

# Quality Control Process for Prostate MRI and MRI Guided Biopsy Procedures

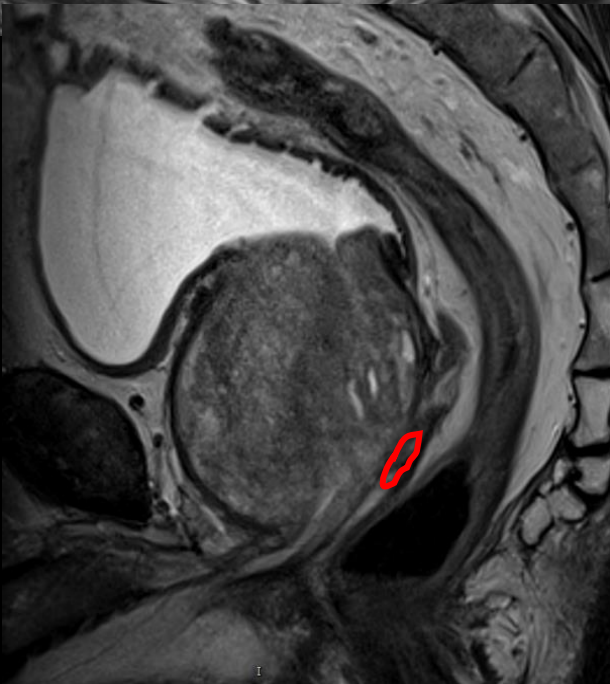
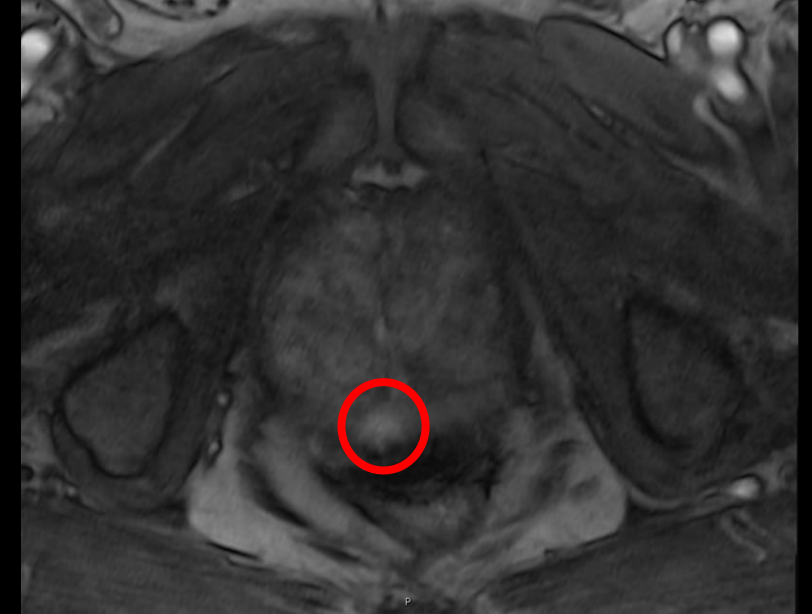
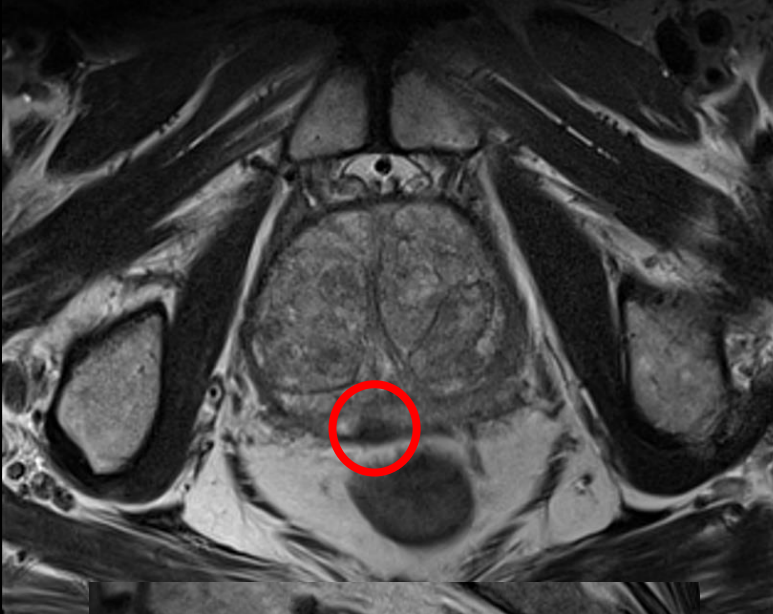
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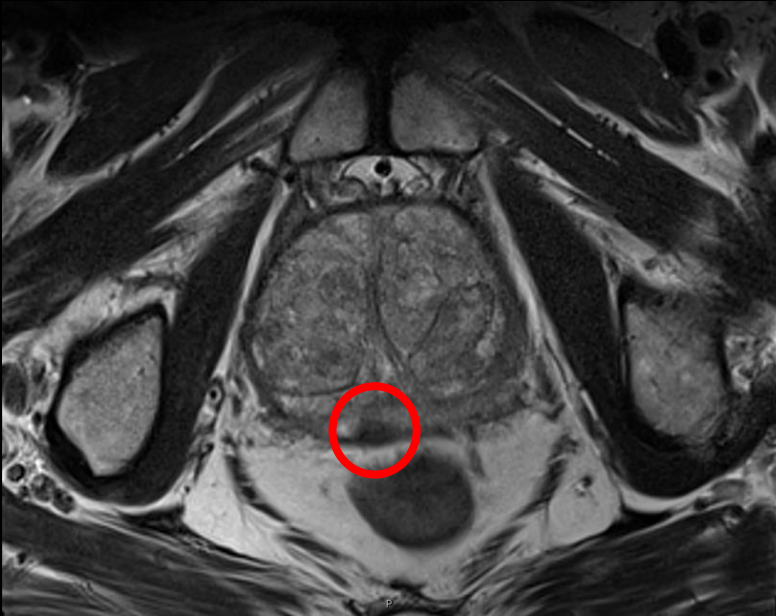
76-year-old man, PSA=6.12ng/dl, no prior biopsy



Midline to right mid subcapsular peripheral zone lesion  
T2W category= 4  
DWI category= X  
DCE category= positive  
Overall PI-RADS category= 4

**MRI/TRUS Fusion Guided  
Biopsy=tumor negative**

76-year-old man, PSA=6.12ng/dl, no prior biopsy

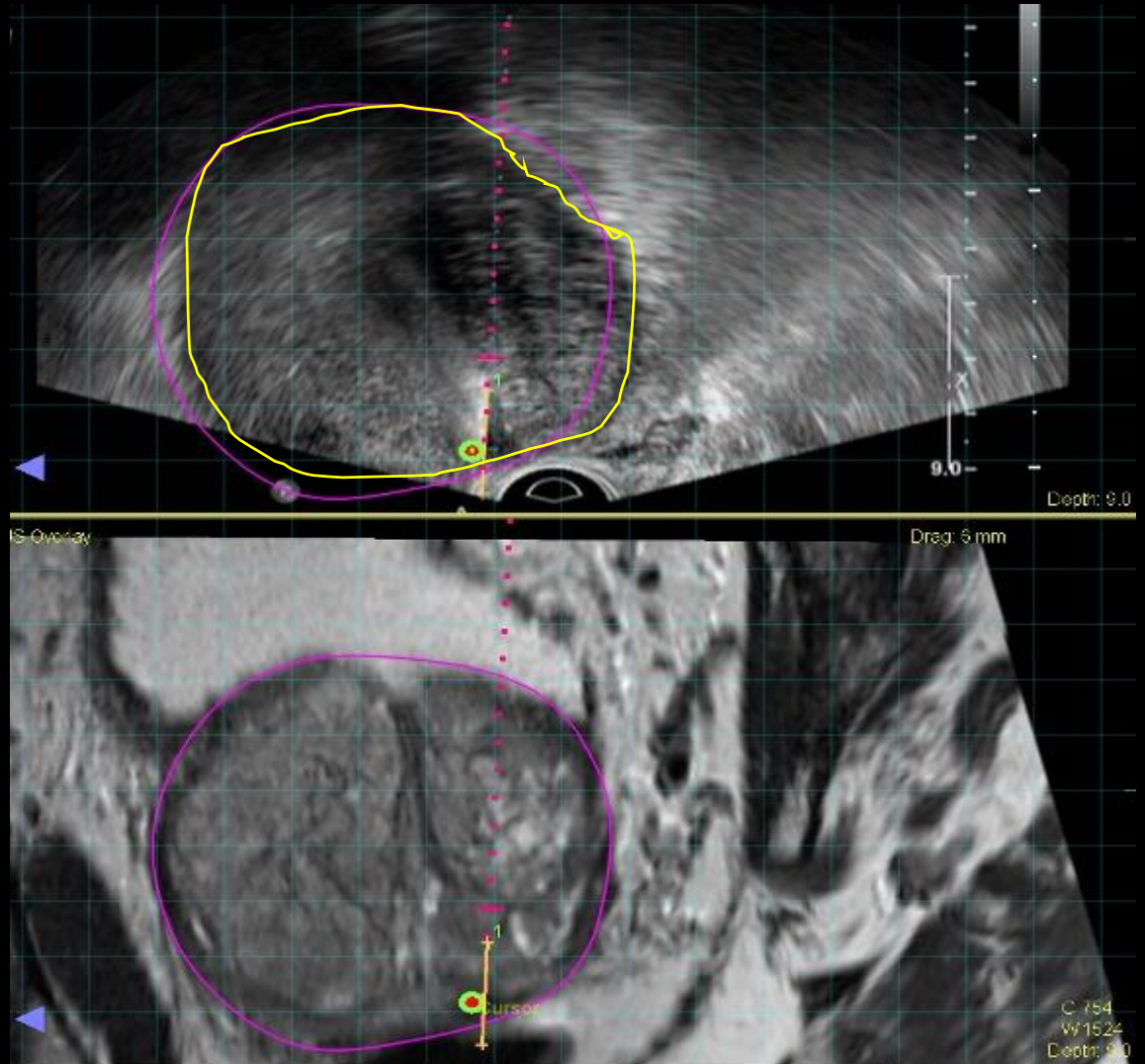


Midline to right mid subcapsular  
peripheral zone lesion  
Overall PI-RADS category= 4

**Transrectal MRI/TRUS  
Fusion Guided  
Biopsy=tumor negative**

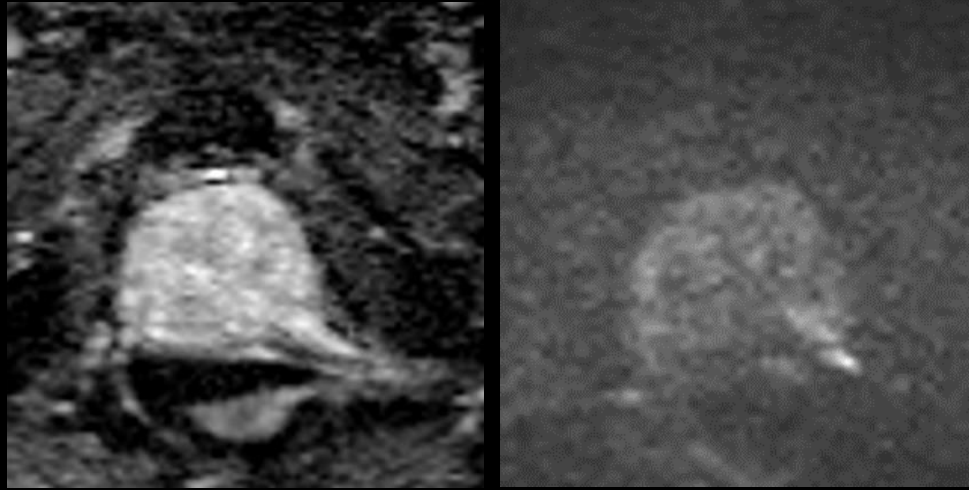


Screen capture of the targeting process

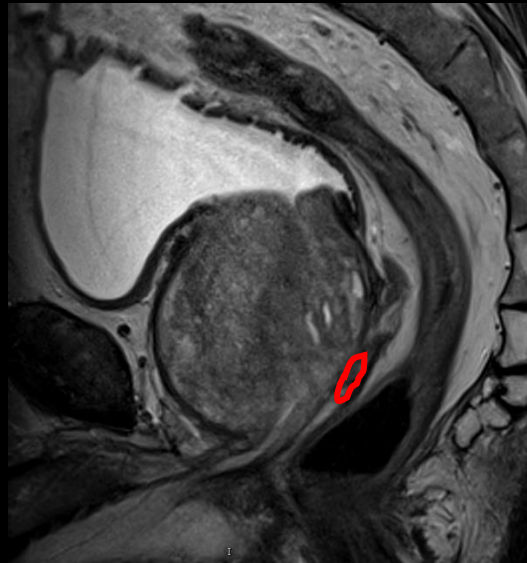


# What went wrong?

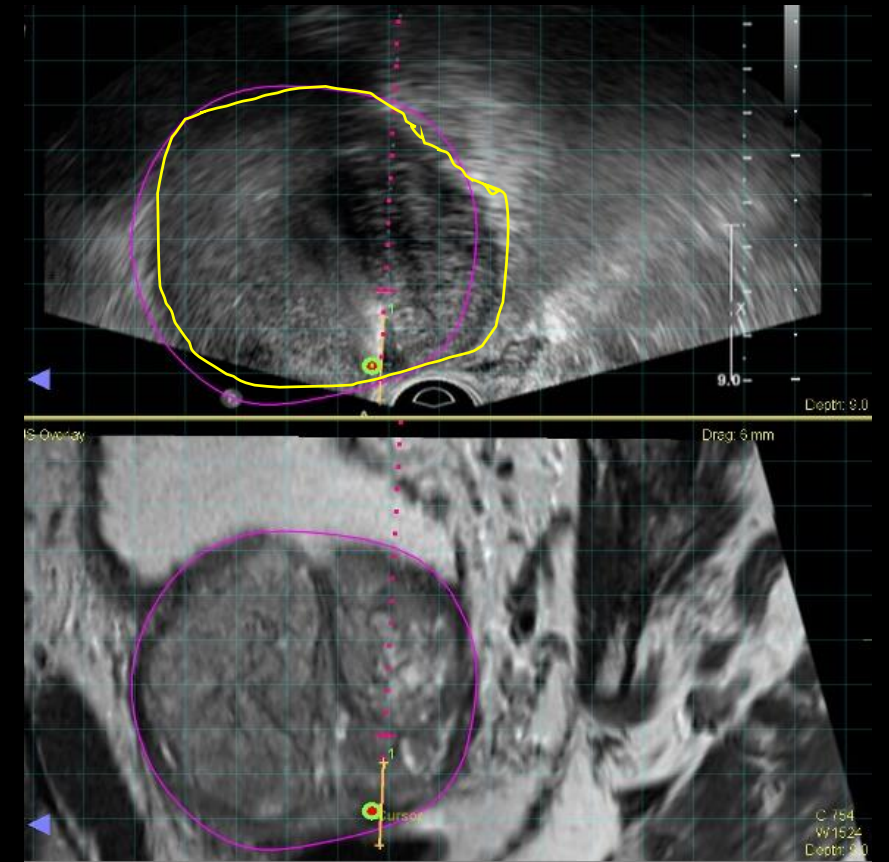
Suboptimal MRI quality impacting accurate lesion localization and characterization



Incorrect biopsy route  
Transrectal route vs.  
Transperineal route  
(for subcapsular thin lesions)

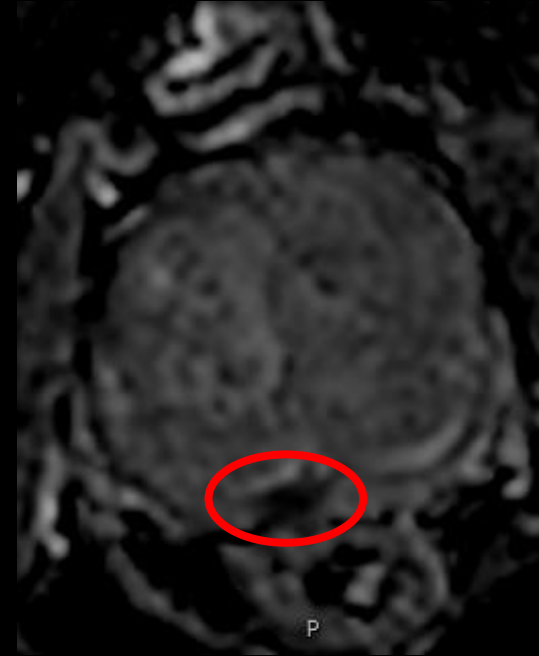
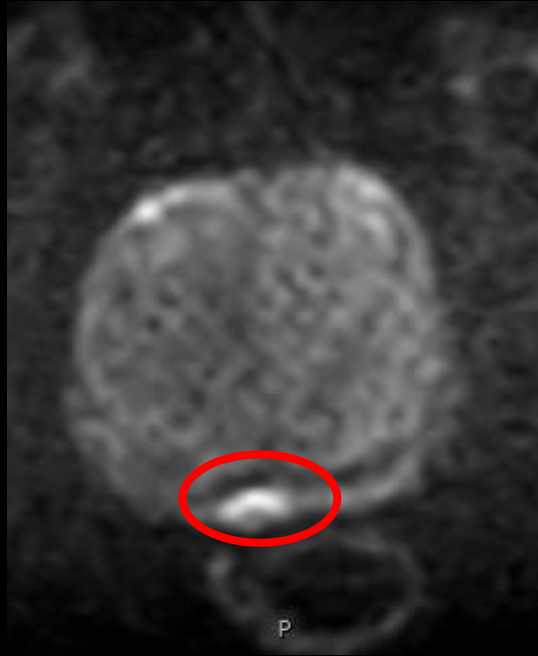
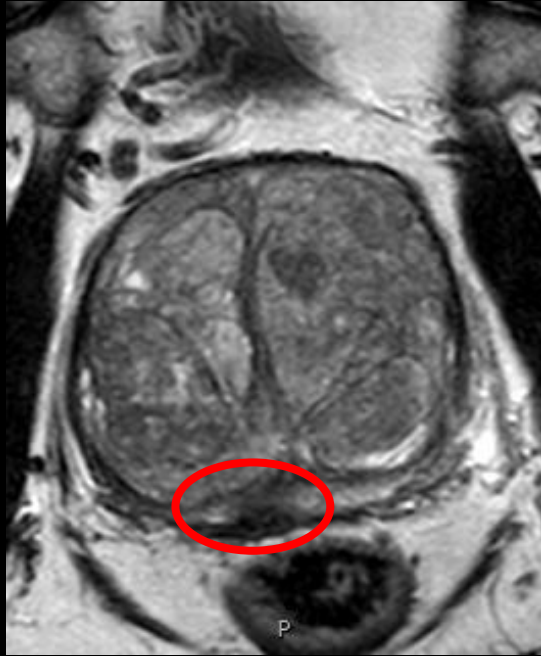


TRUS/MRI registration error



76-year-old man, PSA=6.12ng/dl

Patient was called back and repeat MRI was done



Midline to right mid subcapsular peripheral zone lesion

Capsular bulge (NCI EPE Grade 1/3)

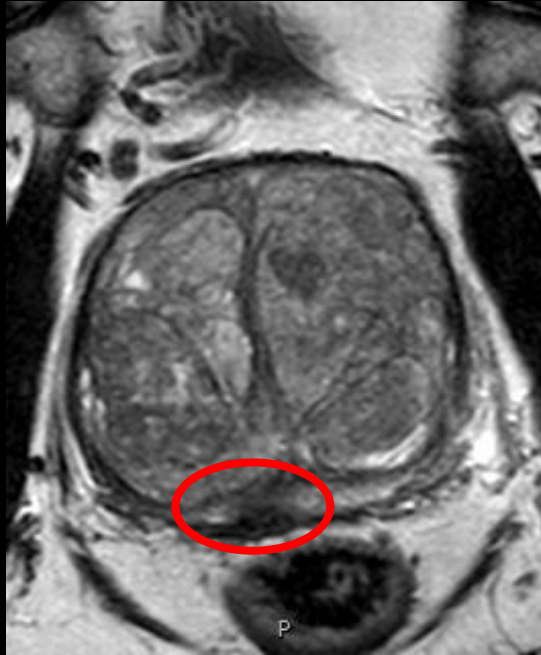
T2W category= 5

DWI category= 5

DCE category= positive

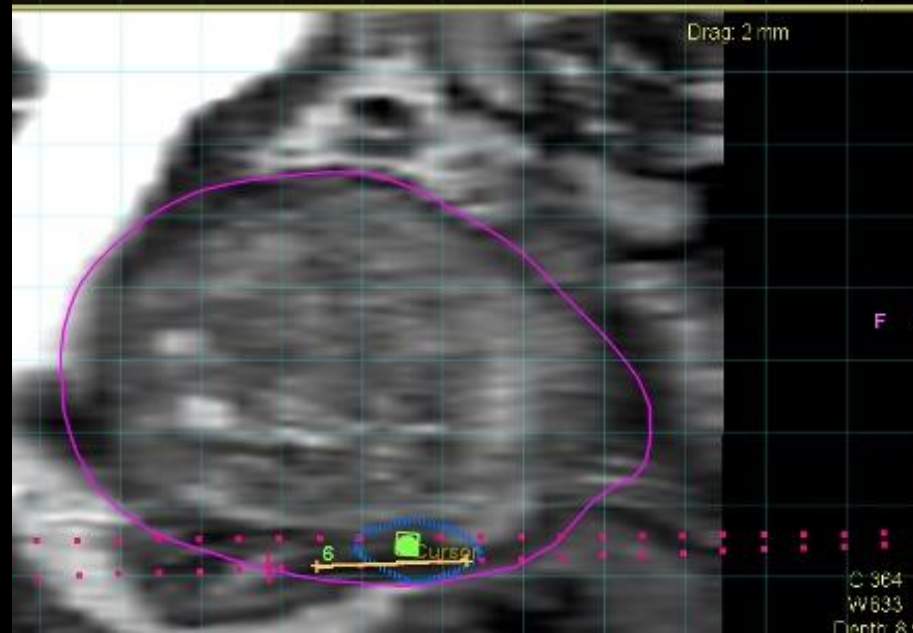
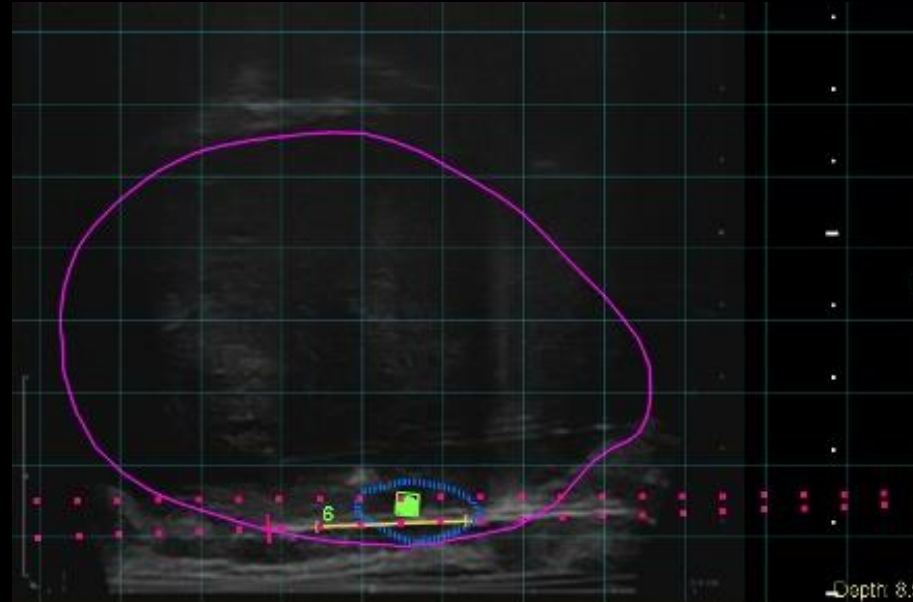
Overall PI-RADS category= 5

76-year-old man, PSA=6.12ng/dl

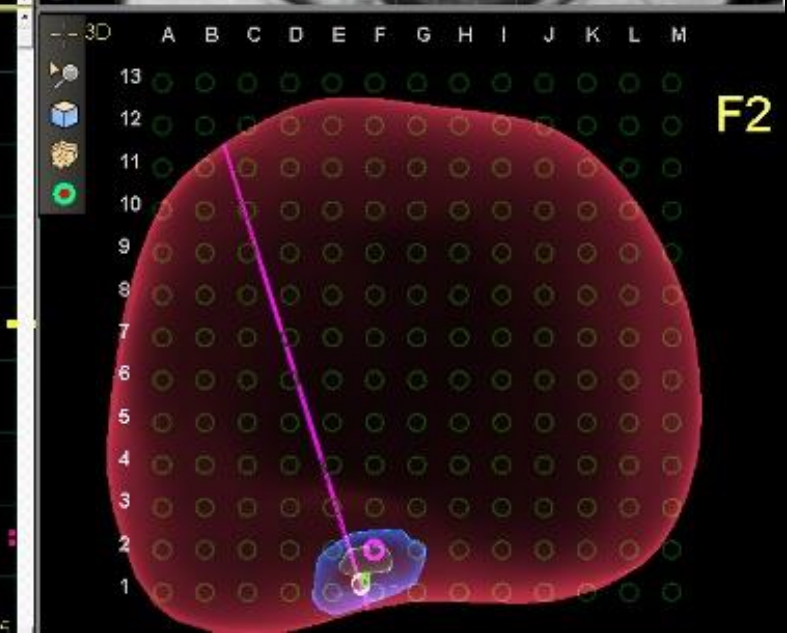
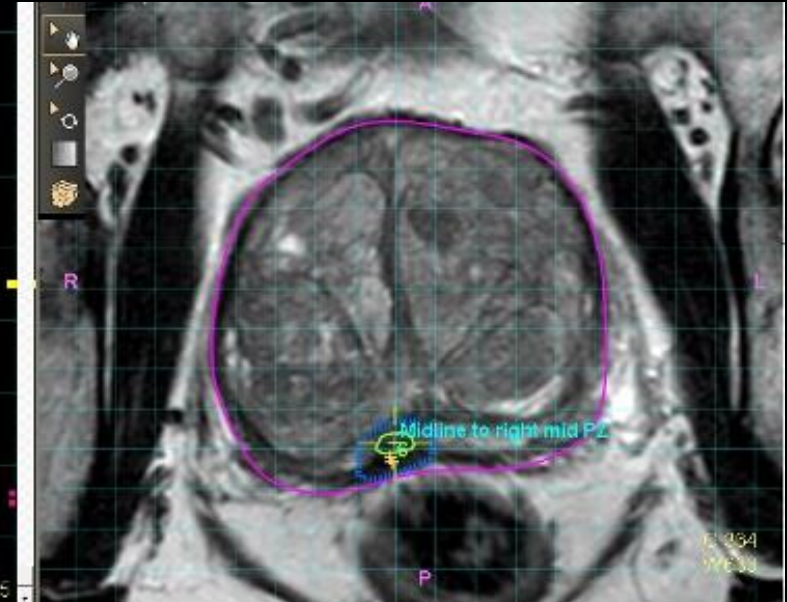


Midline to right mid subcapsular  
peripheral zone lesion  
Overall PI-RADS category= 5

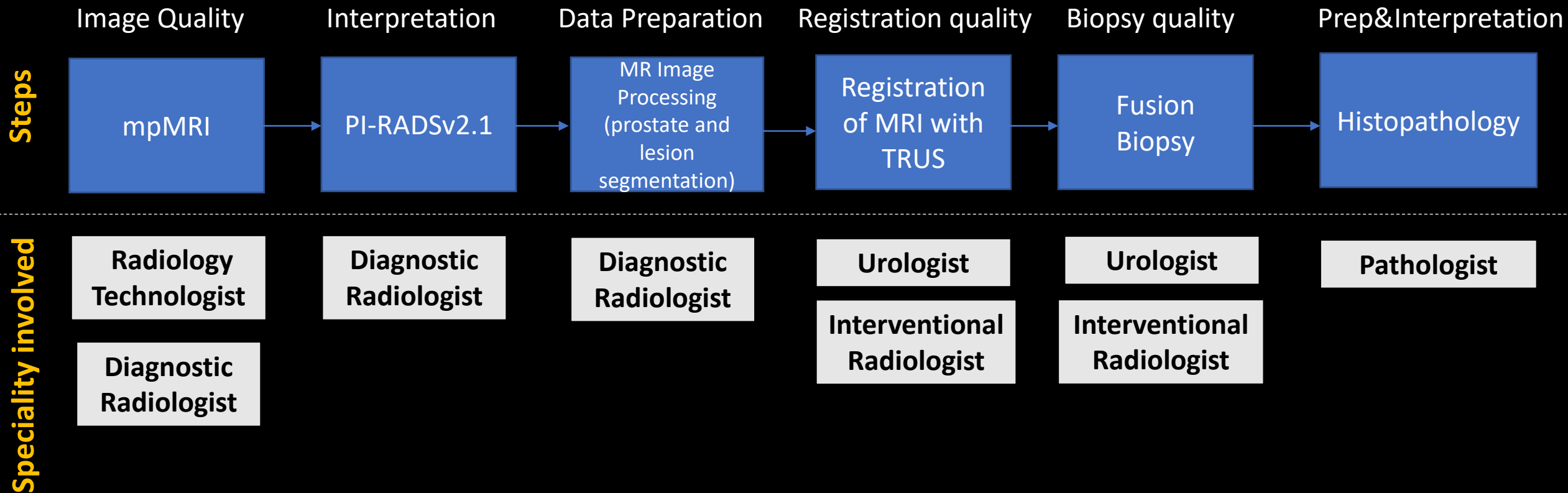
**Transperineal MRI/TRUS  
Fusion Guided  
Biopsy=Gleason 5+4  
Prostate adenocarcinoma**



Repeat biopsy



# Critical Quality Control Steps for MRI Guided Localized Prostate Cancer Management



“There is a long pathway for a successful result using MRI guidance for localized prostate cancer diagnosis and a solid #Teamwork is needed for success”

Baris Turkbey M.D.

# Basic Tips for Quality Control

- Weekly multi-disciplinary meetings
- Regular cancer detection rate evaluations for each PI-RADS category
- PI-RADS category 4 and 5 lesions
  - Please check entire QC chain carefully if targeted biopsy results are tumor negative
- Please try to call back patients soon if procedural error(s) is identified



# References

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# Thank you...



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