Renal Pelvis, Ureter, Bladder, and Other Urinary Equivalent Terms, Definitions, Tables and Illustrations
C659, C669, C670-C679, C680-C689
(Excludes lymphoma and leukemia M9590-9989 and Kaposi sarcoma M9140)

Renal Pelvis, Ureter, Bladder, and Other Urinary

The renal pelvis, ureters, bladder and proximal portion of the urethra are lined by transitional epithelium, also known as urothelium. Tumors of the urothelium are more often multifocal compared to other sites. Two mechanisms have been proposed to explain this phenomenon: 1) a "field effect" and 2) tumor cell implantation.

1. The **field effect** theory suggests that the urothelium has undergone a widespread change, perhaps in response to a carcinogen, making it more sensitive to malignant transformations. As a result, multiple tumors arise more easily.
2. The **implantation** theory suggests that tumor cells in one location lose their attachments and float in the urine until they attach (implant) on another site. Transitional cell tumors commonly spread in a head-to-toe direction, for example from the renal pelvis to the ureter.

Molecular evidence has been found to support both of these theories, but neither has been proven to be the case for all tumors. Similarly, the widespread presence of flat carcinoma in situ may be a result of direct spread of neoplastic cells within the epithelium, direct extension, or due to implantation or field effect. The rules regarding histology and number of primaries are an attempt to reconcile these observations so that incidence data are consistent and reproducible.

Bladder

In the United States, transitional cell carcinomas account for more than 90% of all bladder cancers. Squamous cell carcinomas make up 3-8%, and adenocarcinomas make up about 1-2%. Pure squamous cell carcinoma of the bladder has a poor prognosis. See histology coding rules H5 and H13 for coding instructions.

Equivalent or Equal Terms

- **Flat transitional cell, flat urothelial**
- **In situ transitional cell carcinoma, in situ urothelial carcinoma**
- **Tumor, mass, lesion, neoplasm**
- **Urothelial and transitional**
- **Urothelium and transitional epithelium**
- **Intramucosal and in situ**
- **Papillary transitional cell carcinoma, papillary urothelial carcinoma**

Definitions

Contiguous Sites:

- Renal pelvis
- Ureter
- Bladder
- Urethra/prostatic urethra

Field effect: Widespread changes in normal or relatively normal tissue that predispose a person to cancer

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Flat Tumor (bladder)/Noninvasive flat TCC: A flat tumor is a non-papillary bladder tumor that lies flat against the bladder tissue. Flat tumors usually have a poor prognosis. Noninvasive flat TCC (also called carcinoma in situ, or CIS) grows in the layer of cells closest to the inside of the bladder and appears as flat lesions on the inside surface of the bladder. Flat, invasive TCC may invade the deeper layers of the bladder, particularly the muscle layer.

Note 1: Flat tumors may have foci or focus of invasion. This definition is for those flat tumors described as being carcinoma in situ, CIS, or non-invasive.
Note 2: Flat tumors could be called in situ or non-invasive. If the term "non-invasive' is used to describe flat carcinoma, be aware that for staging this would be an in situ carcinoma.

In situ: A tumor confined to epithelium (intraepithelial) with no penetration below the basement membrane

Intraluminal (Ureter): Within the lumen of a tubular or hollow structure. Urinary tumors may spread intraluminally to adjacent urinary organs.

Intramucosal: Within the mucosal surface.

Invasive: A tumor that penetrates beyond the basement membrane.

Most invasive: The tumor with the greatest continuous local/regional extension (see focal and foci/focus definitions).

Bladder

The walls of the **bladder** in order from least to greatest extension are:

- Mucosa
- Lamina propria (some pathologists equate this to submucosa)
- Muscularis mucosae (this layer not always present, may not be mentioned)
- Submucosa
- Muscular layer (muscularis propria, detrusor muscle)
- Serosa, adventitia

Renal pelvis and ureter

The walls of the **renal pelvis** and **ureter** from least to greatest extension are:

- Epithelium
- Subepithelial connective tissue, submucosa
- Muscularis mucosa
- Adventitia, periureteric fat, peripelvic fat

Multicentric, multifocal, and polycentric are often used as synonyms. The tumor has multiple centers. The foci are not contiguous.

Non-invasive tumor: A tumor confined to epithelium (intraepithelial) with no penetration below the basement membrane.

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Papillary tumor: A papillary bladder, ureter, or renal pelvis tumor is a warty growth that is attached to the wall by a stalk.

Papillary and Flat Carcinomas: Urothelial carcinomas may be either flat or papillary. The terms papillary and flat describe the structure or architecture of the tumor, not a specific histologic type. Both are transitional cell/urothelial carcinoma, although there are behavioral differences between the two.

Prostatic Urethra: Adenocarcinoma of the prostatic urethra is usually an extension of adenocarcinoma of the prostate. Transitional cell/urothelial carcinoma in the prostatic urethra may be an extension from the bladder or may be primary in the prostatic urethra. .

Satellite lesion or metastasis: Metastatic lesion within the immediate vicinity of the primary tumor.

Transitional cell carcinoma usually begins in the renal pelvis, not in the kidney. The cancer cells are different from renal cell carcinoma.

Transitional epithelium: A highly expandable epithelium that has a layered appearance with large cube-shaped cells in the relaxed state that transform and stretch into broad and flat cells in the expanded or distended state.

Urinary tract: Structures lined by transitional epithelium also known as urothelium.

Urothelium: The transitional epithelium lining the wall of the bladder, ureter, and renal pelvis, external to the basement membrane.

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Table 1 – Urothelial Tumors

Note: Excludes pure squamous carcinoma, glandular (adeno) carcinoma, or other bladder tumor histologies.

Urothelial/Transitional Cell Tumors	Code
With squamous differentiation	8120
With glandular differentiation	
With trophoblastic differentiation	
Nested	
Microcystic	
Transitional cell, NOS	
Papillary carcinoma	8130
Papillary transitional cell	
Micropapillary	8131
Lymphoepithelioma-like	8082
Plasmacytoid	
Sarcomatoid	8122
Giant cell	8031
Undifferentiated	8020

Table 2 – Changes to Previous SEER Site Grouping Table

Previous to 2007, tumors in the sites below were abstracted as a single primary.

Code	Site Grouping
C64	Kidney
C65	Renal pelvis
C66	Ureter
C68	Other and unspecified urinary organs

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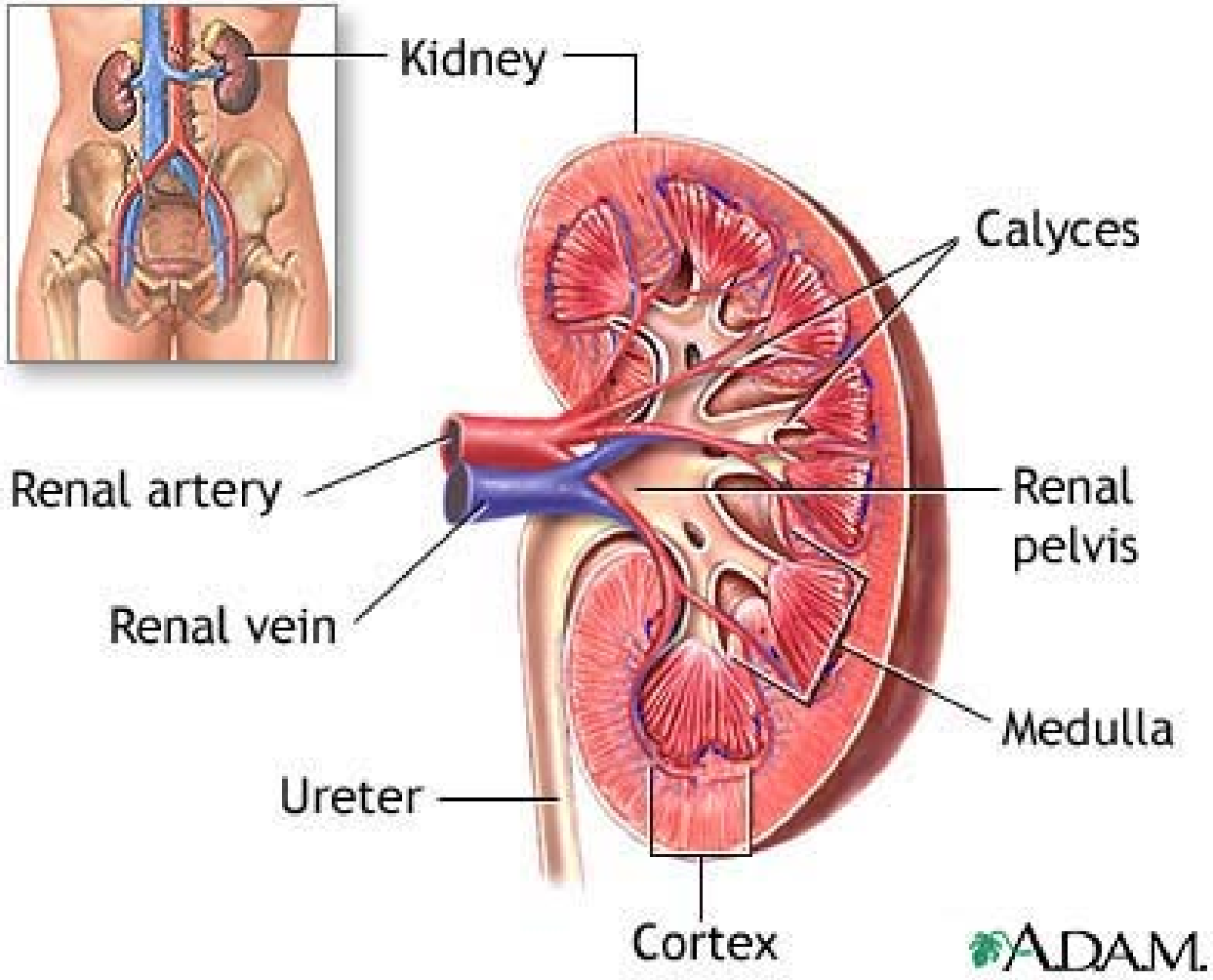

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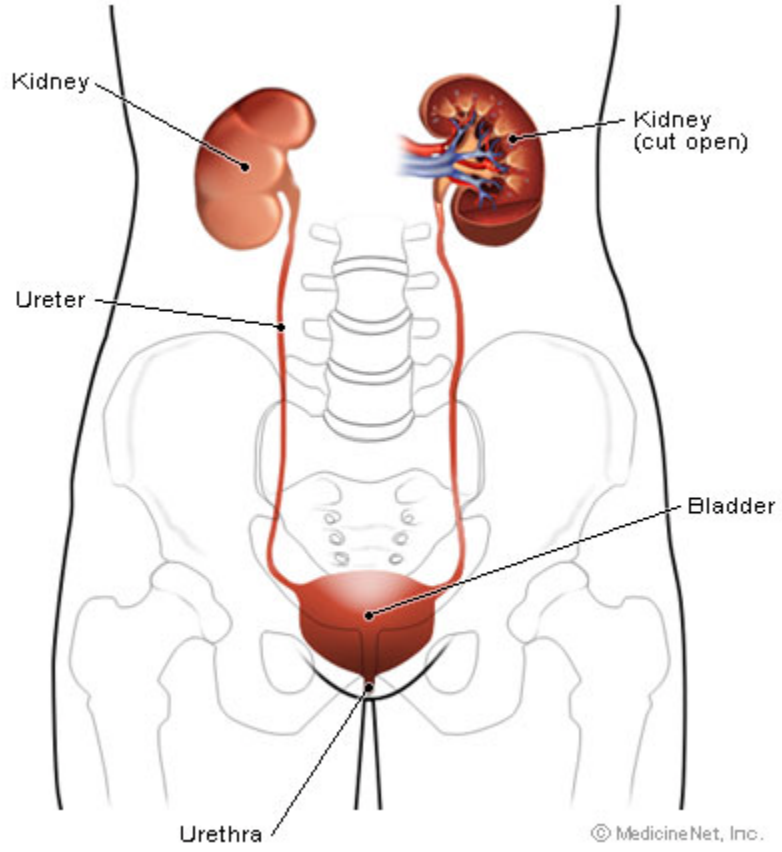

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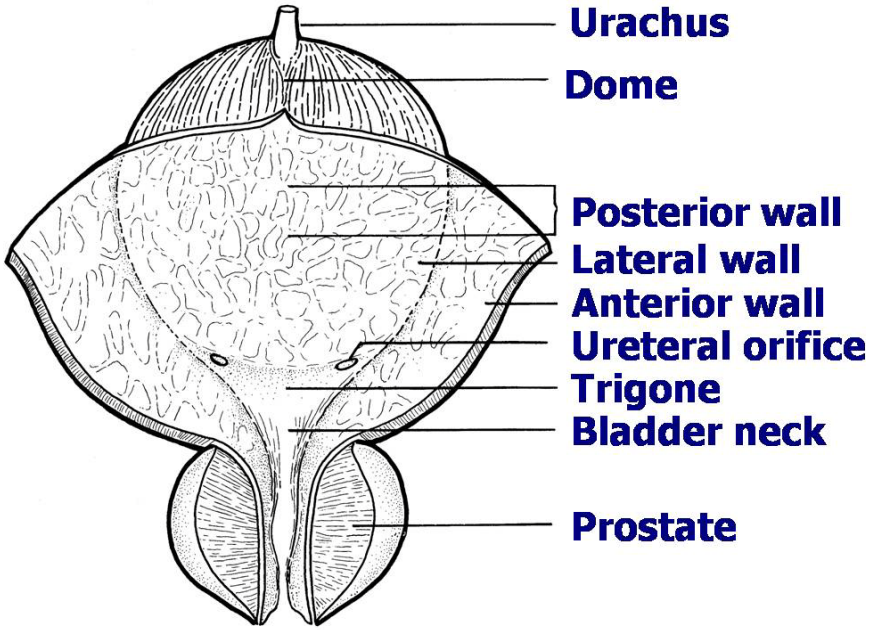
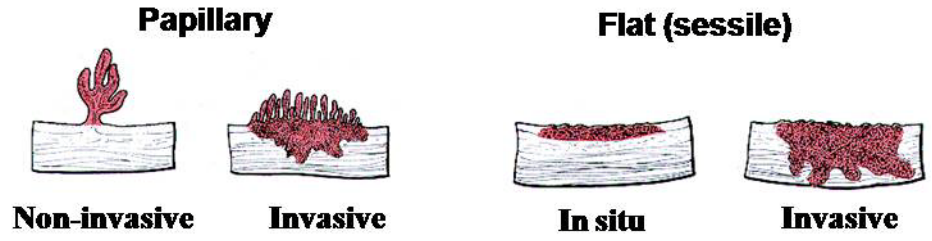


Source: TNM Atlas, 3rd edition, 2nd revision



Urinary Terms and Definitions