

### Quiz 3 (2019-20) Answers

1-3. Radiation related changes in prostate cancer and benign prostate

4-5. Spermatocytic tumor

1. (4)
2. (3)
3. (1)
4. (2)
5. (2)
6. (B)
7. (C)
8. (D)
9. (A)

#### PROSTATE CANCER WITH RADIATION RELATED CHANGES

	<b>BENIGN</b>	<b>CANCER</b>
<b>Architecture</b>	Lobulated architecture maintained	Atrophic changes
	Individual glands with marked distortion of glandular contours	Cancer glands disintegrating into single or small clusters of cells
	Glands lined by multilayered cells	
	Basal and squamous metaplasia common	
<b>Cytological and nuclear features</b>	Atrophic cytoplasm	Abundant vacuolated, clear or foamy cytoplasm
	Scattered markedly atypical nuclei with degenerative changes	Small pyknotic nuclei
<b>Stroma</b>	Fibrosis	
	Vascular changes (intimal thickening and medial fibrosis) uncommon	

The distinction between irradiated non-neoplastic prostate glands and carcinoma is best made on the low magnification architectural patterns of the glands. On higher magnification, whereas glands of PCa are lined by single cell layer, there is piling up of the nuclei within irradiated normal prostate as well as an occasional recognizable basal cell layer.

Carcinomas with radiation effects should not be assigned a Gleason grade, however it can be assigned for cancers without significant radiation effects

## SIGNIFICANCE OF PASTRADIATION PROSTATE BIOPSY

### *Indications:*

- PSA rise post-treatment
- Timing: 24-30 months after treatment (when PSA level reach nadir and are stable in a successfully treated patient)

### *Diagnostic verbiage*

- Negative for carcinoma
- Residual carcinoma with radiation effects: Gleason grade not assigned
- Carcinoma with no treatment effects: Gleason grade assigned

### *Impact of post-radiation biopsy on clinical significance*

- Two-year post-radiation biopsy results strongly predictive of 5-year disease free survival

## SPERMATOCYtic TUMOR

- Rare (<1%)
- Bilaterality more common (>9%)
- No ovarian or extragonadal counterpart
- No association with cryptorchidism or race predilection
- No serum markers elevation
- Age: 25 to 87 years

### *Prognosis:*

Excellent prognosis with rare malignant behavior

### *Microscopic features:*

Diffuse sheet like pattern

- Polymorphous cell population with 3 distinct cell types
  - Small lymphocyte like cells, 6 to 8  $\mu$ , scant cytoplasm and densely hyperchromatic nucleus
  - Intermediate cells, 15 to 20  $\mu$ , most common cell type, moderate amount of cytoplasm, round nucleus with finely granular cytoplasm
  - Giant cell, 50 to 100  $\mu$ , distinctive filamentous or spireme type chromatin

Intratubular spermatocytic seminoma may be seen

No association with Germ Cell Neoplasia In-situ (GCNIS)

### *Ancillary studies*

Positive for SALL4, CD117, MAGE-A4, Oct2, SSX, SAGE1