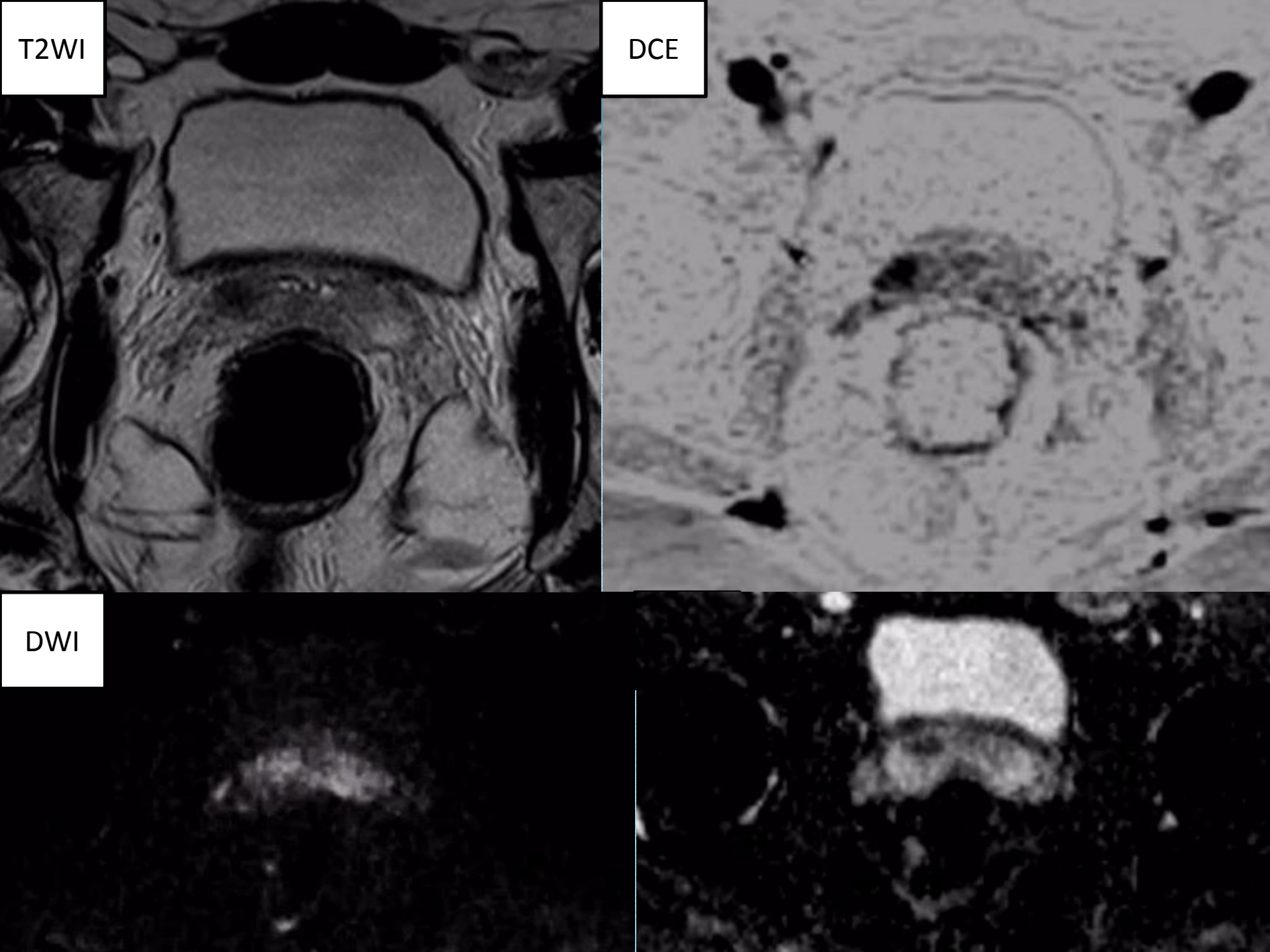
Case 10/03/2016

- 64 y.o. male
- PSA 4.5 ng/mL
- DRE: unremarkable.
- Biopsy naïve patient.

Case courtesy: Leonardo Kayat Bittencourt, MD, PhD.
CDPI Clinics and Fluminense Federal University, Rio de Janeiro, Brazil


T2WI
DCE
DWI

Case 10/03/2016

- **Findings:**
- T2WI
  - A non-circumscribed, ill-defined, asymmetric, homogeneous, hypointense lesion, that measures < 1.5 cm in greatest dimension, is seen in the region correspondent to the right central zone (CZ).
- DWI and ADC map
  - The lesion shows marked low SI on ADC and high SI on DWI.
- DCE
  - The lesion demonstrates marked focal enhancement on DCE, as illustrated by the dark area in the parametric map.

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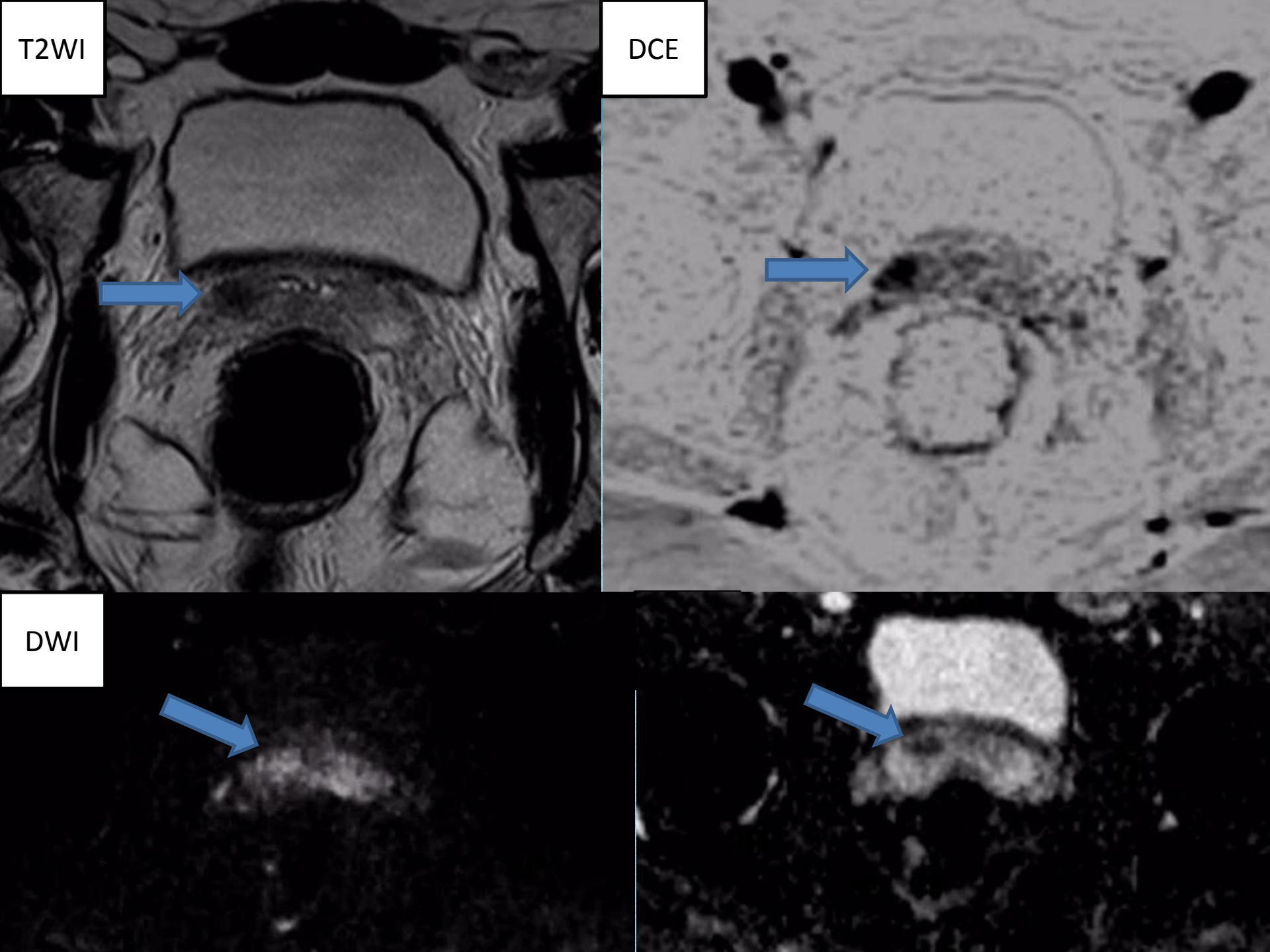
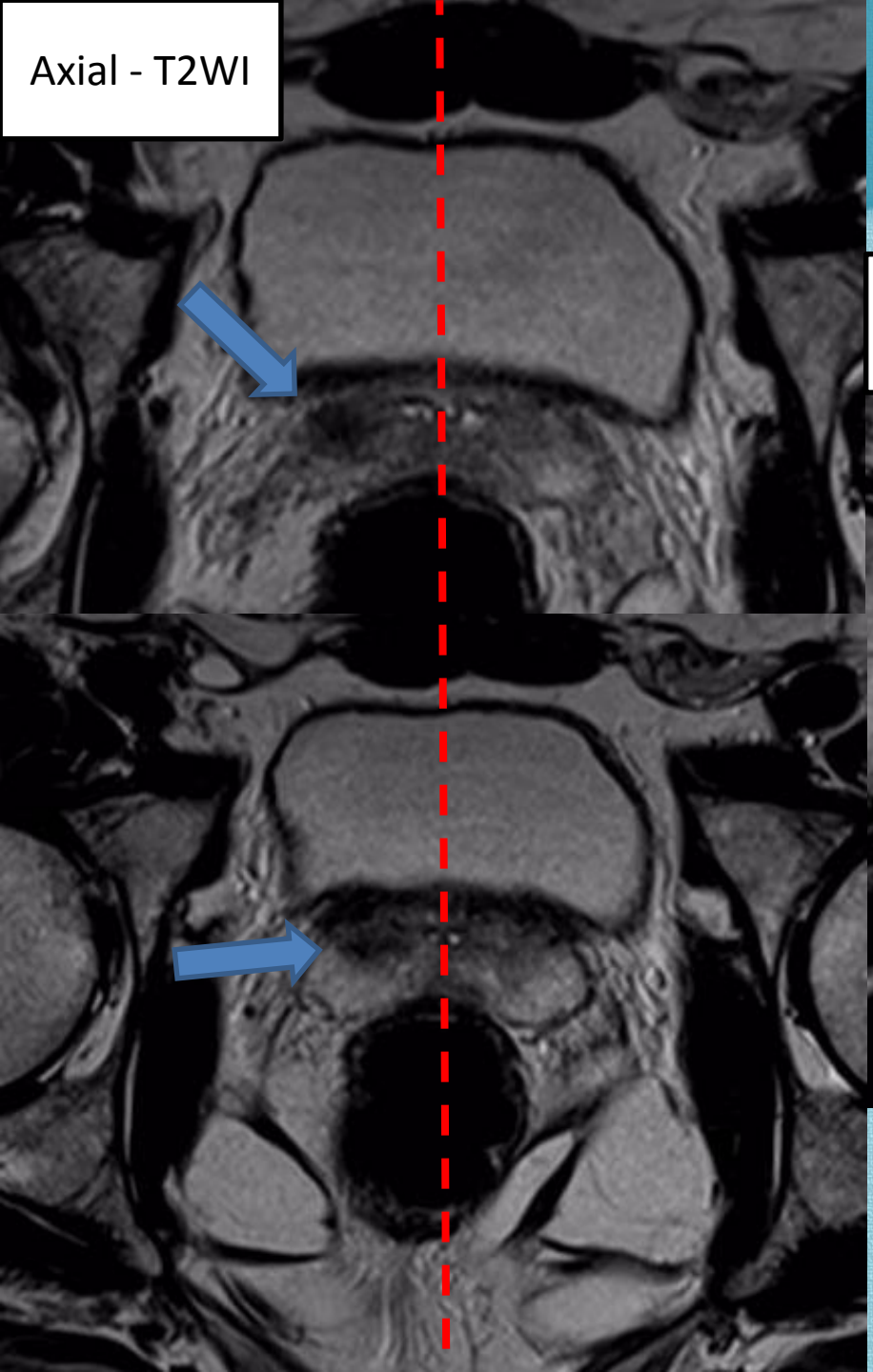
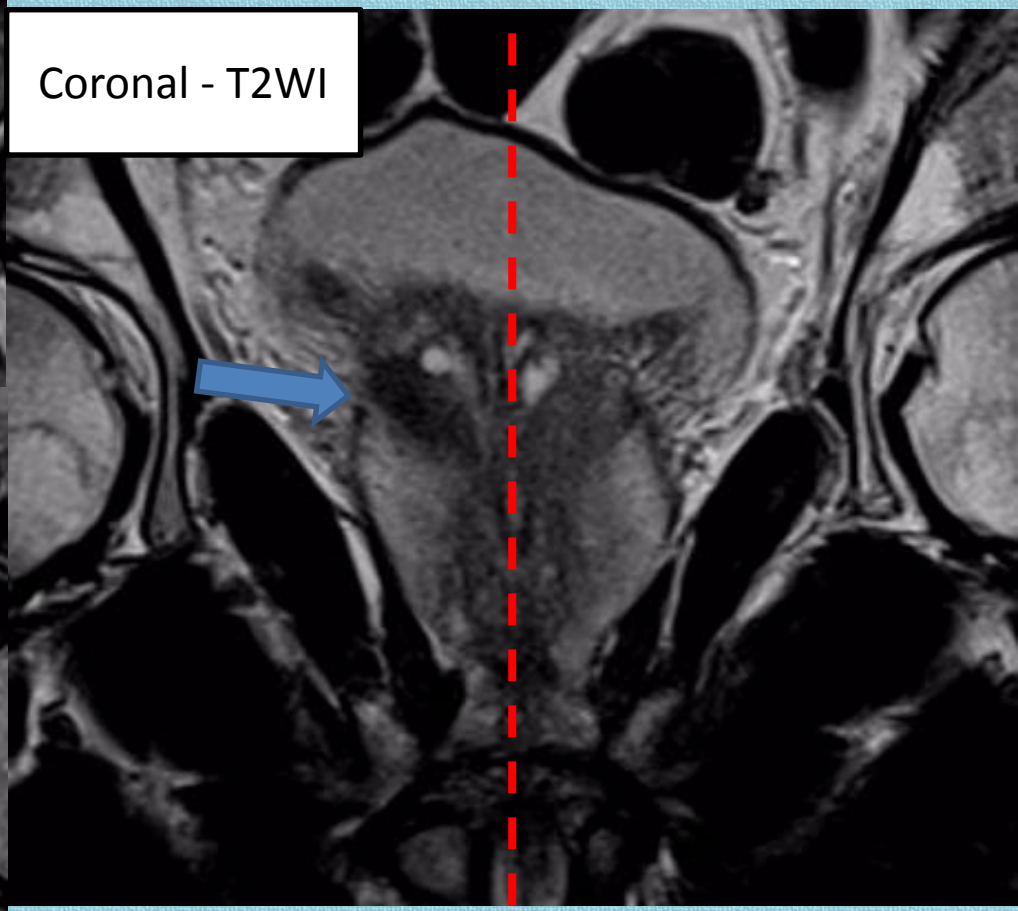

T2WI
DCE
DWI

Asymmetry in CZ lesions:





Case courtesy: Leonardo Kayat Bittencourt, MD, PhD. CDPI Clinics and Fluminense Federal University, Rio de Janeiro, Brazil

PI-RADS Scoring

- T2WI = 4
- DWI = 4
- DCE = +
- Overall = 4

The dominant parameter for CZ lesions is not clear in PI-RADS v2.0.

- Since the dominant factors for PIRADS assessment are T2W for the TZ and DWI for the PZ, identification of the zonal location of a lesion is vital. Areas where this may be especially problematic include the interface of the CZ and PZ at the base of thegland and the interface of the anterior horn of the PZ with TZ and anterior fibromuscular stroma.

PI-RADS v2.0, pg. 20

However, since both T2WI and DWI were scored as 4, the overall score could also be assumed as PI-RADS = 4.

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- **Discussion**:
- The central zone (CZ) surrounds the ejaculatory ducts, and contains about 20% of the glandular tissue. It usually presents as a bilateral and symmetrical T2-hypointense structure in the shape of an inverted cone, that partially surrounds the ejaculatory ducts in the prostatic base.
- Due to the high stromal content, the **normal CZ** is generally **hypointense** on T2WI, and may even show areas of **(mildly) restricted diffusion**.
- Cancers originating in the CZ are uncommon, and when such imaging changes in this typical location are **bilateral and symmetrical**, they should not prompt suspicion.

- However, in this particular case, the **marked asymmetry of the CZ** findings was the **key to diagnosis**.
- The patient was submitted to MR-TRUS fusion-guided biopsy, which showed a **Gleason 8(4+4)** PCa in the right CZ.

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