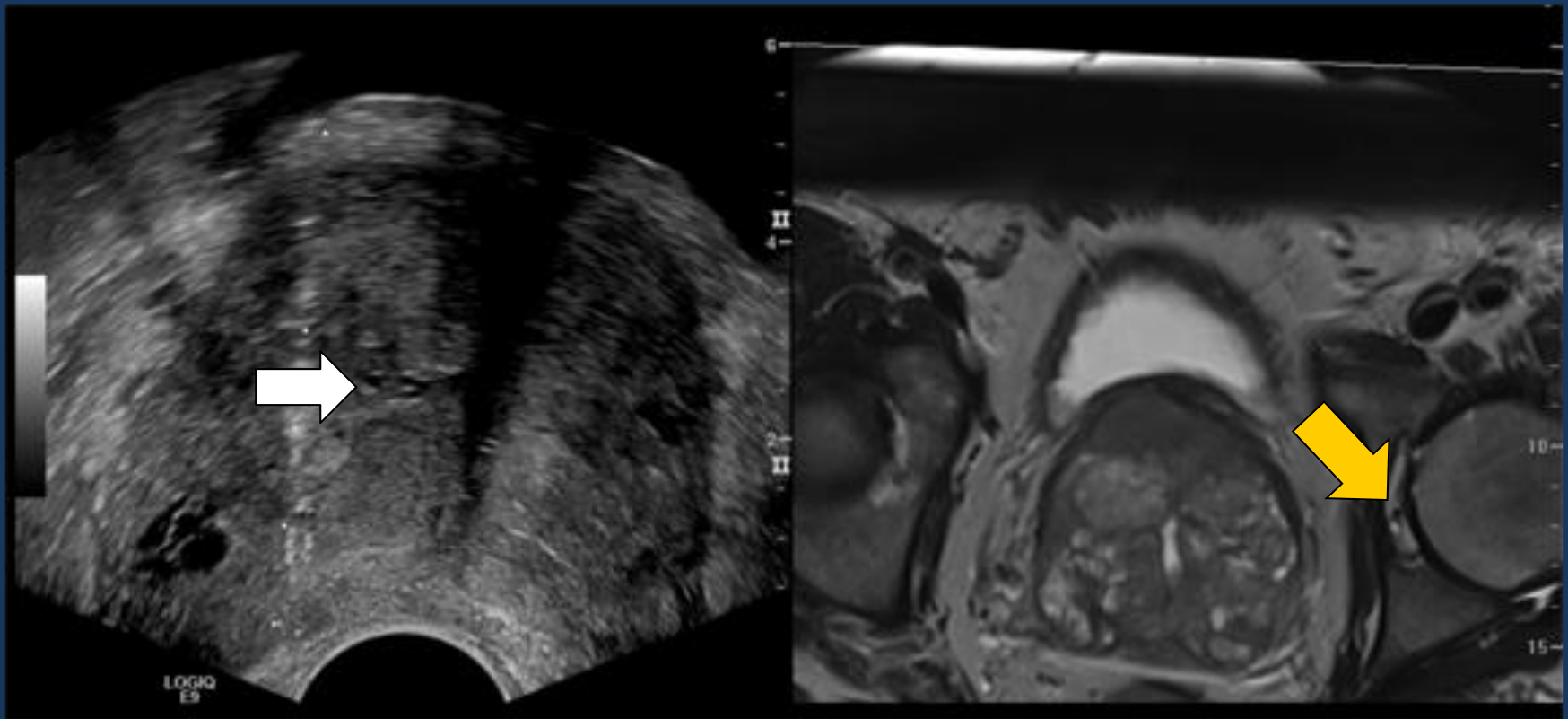


T2W	DWI	DCE	Overall
1	Any	Any	1
2	≤ 3	Any	2
	≥ 4	Any	3
3	≤ 4	Any	3
	5	Any	4
4	Any	Any	4
5	Any	Any	5



PI-RADS 5: clinically significant cancer highly likely

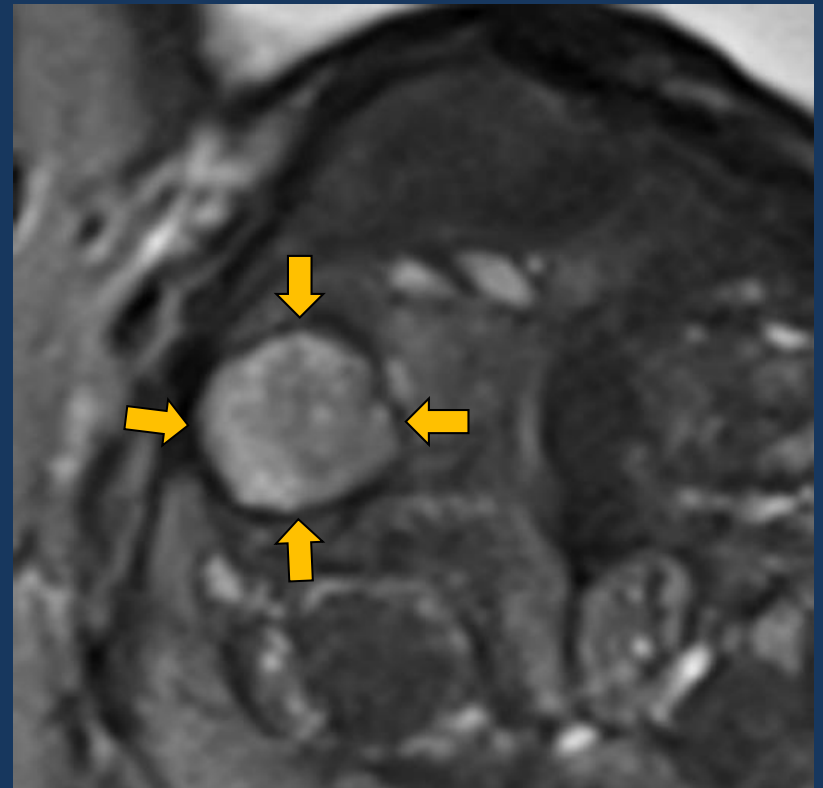
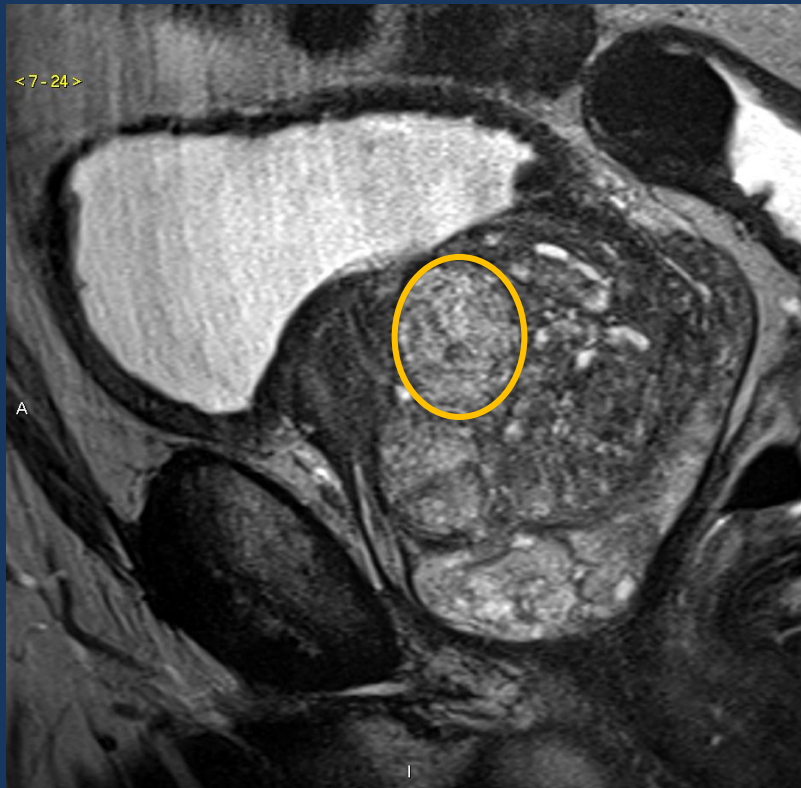
11th prostate biopsy with MR-TRUS guidance



Biopsy: **Gleason 4+3=7** (70%, 100%, 100%), 60% pattern 4
RP: **Gleason 3+5=8**; extraprostatic extension anterior, mid, non-focal
- **high risk**

BPH nodule vs. TZ Cancer

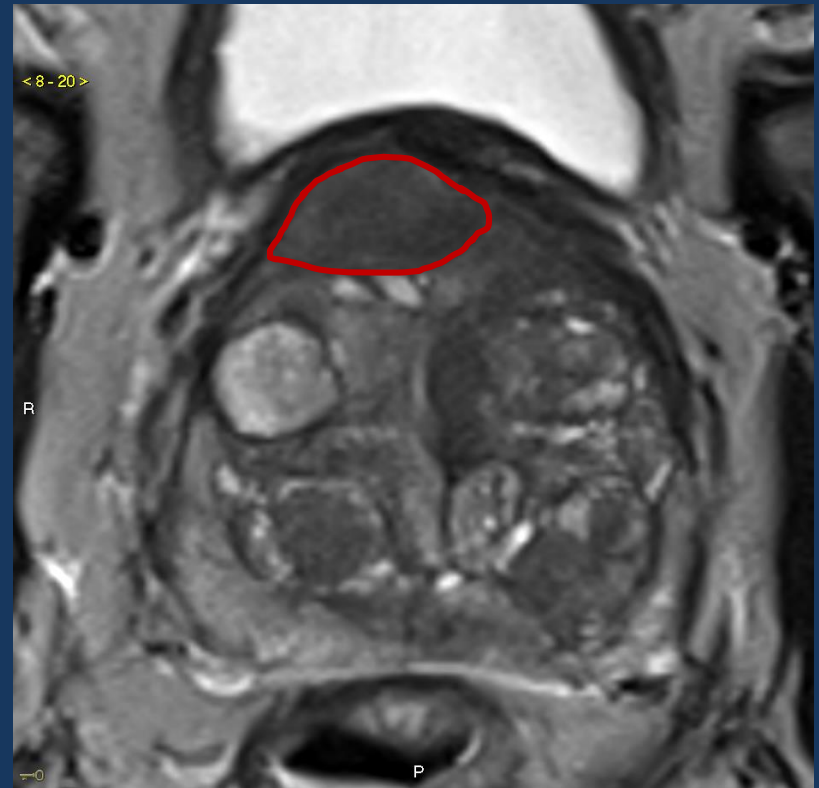
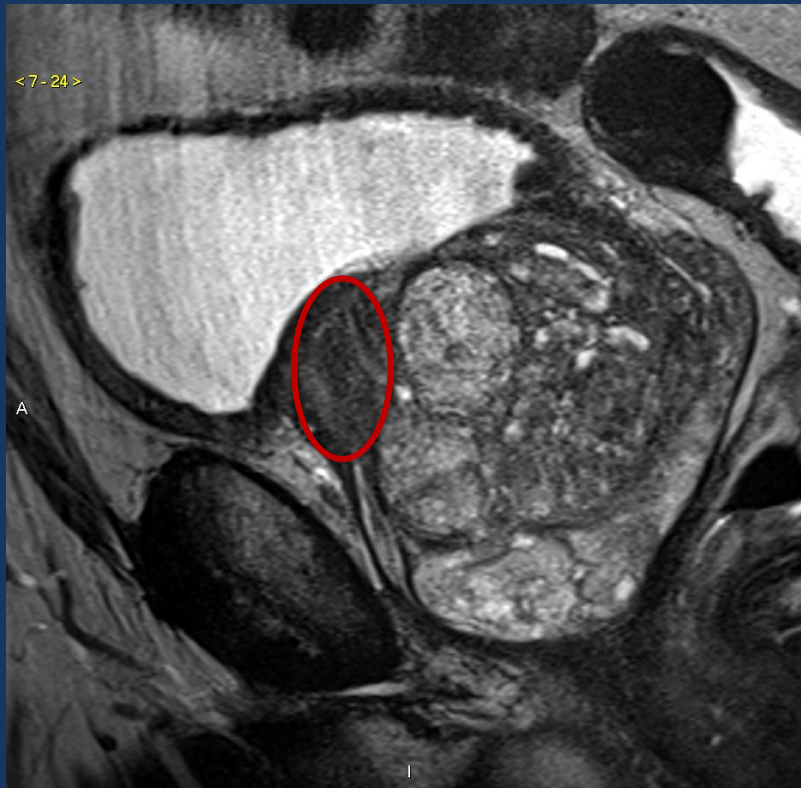
- **Encapsulated**
- **Heterogeneous**



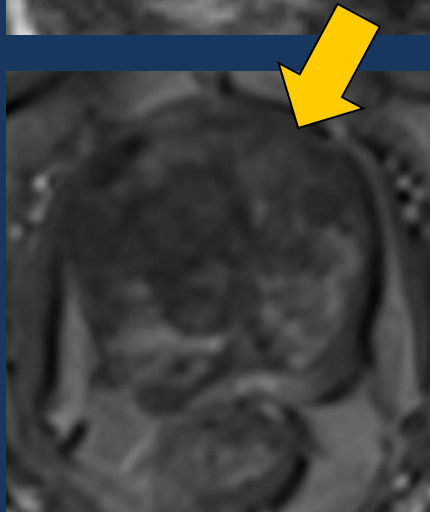
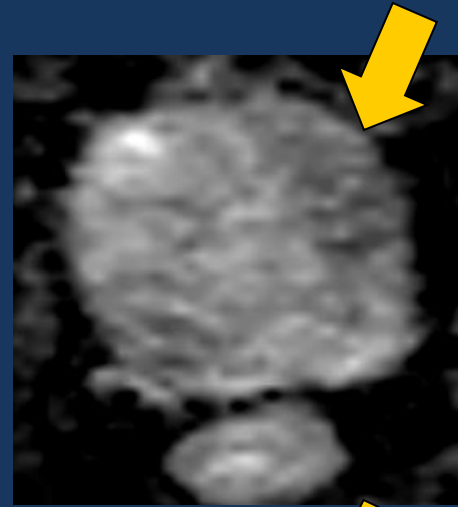
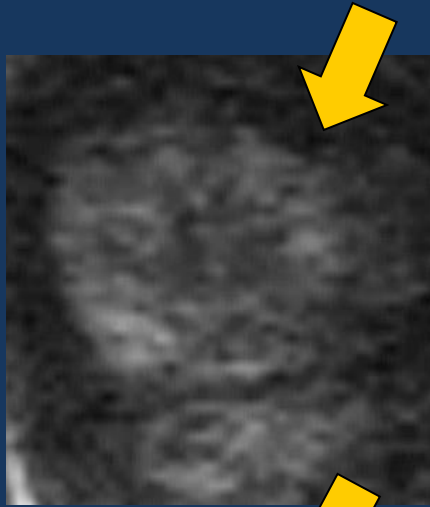
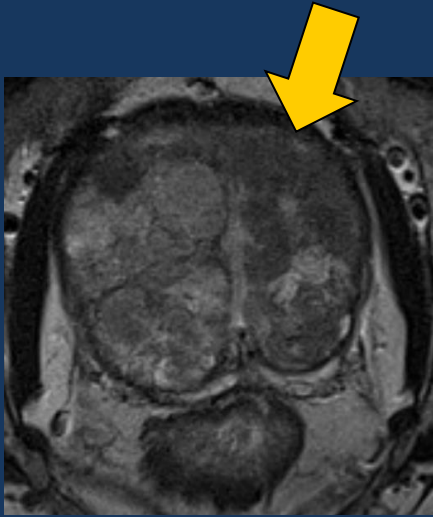
BPH nodule vs. TZ Cancer

- **Encapsulated**
- **Heterogeneous**

- **Lenticular, irregular**
- **Homogeneous low T2**



Stromal Expansion



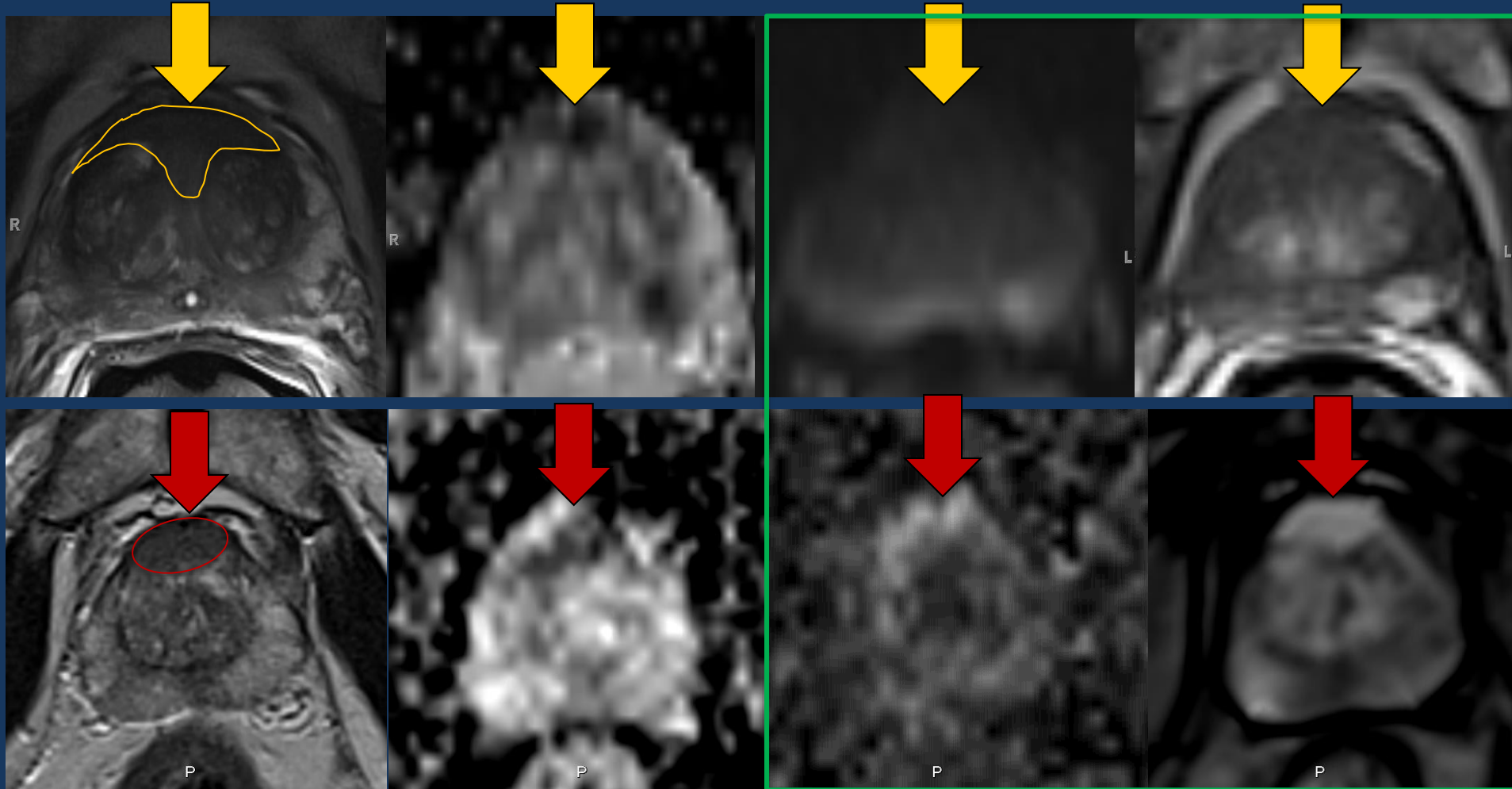
Anterior fibromuscular stroma vs. Cancer

T2WI

ADC

DWI

DCE



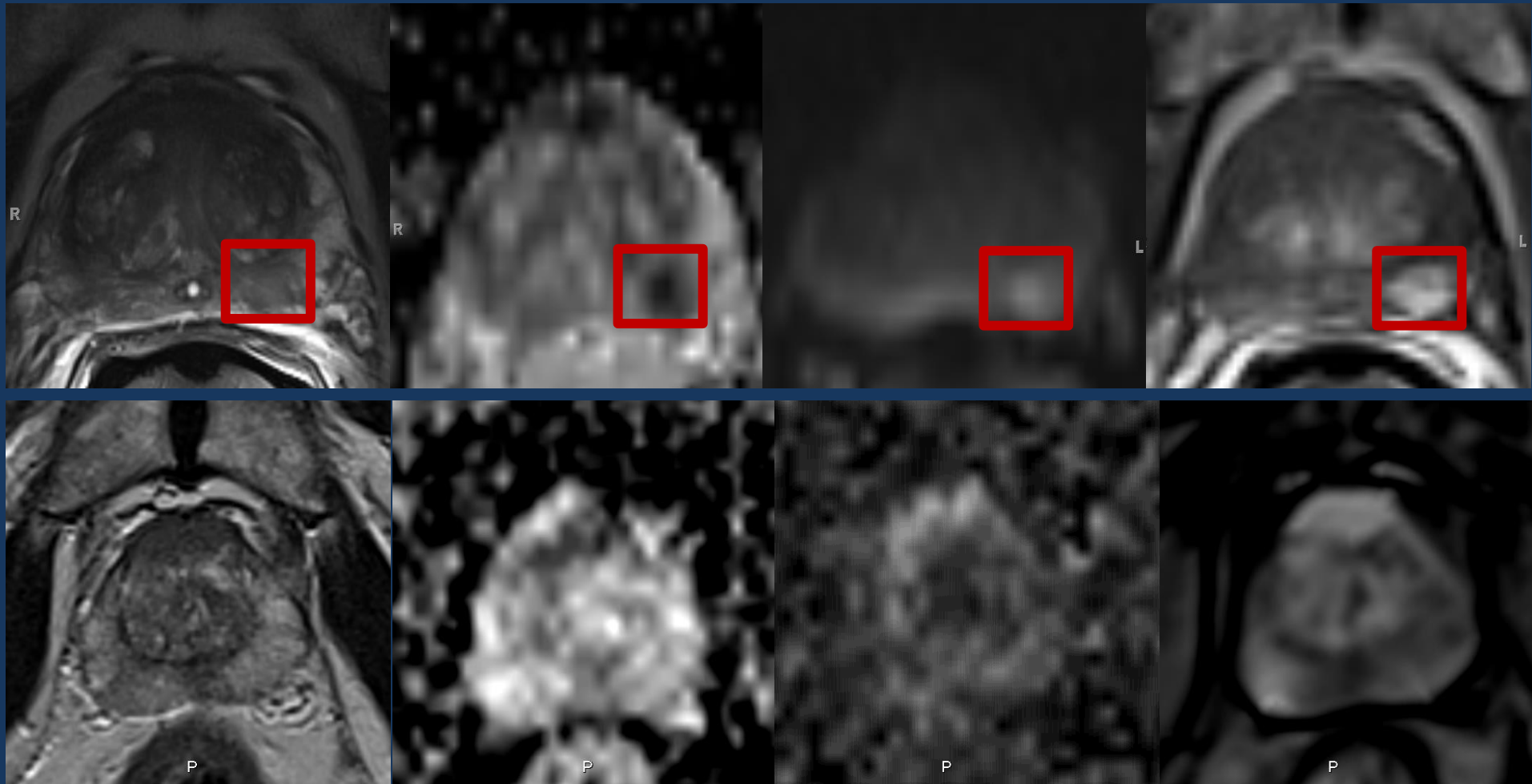
Anterior fibromuscular stroma vs. Cancer

T2WI

ADC

DWI

DCE



PZ and TZ Cancer

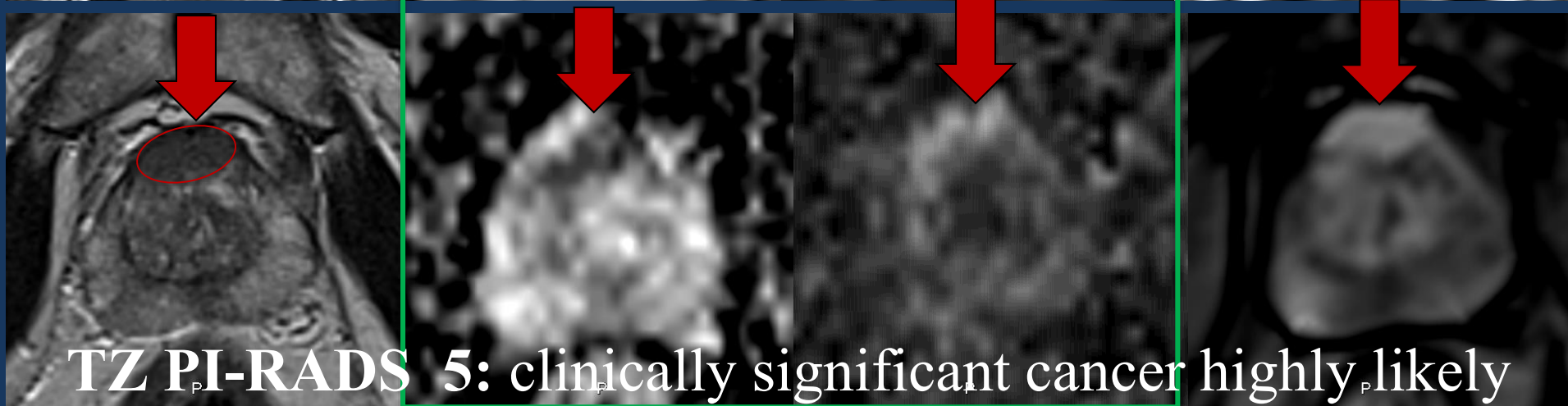
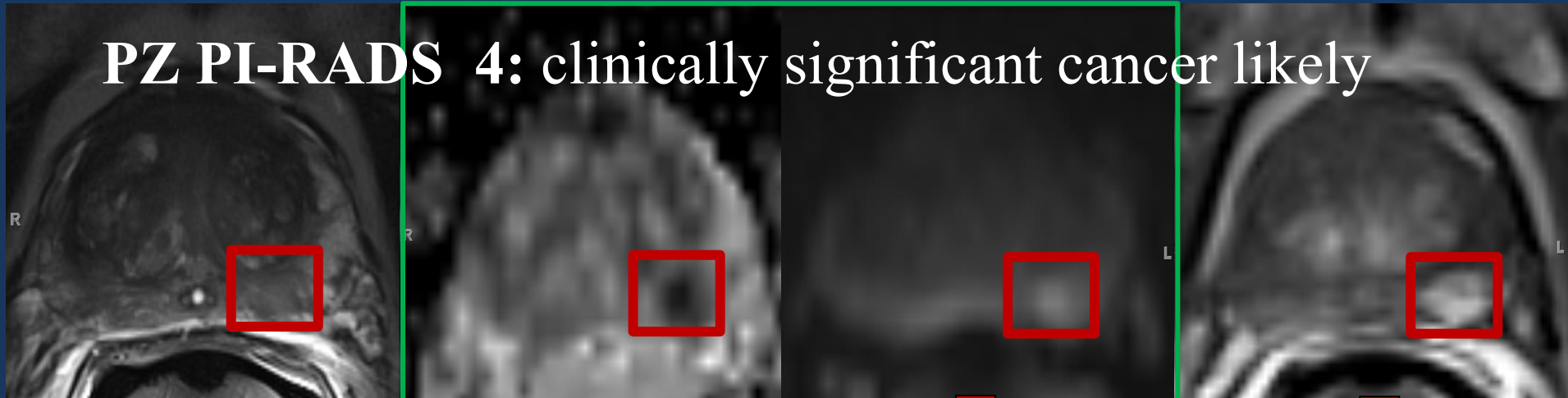
T2WI

ADC

DWI

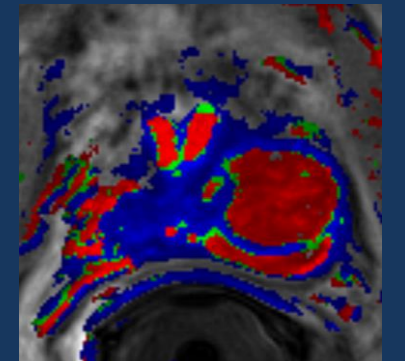
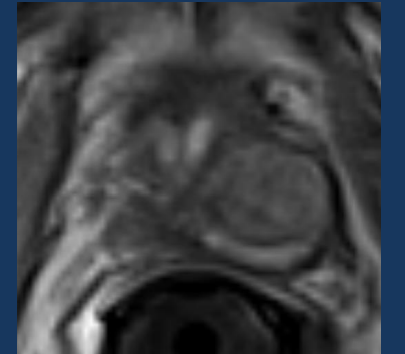
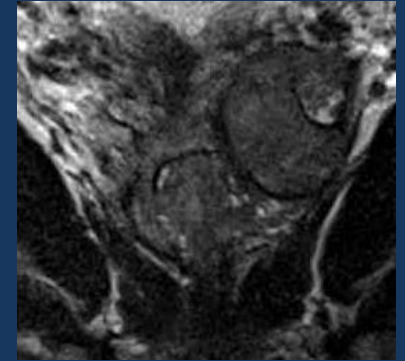
DCE

PZ PI-RADS 4: clinically significant cancer likely



TZ PI-RADS 5: clinically significant cancer highly likely

Overall PI-RADS v2.1 Assessment



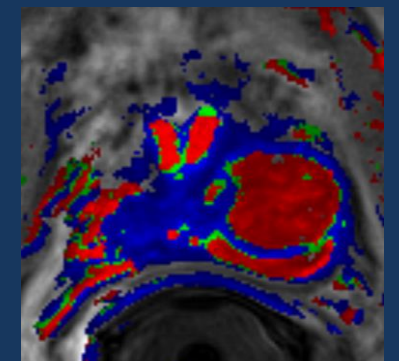
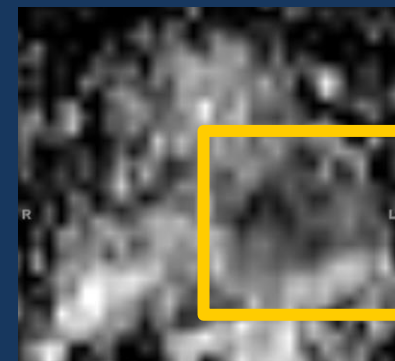
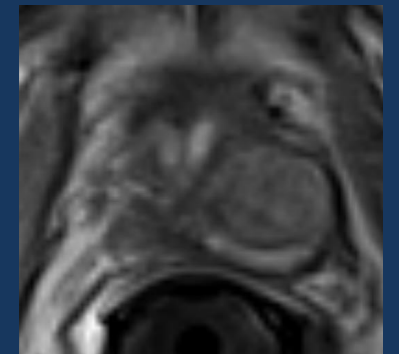
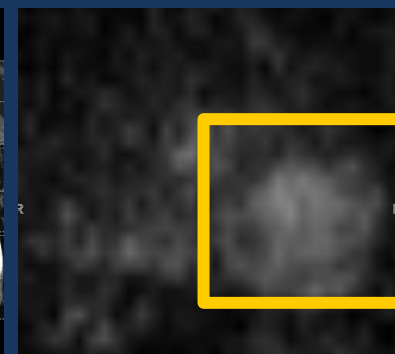
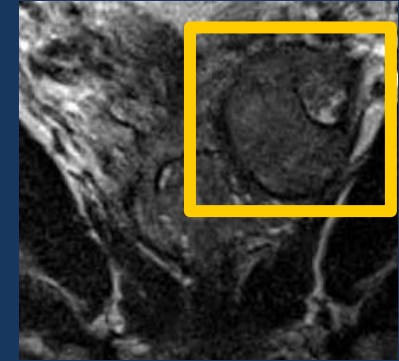
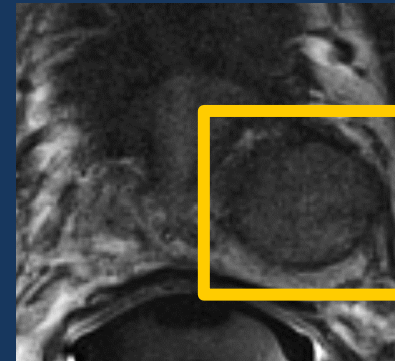
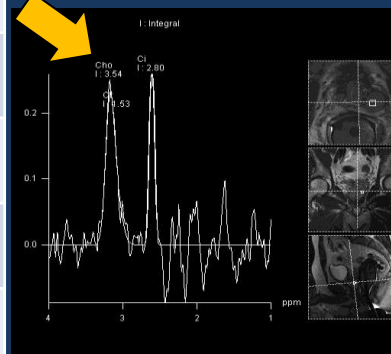
Overall PI-RADS v2.1 Assessment

Transition Zone (TZ)

Nodule 25 mm



T2W	DWI	DCE	Overall
1	Any	Any	1
2	≤3	Any	2
	≥4	Any	3
3	≤4	Any	3
	5	Any	4
4	Any	Any	4
5	Any	Any	5



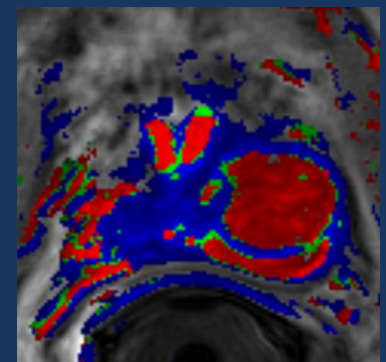
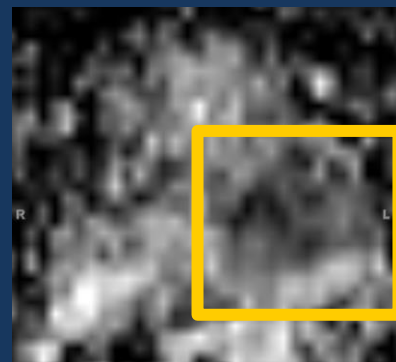
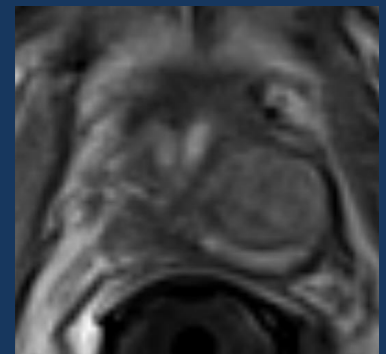
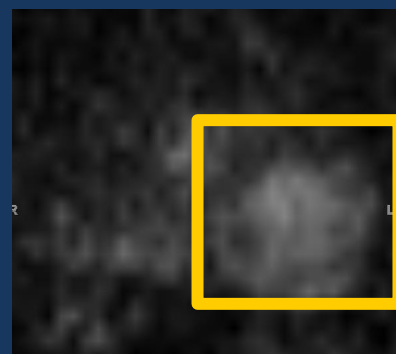
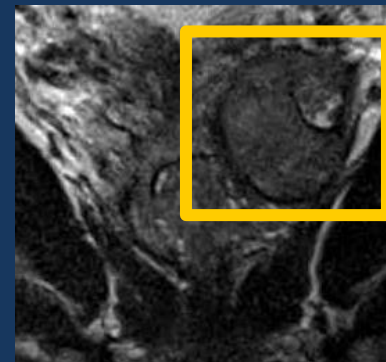
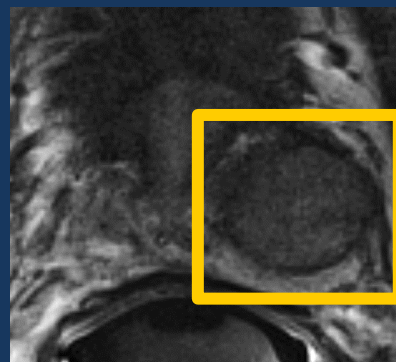
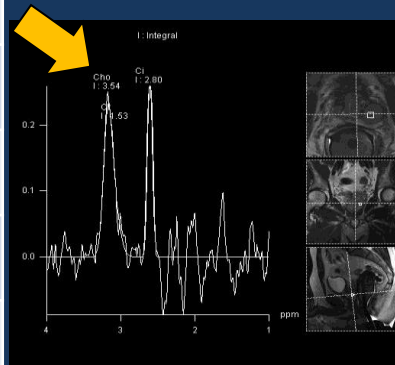
Overall PI-RADS v2.1 Assessment

Transition Zone (TZ)

Nodule 25 mm



T2W	DWI	DCE	Overall
1	Any	Any	1
2	≤3	Any	2
	≥4	Any	3
3	≤4	Any	3
	5	Any	4
4	Any	Any	4
5	Any	Any	5



PI-RADS 5:
 clinically significant
 cancer highly likely

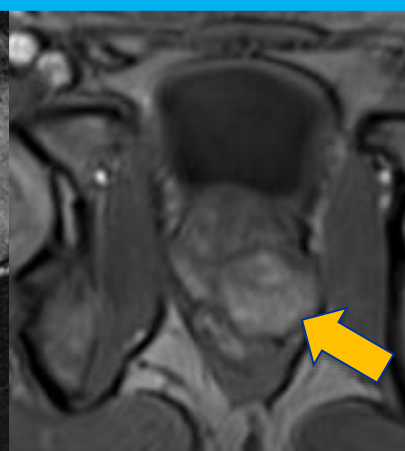
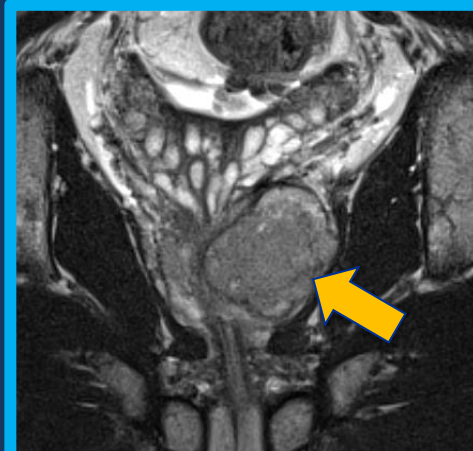
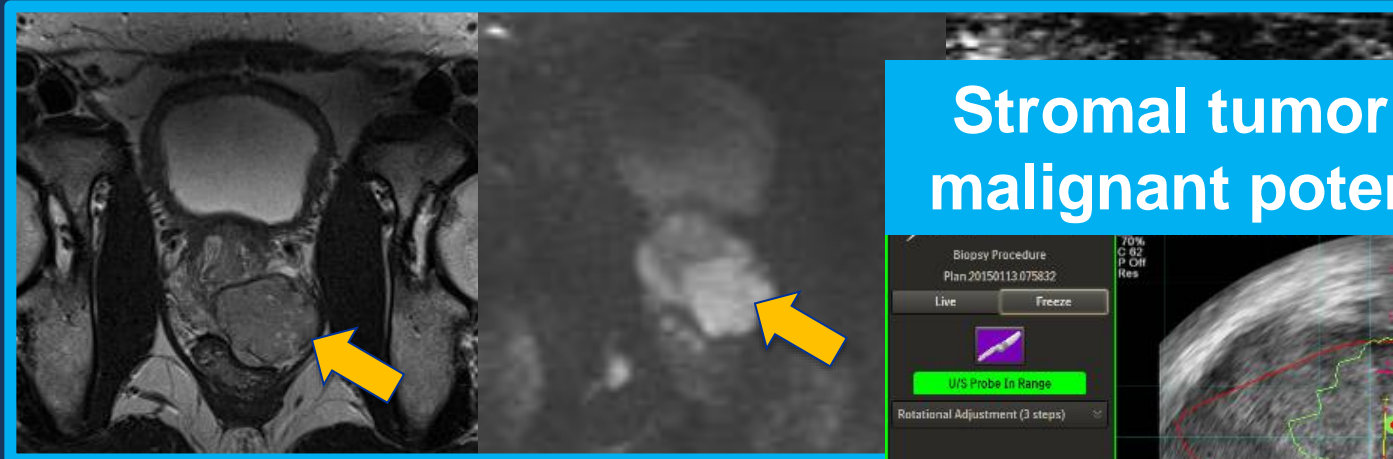
MR-TRUS fusion biopsy



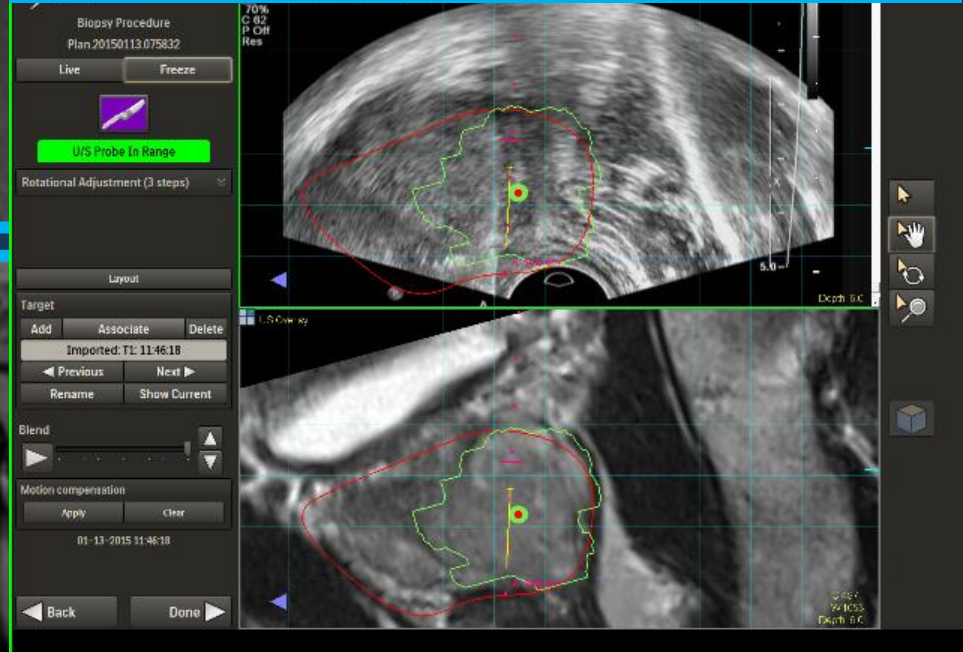
Elevated PSA with prior negative TRUS BX x 2.

Prostatic Duct Adenocarcinoma: Tumors analogous in their behaviors to Adenocarcinoma, **Gleason 4+4=8**. Large duct carcinoma, smooth borders without infiltration, frequently associated with conventional acinar carcinoma.

Encapsulated Eccentric Nodule



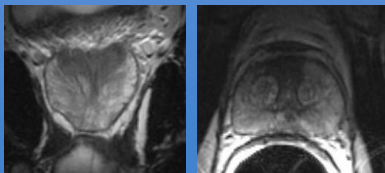
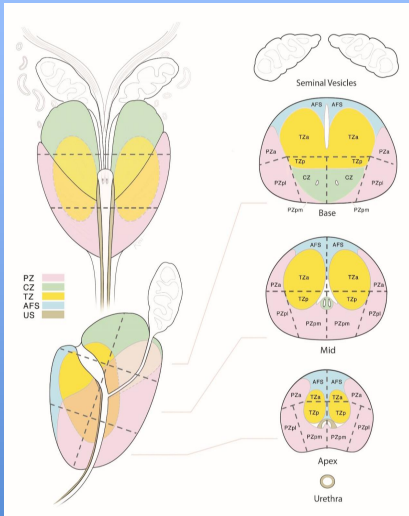
Stromal tumor of uncertain malignant potential - STUMP



Step-by-step Assessment

1

Anatomical Localization



2

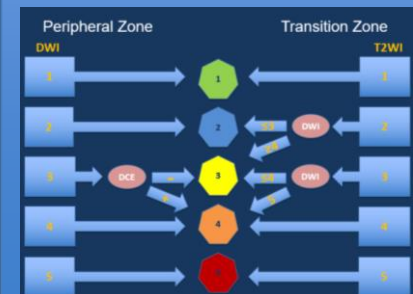
Qualitative Evaluation on T2WI, DWI (1-5 score) and DCE (positive/negative)

Score	Peripheral Zone (PZ)
1	Uniformly hyperintense (normal)
2	Linear, wedge-shaped, or diffuse mild hypointensity, usually indistinct margin
3	Non-circumscribed, rounded, mild hypointensity
4	Circumscribed, homogenous moderate hypointense focus/mass confined to prostate and <1.5 cm in greatest dimension
5	Same as 4 but ≥1.5cm in greatest dimension or definite extraprostatic extension/invasive behavior

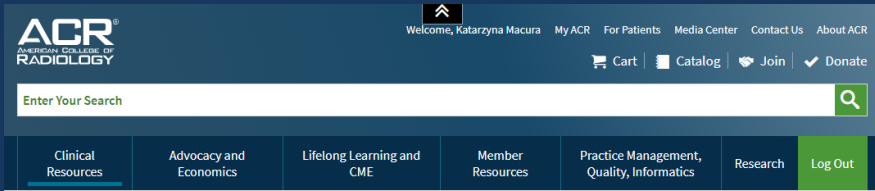
3

Overall PI-RADS Assessment

DWI	T2W	DCE	PIRADS Category
1	Any	Any	1
2	Any	Any	2
3	Any	-	3
		+	4
4	Any	Any	4
5	Any	Any	5



On Line Resources



Home / Clinical Resources / Reporting and Data Systems / PI-RADS (Prostate)

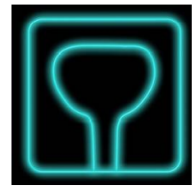
Prostate Imaging Reporting & Data System

To improve early diagnosis and treatment of prostate cancer, ACR, AdMeTech Foundation and ESUR formed a joint effort to develop standards for the Prostate Imaging Reporting and Data System (PI-RADS).

The goal is to expedite the transfer of high-quality MRI from laboratories to patients to help reduce unnecessary biopsies and treatment.

PI-RADS v2 Module

- PI-RADS 2015 v2 (full text document)
- PI-RADS Lexicon
- PI-RADS Atlas
- PI-RADS Report Template – Available as a .TXT or .PDF file



License Information

Prostate Imaging Reporting and Data System (PI-RADS) by American College of Radiology is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs International License.

Contact us: rads@acr.org



To View ACR PI-RADS v2 Atlas:

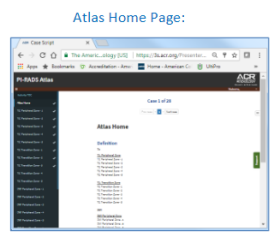
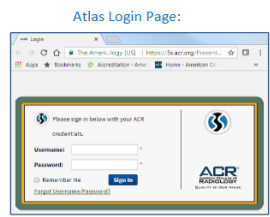
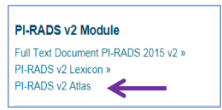
- Go to ACR PI-RADS page: <https://www.acr.org/Quality-Safety/Resources/PIRADS>
- Click **PI-RADS v2 Atlas** located under PI-RADS v2 Module. (Or paste the following link in browser: <https://3s.acr.org/Presenters/CaseScript/CaseView?CidId=y4MOWzet54g3d>)
- Login or Create a free ACR account.

To Login: Use your ACR credentials. Click forgot password for credential assistance.

If you do not have an ACR account, create a free account by going to [customer registration](#).

NOTE: You do not have to be an ACR member to create a free account.

To Create an Account (Or paste the following link in browser: <https://shop.acr.org/default.aspx?tabid=108>)



Complete Customer Registration:

- Enter **e-mail address** and generated captcha text to ensure you do not already have an ACR account.
- Tell us about yourself.** Complete demographic information and create a password.
- Click **Next** to complete your registration.

