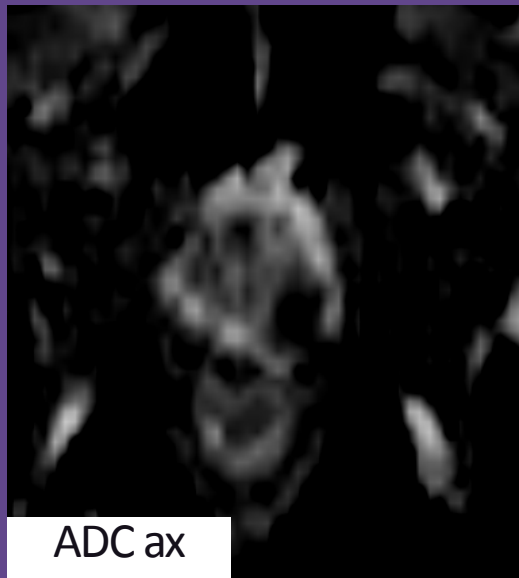
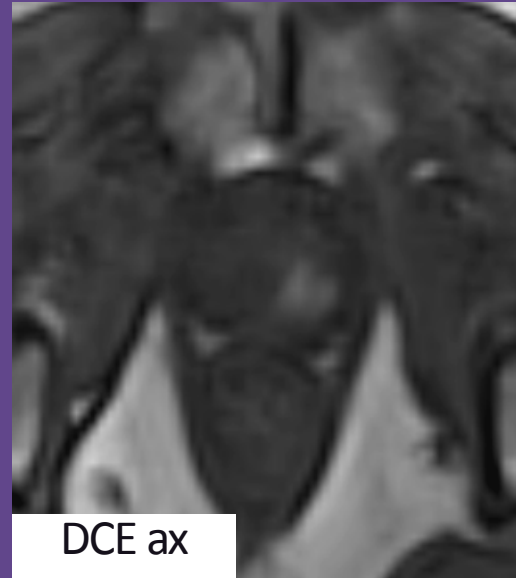
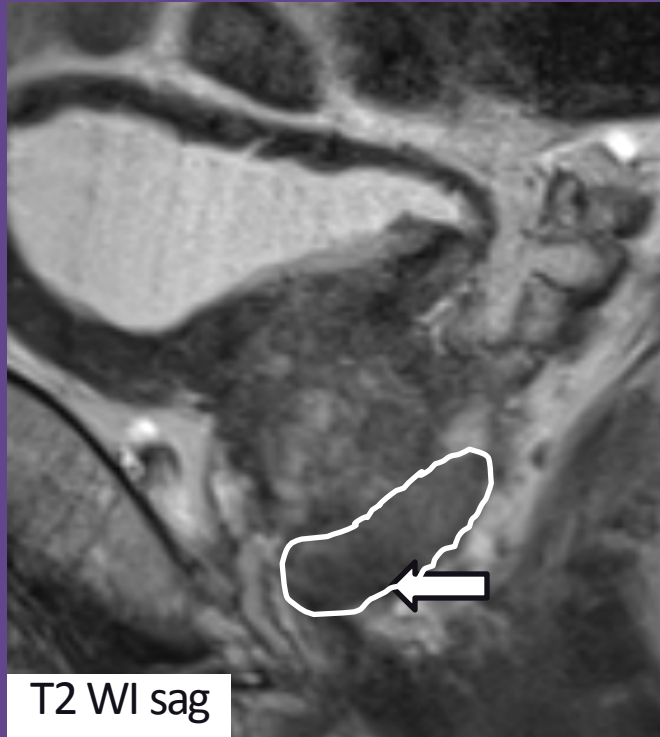


73 yo, elevated PSA, no prior prostate biopsy

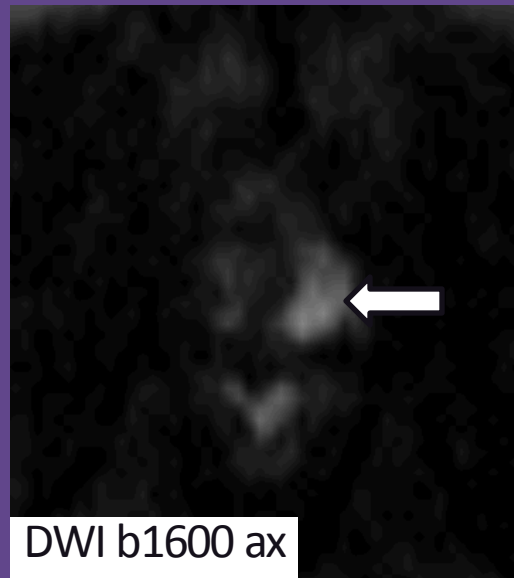
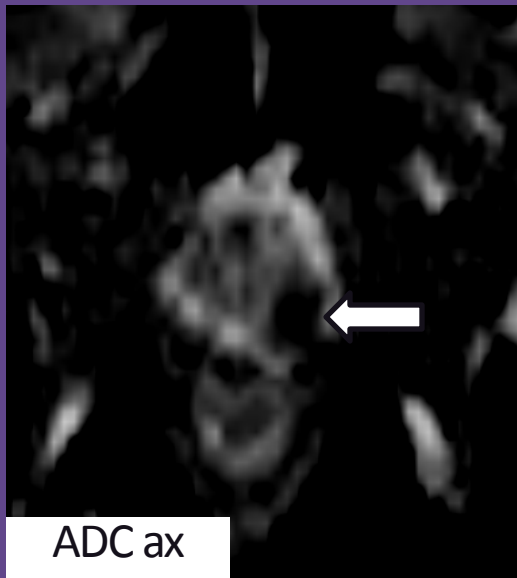
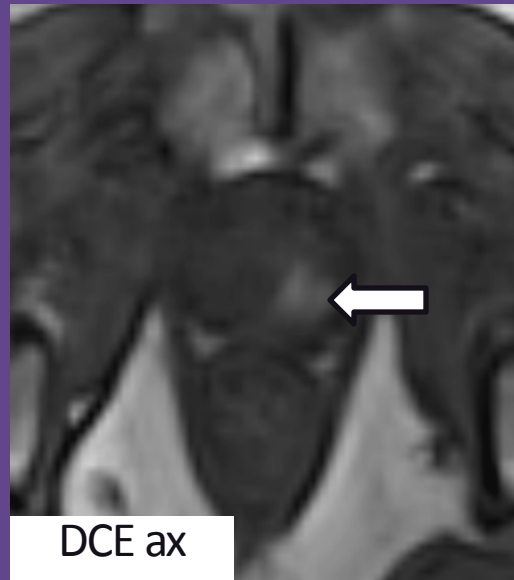
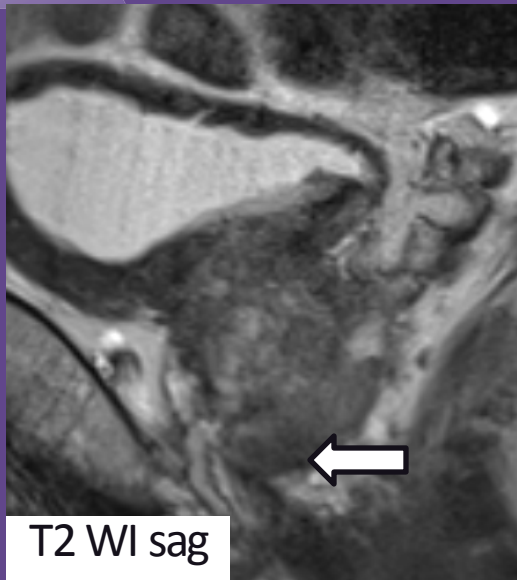


73 yo, elevated PSA, no prior prostate biopsy

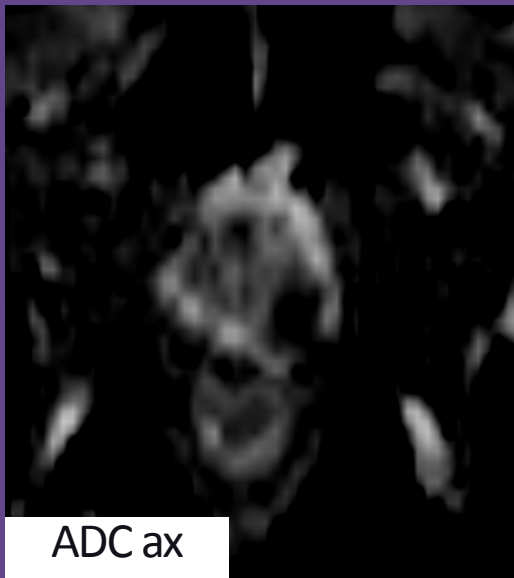
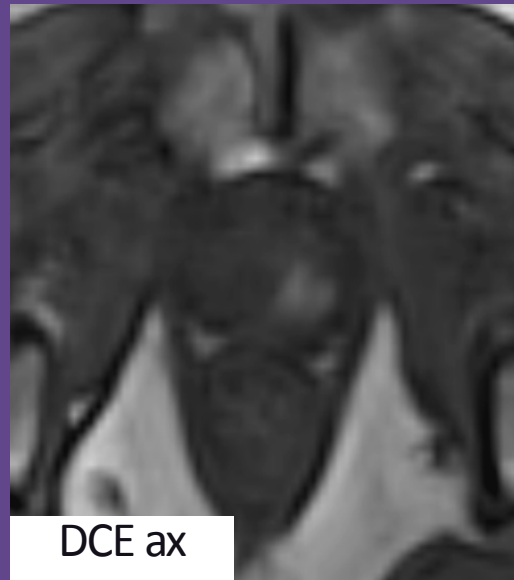
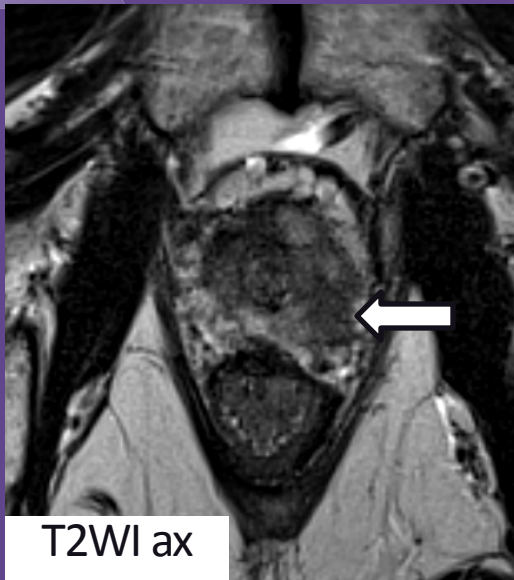


Sagittal T2WI shows diffuse decreased signal (outlined) involving the left PZ

In the left apex, there is a greater degree of hypointensity (arrow)



Left apical PZ showed focal early enhancement, decreased ADC, and increased signal on high b-value DWI to *greater degrees* than the abnormal left mid PZ



PI-RAD V2 assessment:

T2WI: Score of 5 (>1.5 cm homogenous, hypointense mass with findings of extra prostatic extension)

DWI: Score of 5 (>1.5 cm, focal markedly hypointense on ADC and markedly hyperintense on high b-value DWI)

DCE: (+) (focal, early enhancement)

Overall category: 5

DWI - dominant sequence in PZ

MR/ultrasound fusion-guided biopsy:

While large contiguous abnormality involving the left PZ apical and mid regions was category 5, two smaller targets rather than one larger target were placed (one in apex and one in the mid region) to assure the apex was sampled.

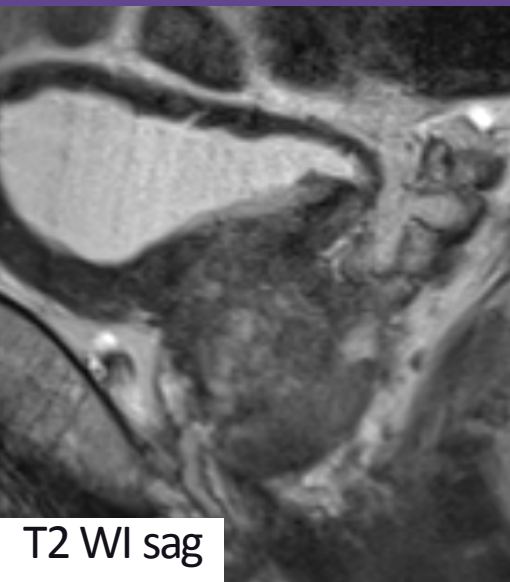
Left apex target: Gleason 4 + 5 in 4/4 cores

Left mid target: Gleason 3 + 4 in 4/4 cores

Concurrently performed systematic cores:

Gleason 3 + 3 elsewhere in left PZ

negative in the right PZ



Prostatectomy: pathologic findings corresponded to biopsy results and showed extra prostatic extension at the left apex. Surgical margins were negative.

Teaching points:

- There is an inverse relationship between ADC and Gleason grade in PZ cancer, but there is overlap in ADC values of high and low grade tumors (Hambrock T et al. Radiology 2011;259:453-461)
- Different grades of tumor may exist in a single area of abnormality on MR
- In marking targets for MR/US fusion biopsy, try to assure that the most concerning area(s) is sampled

