Staging Prostatic Adenocarcinoma in Radical Prostatectomy Specimens: ISUP 2010 Consensus Approach

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- **pT2**: Confined to prostate
  - **pT2a**: Unilateral, less than half of lobe
  - **pT2b**: Unilateral, more than half of lobe
  - **pT2c**: Bilateral
- **pT3**: Extraprostatic extension
  - **pT3a**: EPE or microscopic invasion of bladder neck
  - **pT3b**: Seminal vesicle invasion
- **pT4**: Invasion of rectum, levator muscles, and/or pelvic wall
Pathologic Staging

Is there an approach that allows pathologists to assess histologic staging in RP specimens more efficiently and with more confidence?
“Secrets”

1) Systematic submission of tissue at gross bench
   - Exact location of submitted tissue in each block

2) Knowledge of microanatomy
   - McNeal’s Zonal anatomy
   - Histologic variation in each zone
     - Extraprostatic tissue
Gross Submission
How Much Tissue?

- Entire apex margin + next section
- Entire bladder neck margin + next section
- At least every other intervening macrosection
The Other Secret: Detailed Block Summary

- A1: apical margin (perpendicular)
- A2: bladder base margin (perpendicular)
- A3: macrosection 1 near apex, complete
- A4: macrosection 3, right half
- A5: macrosection 3, left half
- A6-7: macrosection 5, right half
- A8-9: macrosection 5, left half
- A10: macrosection 6, near bladder neck, complete
McNeal’s Zonal Anatomy
Anatomy of the Male Pelvis

This shows the prostate and nearby organs.

This shows the inside of the prostate, urethra, rectum, and bladder.
Bladder

Penile urethra
Anterior

CZ

CZ
Central Zone Morphology

SV
Central Zone Variation
Who Cares?

• One can recognize the different anatomic regions by histology
• Each individual region has different specific issues with staging
Microscopic Anatomy
Apex

- Distal margin
Anterior

- Skeletal muscle
- Smooth muscle
- Large caliber vessels
<table>
<thead>
<tr>
<th>Anterior</th>
<th></th>
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<tbody>
<tr>
<td>Benign in skeletal muscle</td>
<td>Cancer in skeletal muscle</td>
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The images show histological sections of the anterior region of the body, comparing benign tissue to cancerous tissue in skeletal muscle.
Anterior
Bladder Neck
Bladder Neck
Margins and EPE
Positive Margin

- Tumor at ink
- Do NOT report distance if negative
Positive Margin at Apex
Positive Margin
Prostate Capsule
Extraprostatic Extension (EPE)

- “Tumor in fat”
  - There is NO capsule

- pT3
  - Apex (very rare)
  - Anterior (rare)
  - Posterolateral (common)
Posterolateral
Extraprostatic Tissue
Extraprostatic Extension: pT3
Extraprostatic Extension: pT3
Extraprostatic Extension: pT3
EPE and Positive Margin
Focal Minimal EPE: pT3
Extraprostatic Extension: pT3
Can EPE be diagnosed without fat?
Extraprostatic Extension: pT3
Extraprostatic Extension: pT3
Anterior
Anterior: Extraprostatic Extension
Anterior: Extraprostatic Extension
Anterior: Extraprostatic Extension with + Margin
Apical EPE
Bladder Neck Tumor
pT3a: Bladder Neck Involvement
Cancer in Bladder Neck Section: NOT pT3a

B9

CA

CA
Seminal Vesicle Involvement
Seminal Vesicle Involvement
Seminal Vesicle Involvement
Normal Paired Ejaculatory Ducts
Normal Ejaculatory Duct
Ejaculatory Duct Involved by Carcinoma: NOT pT3b
Lymph Nodes
Lymph Node Involvement

• Gross processing is important
  – Grossly identifiable nodes
  – Can usually submit the remaining tissue in a few extra cassettes

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- pT3  Extraprostatic extension
  - pT3a  EPE or microscopic invasion of bladder neck
  - pT3b  Seminal vesicle invasion
- pT4  Invasion of rectum, levator muscles, and/or pelvic wall
Positive bladder neck margin is NOT pT4
  - Should be staged as pT3a
Bladder invasion (pT4) is gross clinical invasion
  - Usually requires a separate biopsy or cystoprostatectomy for diagnosis