

**Urinary Practice Case**

**SURGICAL PATHOLOGY REPORT**

August 1, 2007

Specimen:

- A. Bladder, biopsy
- B. Prostate, needle biopsy

Gross Description:

- A. The specimen is received in formalin and consists of two pieces of light tan-gray soft tissue measuring from 0.2 to 0.4 cm in greatest dimension. The entire specimen is submitted in cassette A.
- B. The specimen is received in formalin and consists of multiple pieces of cylindrical shaped tan-white soft tissue measuring from 0.1 to 1.3 cm in length and measuring from less than 0.1 to 0.1 cm in diameter. The entire specimen is submitted in cassette B.

Final Diagnosis:

- A. Bladder biopsy showing transitional cell carcinoma with squamous differentiation, grade 2, with no evidence of invasion.
- B. Prostatic needle biopsy showing fragments of prostatic tissue with no evidence of malignancy.

**END Urinary Practice Case**

## Urinary Case 1

### SURGICAL PATHOLOGY REPORT

May 20, 2007

Specimen:

- A. Urinary bladder transurethral resection – left trigone and lateral wall.
- B. Prostate needle biopsies – right and left

Microscopic Description

- A. Sections reveal fragments of urinary bladder mucosa with a combined papillary and non-papillary neoplasm consisting of sheets of transitional cells with abnormal sizes and shapes. Nuclei are of different sizes and many mitotic figures are present. There is neoplastic invasion of the lamina propria and bladder muscular wall. Vascular invasion is not identified.
- B. Sections reveal fragments of prostatic tissue with normal glands and fibromuscular stroma. In one fragment, there is a cluster of neoplastic cells which has features similar to the ones described in paragraph “A”.

Final Diagnosis:

- A. Mixed non-papillary and papillary urothelial (transitional cell) carcinoma, grade III, portions of urinary bladder wall, “left side of trigone and left lateral wall”. There is neoplastic invasion of the lamina propria and bladder muscular wall. Vascular invasion is not identified.
- B. Urothelial (transitional cell) carcinoma in one fragment, needle biopsies of prostate gland, “right”. No diagnostic abnormalities, needle biopsies of prostate gland, “left”.

### ONCOLOGY CONSULTATION

August 27, 2007

The patient is a 71-year-old man followed by doctor for transitional carcinoma of the bladder. He refused surgical intervention with cystectomy and subsequently the decision was made to start him on concomitant chemoradiation therapy. The chemotherapy employed will be Taxol 60mg/m<sup>2</sup> and Carboplatin AUC 2.

Impression: High-grade transitional cell carcinoma of the urinary bladder involving the left hemitrigone and left lateral wall with obstruction of the distal left ureter and invasion of the prostate.

**END Urinary Case 1**

**Urinary Case 2**

**SURGICAL PATHOLOGY REPORT #1**

August 10, 2007

Specimen:

- A. Left ureteral mass
- B. Bladder, biopsy adjacent and left ureteral orifice

Final Diagnosis:

- A. Ureteral mass, biopsy: Amorphous fibrous tissue. Non-diagnostic for malignancy.
- B. Bladder biopsy left ureteral orifice: Grade 3/4 transitional cell carcinoma with adjacent inflammation. Evidence of lymphatic/vascular invasion. No muscle invasion is identified. Clinical correlation required.

**SURGICAL PATHOLOGY REPORT # 2**

August 29, 2007

Specimen:

- A. Tissue left orifice
- B. Tissue left base of bladder
- C. Left kidney and ureter

Final Diagnosis:

- A. Tissue left bladder orifice, transurethral resection: Transitional cell carcinoma in situ. No invasion identified.
- B. Left base of the bladder, transurethral resection: Papillary transitional cell carcinoma grade 3/4. No muscle invasion is identified.
- C. Left kidney and ureter: Multiple small benign cysts of the renal cortex. Dilated renal pelvis. Papillary transitional cell carcinoma, grade 3/4 involving the mid ureter. Tumor does not extend to the muscle wall. Additional foci of flat transitional cell carcinoma in situ involving the distal ureter. No invasion is identified. Areas of transitional cell carcinoma insitu involving the distal ureter margin.

**END Urinary Case 2**

**Urinary Case 3**

**SURGICAL PATHOLOGY REPORT #1**

9/28/07

Clinical Info: Left renal pelvic tumor

Final Dx

A. Kidney and proximal ureter, left, excision: Carcinoma of upper urinary collecting system

Histologic type: Urothelial (papillary transitional cell) carcinoma, high grade

Tumor location: Upper collecting system, 2.0 cm from the renal pelvis

Depth of invasion: Tumor invades through the muscularis into underlying fat

Tumor size: Up to 3.0 cm in greatest dimension

Lymphatic/vascular space invasion: Not identified

Ureteral/venous margin: Negative for malignancy

Lymph nodes: Not present

Additional findings: Simple cyst, renal cortex

B. Ureter, left, lower, partial resection: Inked margins and random sections are negative for malignancy

**SURGICAL PATHOLOGY REPORT #2**

6/9/08

Clinical Info: Bladder tumor

Final Dx

Bladder tumor (transurethral resection):

1. Papillary urothelial carcinoma, low grade (papillary transitional cell carcinoma grade 2/3)
2. No invasion identified
3. Muscularis propria present

**END Urinary Case 3**

## Urinary Case 4

### HISTORY AND PHYSICAL

June 2, 2007

This patient with chief complaint of persistent gross hematuria and lower back pain. Diagnostic workup showed abnormality in collecting structures of the left kidney with washings positive for transitional cell carcinoma. Patient deferred treatment at diagnosis and is now opting for laparoscopic surgery.

X-rays/Scans: CT Urogram: 2.3 cm abnormality collecting structures of upper pole left kidney, strongly suspicious for transitional cell carcinoma.

### OPERATIVE REPORT

June 2, 2007

Operative Findings: Two tumors of left renal pelvis: 3.5 cm and 1 cm papillary transitional cell carcinoma, with extension into collecting ducts. Microscopic lamina propria involved. Renal vein, artery, ureteral margins all negative. No LNs identified.

### SURGICAL PATHOLOGY REPORT

June 2, 2007

Specimen: Left kidney

#### Gross Description:

The specimen is received in formalin and labeled "left kidney." Overall, the specimen measures 10 x 5.5 x 4.3 cm and weighs 128 grams. The renal artery is 2.5 cm in length and 0.3 cm in diameter. The renal vein is 2 cm in length and 0.6 cm in diameter. The ureter measures 7 cm in length and 0.4 cm in diameter. The surgical margins at the renal artery, vein and ureter are unremarkable. The renal capsule shows no gross abnormalities. The external surface is entirely inked black. The specimen is bisected to reveal two polypoid lesions located in the upper and middle pelvis. The mass located in the upper pelvis is 3.5 x 2 x 0.6 cm and 9.5 cm away from ureter margin. The polypoid mass located in the middle pelvis measures 1 x 0.5 x 0.5 cm and 8.5 cm away from the ureter margin. Cut sectioning the mass reveals multiple papillary structures at the surface that are friable with no invasion identified grossly. A focal granular appearance of the pelvic mucosa is also identified, on the opposite side of the bigger polypoid mass. The remaining pelvis mucosa is unremarkable. Multiple cortical cysts are identified ranging from 0.2 to 0.9 cm in greatest dimension and filled with yellow clear fluid. The average cortical thickness is 0.5 cm. There is a sharp demarcation between the cortex and medulla. No lymph nodes are identified in the hilar region. Representative sections are submitted in 10 cassettes.

Sections of the kidney taken from the papillary lesions show a microinvasive papillary transitional cell carcinoma, high grade 3/4. The tumor is characterized by papillary structures with fibrovascular cores lined by moderate to severely atypical urothelial cells. Tumor necrosis is identified. Focal lamina propria invasion is seen. Also present is chronic inflammation and urothelial reactive change in the uninvolved pelvic mucosa. No perineural lymphovascular space invasion is identified. The margins of the renal artery and renal vein are free of tumor. Sections taken from the uninvolved kidney show multifocal, interstitial chronic inflammation with

histologic features of collections of lymphocytes. Focal glomerulosclerosis is identified. Urothelial carcinoma extends into the collecting ducts of the kidney.

Final Diagnosis:

Left kidney:

Two papillary urothelial carcinomas, grade 3/4, grossly measuring 3.5 x 2 x 0.6 cm and 1 x 0.5 x 0.5 cm, extending into collecting ducts (large tumor)

Microscopic invasion of lamina propria is identified

No perineural or lymphovascular space invasion identified

Ureteral margin is free of tumor

Renal vein and artery margins, free of tumor

Chronic pyelonephritis associated with multiple benign cortical simple cysts

No lymph nodes are identified in the adipose tissue of the hilar region

Comment:

Sections of the ureteral margin have a focus of papillary urothelial carcinoma associated with it. Deeper sections demonstrate the tumor is not within the lumen. Additionally, the ureter is not dilated as would occur if there was a papillary tumor in the ureteral lumen. Based on both the gross examination of the specimen and the microscopic evaluation including deepers of the specimen, this papillary tumor is felt to be a contaminant and not margin involvement.

**END Urinary Case 4**

**Urinary Case 5**

**SURGICAL PATHOLOGY REPORT #1**

March 5, 2007

Procedure: Cystoscopy and right retrograde pyelogram, right ureteroscopy with right ureteral mass biopsy. Left bladder mass removal. Right ureteral stent placement.

Final Diagnosis: Right ureter with scant disrupted urothelial fragments with focal atypia. Left base bladder tumor showing papillary urothelial carcinoma, low grade, noninvasive.

**SURGICAL PATHOLOGY REPORT #2**

November 8, 2007

Procedure Cystoscopy, TURB, ureteroscopic fulguration of ureteral tumors

Findings: There was a 1.5cm papillary lesion overlying and just medial to the right ureteral orifice, as well as a second, similar-sized lesion on the posterior lateral wall. On ureteroscopic exam of the right ureter, there were 3 papillary tumors lying below the vessels on the right side.

Final Diagnosis: Urinary bladder, trigone: Fragments of high-grade papillary urothelial carcinoma with foci of lamina propria invasion; no muscularis propria present. Urinary bladder, posterior bladder wall: Fragments of high-grade papillary urothelial carcinoma; foci of lamina propria invasion identified; no muscularis propria present. Ureter, right: Necrotic material with rare small fragments of invasive high-grade urothelial carcinoma involving lamina propria. Overlying flat urothelia carcinoma in situ is present. No muscularis propria present

**SURGICAL PATHOLOGY REPORT #3**

March 21, 2008

Procedure: Radical cystectomy, prostatectomy, nephroureterectomy, bilateral pelvic lymph node dissection, with ileal conduit urinary diversion

Final Diagnosis: Invasive urothelial carcinoma, multifocal, primarily involving the right ureter and focally the bladder neck, with the following features: High-grade with papillary component of the invasive carcinoma present in the renal pelvis and ureter. Carcinoma invades through the muscularis of the ureter into the periureteric fat and focally to the radial surface. Carcinoma is present in the renal pelvic soft tissues. Carcinoma minimally extends into the superficial muscularis propria of the bladder; the serosal surface is uninvolved. Lymph nodes: microscopic focus of metastatic carcinoma (<0.1cm) is present in the capsule of 1 of 36 lymph nodes (right external iliac). Bilateral ureters: Negative for neoplasm

**END Urinary Case 5**

**STOP**

**\*\*DO NOT PROCEED TO CASE 6 UNTIL INSTRUCTED\*\***

**Urinary Case 6**

**OPERATIVE REPORT**

October 25, 2007

Operative Procedure: TURBT

Indications: This is a 75 year old gentleman with a long history of smoking who presented to the emergency room with hematuria and clot retention. He required bladder irrigation and his hematuria has since resolved. He presents for a cystoscopy with retrograde pyelogram and possible transurethral resection of bladder tumor.

Findings: A nodular mass was seen on the left lateral wall of the bladder. Erythema was seen on the posterior wall of the bladder. The nodular area on the left lateral wall appeared to be a bladder tumor. The erythema on the posterior wall may simply have been a catheter irritation or perhaps carcinoma in situ.

**SURGICAL PATHOLOGY REPORT**

October 25, 2007

Final Diagnosis: Urinary bladder, transurethral resection of tumor: Invasive high-grade urothelial carcinoma with signet ring cell carcinoma. Smooth muscle invasion is present.

**END Urinary Case 6**

**Urinary Case 7**

**SURGICAL PATHOLOGY REPORT #1**

July 14, 2007

Operative Findings: The left trigone was replaced with a papillary tumor. I could not find the left orifice. There was a second papillary tumor on the dome of the bladder.

Final Diagnosis: Anterior bladder mass, biopsy: Non-invasive papillary urothelial carcinoma, low grade. Posterior bladder mass, biopsy: Non-invasive papillary urothelial carcinoma, low grade

**SURGICAL PATHOLOGY REPORT #2**

October 31, 2007

Indication: Gentleman who presented with left hydronephrosis. Cystoscopy and transurethral resection revealed a noninvasive bladder tumor. Three months later, he had a recurrence and is brought for evaluation again under anesthesia.

Operative Findings: The area of the previous resection was seen and there was a greater-than-5-cm area of micropapillary disease.

Final Diagnosis: Urinary bladder (tumor), transurethral biopsy: Infiltrating high grade urothelial carcinoma.

Comment: There is muscularis propria present in this tissue; invasion into the muscularis propria is identified. The diagnosis is supported by an immunoperoxidase stain for PSA, which is negative amongst the cells of interest.

**END Urinary Case 7**

## Urinary Case 8

### **SURGICAL PATHOLOGY REPORT #1**

February 2, 2007

Microscopic Description: Sections show a bladder tumor fulguration specimen showing features of noninvasive papillary urothelial carcinoma, low grade. Features of invasive carcinoma are not seen, however, extensive cautery artifact precludes a confident assessment for invasion. Muscularis propria is not identified.

Final Diagnosis: Noninvasive papillary urothelial carcinoma, low grade

### **SURGICAL PATHOLOGY REPORT #2**

April 1, 2007

Microscopic Description: Multiple fragments of papillary urothelial carcinoma are present showing moderate nuclear enlargement and irregularity, crowding and overlapping of nuclei and mitotic figures. Focally the cytoarchitectural atypia verges on marked. A detached fragment of squamous epithelium is present. Focal necrosis is present. Lymphatic/vascular invasion of the superficial lamina propria is noted in one area. One piece of muscularis propria is identified. Invasion of the muscularis propria is not seen.

Final Diagnosis: Tissue urinary bladder: Urothelial carcinoma high grade. One focus of lymphatic/vascular invasion noted in the superficial lamina propria. One piece of muscularis propria is present which is not involved by invasive carcinoma.

### **SURGICAL PATHOLOGY REPORT #3**

July 5, 2007

Microscopic Description: Sections show bladder biopsies that show features of noninvasive papillary transitional cell carcinoma, high grade. Invasive carcinoma is not identified. Prominent cautery artifact is seen. Some of the tissue fragments display unremarkable prostatic glandular tissue deep to the surface mucosa, in keeping with origin from the bladder/prostatic base.

Final Diagnosis: Noninvasive papillary urothelial carcinoma, high grade – bladder.

### **SURGICAL PATHOLOGY REPORT #4**

September 16, 2007

Microscopic Description: Sections show prostatic tissue from a TURP in which occasional fragments of non-invasive high-grade papillary urothelial carcinoma are identified. The prostate tissue chips show mild glandular and fibromuscular hyperplasia. Some of these chips display urothelium that shows variable squamous metaplasia. Invasive urothelial carcinoma is not identified and features of prostatic adenocarcinoma are not seen.

Final Diagnosis: Non-invasive (in situ) papillary urothelial carcinoma, high grade, scattered fragments. Mild glandular and fibromuscular hyperplasia (prostatic tissue) Prostate, TUR (prostate and bladder tumor)

**SURGICAL PATHOLOGY REPORT #5**

October 7, 2007

Microscopic Description: Sections show bladder biopsies that display high-grade papillary urothelial carcinoma. Focally, prominent cautery artifact is present. While most of the tumor appears to be non-invasive (in situ), one focus appears suspicious for early invasion into the submucosa.

Final Diagnosis: In situ papillary urothelial carcinoma, high-grade, focally suspicious for submucosal invasion – bladder, tumor fulguration specimen

**END Urinary Case 8**

**Urinary Case 9**

**SURGICAL PATHOLOGY REPORT #1**

January 7, 2007

Final Diagnosis:

- A. Right ureter, biopsy: Papillary urothelial carcinoma, low grade (noninvasive).
- B. Renal pelvis washing, right, cytology: Atypical fragments of urothelial cells.

**SURGICAL PATHOLOGY REPORT #2**

January 21, 2007

Final Diagnosis: Right kidney and ureter, resection: Papillary urothelial carcinoma, low grade (noninvasive), right ureter. Tumor size: 5.0 x 4.0 x 2.5 cm. Ureter margin of resection uninvolved by tumor or dysplasia. Regional lymph nodes: None identified. Adrenal gland: Not identified. Right kidney: Mild nephrosclerotic changes.

**SURGICAL PATHOLOGY REPORT #3**

June 3, 2007

Final Diagnosis: Left ureter, tumor, excision: Papillary urothelial carcinoma, low grade (noninvasive). Tumor from right ureter, resection: Papillary urothelial carcinoma, low grade (noninvasive). Deep right ureter, biopsy: Ureteral tissue with changes suggestive of low-grade papillary urothelial carcinoma (noninvasive).

**END Urinary Case 9**

**Urinary Case 10**

**SURGICAL PATHOLOGY REPORT #1**

February 14, 2007

Final Diagnosis:

1. Bladder biopsy: Transitional cell carcinoma, grade 2/4 with extensive squamous differentiation. No evidence of invasion identified.
2. Base of periureteral tumor, biopsy: Transitional cell carcinoma, grade 4/4, with extensive squamous differentiation with invasion into the lamina propria. Muscularis propria is not identified.
3. Bladder biopsy: Transitional cell carcinoma, grade 3/4 with extensive squamous differentiation with invasion into the lamina propria. Muscularis propria is not identified.
4. Bladder transurethral resection: Transitional cell carcinoma, grade 4/4, with extension invasion into the lamina propria and with extensive squamous differentiation.

Comment: Although the tumor appears extensively invasive, no large muscle bundles consistent with muscularis propria are identified.

**SURGICAL PATHOLOGY REPORT #2**

June 21 2007

Final Diagnosis: Urinary bladder, uterus, bilateral ovaries and fallopian tubes: Invasive papillary transitional cell carcinoma with squamous cell differentiation, grade 3/4, largest contiguous lesion is 2.1 x 1.4 cm located at right ureterovesical junction. Tumor microscopically invades through the muscularis propria into perivesical tissue. Inked radial margin free of tumor. Transitional cell carcinoma in situ identified, high grade, multifocal, located at anterior bladder wall and dome. Focal lymphovascular space invasion identified. The non-neoplastic bladder exhibits extensive, chronic active cystitis. Uterus shows a benign proliferative phase endometrium and benign endometrial polyps. Cervix exhibits moderate atrophy and benign nabothian cysts. Ovaries show benign physiologic changes. Fallopian tubes show no significant Histopathologic abnormality. Bilateral lymph nodes: (paracaval, periaortic, common iliac, Cloquet, hypogastric, presciatic) 0/107 lymph nodes. Pathologic pTNM State: pT3a pN0 pMx

**END Urinary Case 10**