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2007 Multiple Primary and Histology Coding Rules
***Beyond the Basics*—Breeze Sessions**
Urinary System
June 19, 2007

Slide 1
Welcome to the Multiple Primary and Histology Coding Rules—"*Beyond the Basics*"—training. Today's training is on the Urinary System.

Slide 2
The Urinary System is, of course, the renal pelvis, the ureter and the bladder.

Slide 3
In this session we will:
● look at some of the histologies commonly seen in the Urinary System
● study some anatomy of the renal pelvis
● talk about some of the Urinary System Multiple Primary and Histology Coding Rules that have caused people problems as they have begun using these rules
● conclude with a Practice Case

Slide 4
You will find a list of synonyms in the Urinary System MP/H Rules. The following words are synonymous:
● Flat transitional cell
● Flat urothelial
● In situ transitional cell
● In situ urothelial

These entities can be invasive; there can be foci of invasion and in that case these are not classified as an in situ cancer. These are listed as in situ cancers because they are most commonly seen as in situ cancers.

Slide 5
When people talk about the "kidney" they usually use the word very generically and do not distinguish between the renal pelvis and the kidney parenchyma. As you know, Renal Cell Carcinoma starts in the kidney parenchyma while Transitional Cell Carcinoma usually begins in the Renal Pelvis. But there are a lot of anatomical details in the renal pelvis. If you learn about those details it will help you understand, for example, when you look at certain descriptions in the pathology report of a resection, you will know they are talking about the renal pelvis as opposed to the kidney parenchyma.

Slide 6
We will begin with a basic description of the renal pelvis vs. the kidney parenchyma. The kidney parenchyma is around the outside of the kidney. It goes all the way around. The renal pelvis is the inner part of the kidney, if you will. One of the key functions of the renal pelvis is to act as a funnel for the urine. Within the renal pelvis you will see the calyces, which are cup-like divisions in the renal pelvis. You will frequently see the term "calyces" in a pathology report.

Slide 7
We will review the renal pelvis in a little more detail and talk about the Collecting System. I just mentioned that the renal pelvis acts like a funnel that drains the urine from the kidney through the ureter to the bladder and out through the urethra. Within the renal pelvis we have the "Collecting Duct System" which consists of a collecting tubule, the cortical collecting duct and the medullary collecting duct. I want to call your attention to a very small part of the Collecting Duct System called the "nephron." The nephron lies right on the border of the renal pelvis and the kidney parenchyma. Its job is to collect impurities from the blood, i.e. filter the blood, form the urine and put those impurities into the urine. The urine then travels down through the Collecting Duct, which is a very long system---a twisting tube that carries the urine from the nephron. It moves the urine from the renal pelvis, through the collecting tubule and into the ureter.

Another term you will see used frequently is the "renal connecting tubule." This is the terminal channel of the nephron. So remember, the Collecting Duct System includes everything from the actual creation of the urine itself all the way through to shifting the urine into the ureter and readying it to exit the body—that's the job of the renal pelvis. Anytime you see the words: nephron, Collecting System, Collecting Duct –you know that the pathologist is talking about the renal pelvis.

Slide 8
There seems to be some misunderstanding about Rule M4, which states:
*When no other urinary sites are involved, tumor(s) in both the **right ureter AND** tumor(s) in the **left ureter** are multiple primaries.*

Slide 9
There is a simple reason why this rule was created. The cancers that start in the ureter actually start in the epithelium in the very inner part of the ureter. In order to spread to another organ a cancer must go through the connective tissue, through the muscle layer and then out into the regional tissues and extend to the other ureter. The chances of a primary cancer starting in both the right and left ureters simultaneously are rare; these ureteral cancers are rare in the first place. Be aware, therefore, that when you see both ureters involved, usually only one of them is the primary and the other one is involved by metastasis from the primary or original ureter.

Slide 10
We will next talk about "*Beyond the Basics*" of the Urinary Multiple Primary and Histology Coding Rules.

Slide 11
We want to review several rules that seem to have been misinterpreted in the field. First, for bladder tumors, we want to remind you that all of the Multiple Primary and Histology Coding Rules must be used **in hierarchical order**. If you don't follow the rules in their hierarchical order, you will commit some big errors.

One problem people have asked about is a misunderstanding about Rule M6: *Tumors diagnosed **more than three years** apart are multiple primaries.* People worry that they will be continually abstracting bladder tumors. However, just prior to Rule M6 we have Rule M5, which says:

Bladder tumors with any combination of the following histologies—
Papillary Carcinoma (8050)
Transitional Cell Carcinoma (8120-8124)
Or Papillary Transitional Cell Carcinoma (8130-8131)
Are a single primary.

In abstracting those bladder tumors that are Papillary/Transitional Cell you will first reach Rule M5. When that rule applies you do not go any further. So you would never reach Rule M6 to apply the three-year rule. Please be very careful and **use these rules in hierarchical order**. You will find that in using the rules in that order many of your questions and concerns may be answered.

Slide 12
Rule M8 says that: *Urothelial tumors in two or more of the following sites are a single primary:*
Renal Pelvis (C659)
Ureter (C669)
Bladder (C670-C679)
Urethra/prostatic urethra (C680)

Urothelial tumors are those tumors that are Transitional Cell, Papillary or Papillary Transitional Cell. These types of tumors have been handled differently in different registries in different states. We need to have one uniform method for coding these cases. We will talk about why cases are coded this way but first we will talk about some other types of cancer that spread throughout different parts of the urinary sites.

Slide 13
First we will talk about Carcinoma In Situ or CIS. Carcinoma in situ tends to creep along the mucosa (hence the title of the slide: "CIS: Mucosal Spread"). Although it is confined to the epithelium it can be diffuse. It can also be

described as multifocal or as focal. This type of carcinoma is high-grade carcinoma with a high propensity for invasion. It can creep along that epithelium and you can see in situ extension to other organs within the urinary system.

Slide 14

Diffuse CIS can frequently be seen extending or creeping from the mucosa of the bladder into the prostatic urethra, prostatic ducts, seminal vesicles and even into the distal ureters via the mucosal spread.

Slide 15

Next we will review some theories about why urinary cancers act the way they do. There are several facts about these cancers that cause problems in coding such as:

- These cancers tend to be multifocal
- These cancers are often diffuse
- Many times these cancers are found in more than one of these urinary sites meaning bladder and ureter, for example.

One of the theories to explain this behavior is called the "Field Effect." That theory says that the urothelium undergoes a dysplastic change and because it has a dysplastic change tumors appear in a multifocal or multicentric pattern. This means there are multiple centers of origin. They can also appear in more than one urinary site because even though they start in one of the sites the entire urothelium can be affected. You can see a rather disjointed pattern; you can see tumors popping up that are not contiguous; you can see a tumor that starts in the bladder then moves upwards into a ureter, for example. Those are all examples of the "Field Effect."

Slide 16

Another theory is that of "Implantation." In the Implantation Theory, the hypothesis is that the tumor itself sheds cells into the urine. The urine then carries those tumor cells in a head-to-toe direction and wherever that urine may stop or wherever one of those cells lodges it may begin to grow. Therefore, you will see a head-to-toe direction in the spread of the cancer from, for example, the renal pelvis to the ureter or from the bladder to the urethra but you will not see an upward spread. This theory cannot explain the upward spread of a tumor. It does explain discontinuous metastasis because those tumor cells are washed in the urine and they will implant at will. As they are stored in the bladder they certainly may have the propensity to implant in the bladder wall. They may be caught in tiny crevices and implant in that manner.

Slide 17
Another point we want to clarify is Rule H3, which talks about coding Transitional Cell Carcinoma. Rule H3 says to code 8120 when you have pure Transitional Cell Carcinoma (TCC) or flat TCC or TCC with
- Pure transitional cell carcinoma or
- Flat (non-papillary) transitional cell carcinoma or
- Transitional cell carcinoma with squamous differentiation or
- Transitional cell carcinoma with glandular differentiation or
- Transitional cell carcinoma with trophoblastic differentiation or
- Nested transitional cell carcinoma or
- Microcystic transitional cell carcinoma

In the past we have had these particular entities coded in a variety of codes. However, the fact is that these are all Transitional Cell Carcinomas; the difference is not truly recognized as a histologic difference. All of these are coded to 8120 or Transitional Cell Carcinoma.

Slide 18
You will see the fact in the *Urinary System MP/H Rules--Equivalent Terms and Definitions* that in the United States more than 90% of all bladder cancers are Transitional Cell Carcinoma (TCC). However, their gross appearance may vary. When looking at these cancers through a microscope some appear flat while some are papillary in appearance, i.e. flat transitional cell carcinoma vs. papillary transitional cell carcinoma. These terms describe the appearance of the cancers.

Slide 19
Transitional Cell Carcinoma (TCC) is classified by its growth pattern. The terms "flat" and "papillary" refer to the structure or architecture of the tumor not to a specific histologic type. The papillary tumors are wart-like lesions attached to a stalk. Since they are attached to a stalk they take longer to invade. The non-papillary tumors are flat and less common. They are more invasive because they originate right in the wall.

Slide 20
We will clarify the difference between Rules H2 and H3 and between Rules H10 and H11. The rules tell you to code 8120 when the only information is CIS of the bladder. The rules also say when there is multifocal Transitional Cell Carcinoma in situ and Non-invasive Papillary Carcinoma, code 8120—Transitional Cell Carcinoma. This apparently has been a problem for people because it is not they way they are used to coding.

Slide 21
Finally, we will do a Practice Case. The Final Diagnosis in the Practice Case reads:

*Bladder biopsy **Transitional Cell Carcinoma** with **Squamous differentiation**, Grade 2; no evidence of invasion.*

Prostatic needle biopsy fragments of prostatic tissue—no evidence of malignancy.

There is no malignancy in the prostatic needle biopsy. In this bladder biopsy you have no idea with the information given whether or not this is a single tumor. In bladder it is quite possible to have multiple tumors.

Slide 22
Since a single biopsy does not necessarily mean there is a single tumor and you have no way of knowing how many tumors there are in the information you are given, you would start with the Unknown if Single or Multiple Tumors Module with Rule M1. Stop at Rule M1. This is a single primary.

Slide 23
To code the histology you would use the Final Diagnosis, which says, "Transitional Cell Carcinoma with Squamous Differentiation." You do not code "with differentiation." Remember that with bladder tumors only a **pure Squamous Cell** is coded to Squamous Cell; this is very important. Whenever it is mixed with Transitional Cell you will code the Transitional Cell.

Go to the Single Tumor Module and start at Rule H1. Stop at Rule H3 and code 8120/2, Transitional Cell Carcinoma in situ.

I want to remind you that there are ten cases posted on the Website along with the answers and rationale for each of them. There will be no recorded Breeze Session Practicums in this series, *Beyond the Basics.*

Thank you so much for joining us for this *Beyond the Basics* training on the Urinary System MP/H coding rules.