**MEditorial, January 2011**

**“Kidney Tumors”**

**Within a two week period around the New Year, I saw 3 new patients with kidney tumors, @ least two of which likely have cancerous tumors. I thought therefore, this would be a timely topic for discussion. Not all kidney growths are cancers; in fact the majority of "mass" lesions we see on x-rays: incl. CT's (=CAT scans), as well as ultrasounds, are cysts which often do not need treatment, are seldom cancerous--and may not even warrant a prolonged period of observation. Of the solid masses, there are some benign-acting tumors such as angiomyolipomas and oncocytomas. Size of the mass matters, i.e., the smaller the sold tumor, the less chance it is cancerous; and small tumors, if cancerous, have a low chance of spreading (""metastases"), estimated @ a 1% chance over 3 years' follow-up for tumors under 2.6 cm. in diameter. Larger tumors are more likely to be malignant and are more prone to metastasizing. However, I had**

**a case a few years ago when a difficult-to-remove 20 cm. tumor turned out to be an oncocytoma, which is a "good one" to have. As regards the size issue, it turns out one of the main reasons for the increased incidence of kidney cancer is the "accidental" finding of small so-called "indeterminate" renal masses on studies such as CT's and ultrasounds often ordered for symptoms (e.g., abdominal pain, having nothing to do with a kidney problem). Urologists are often asked to assess these asymptomatic small masses. One would think that finding solid (possibly cancerous) tumors "early" would improve the overall statistics on cancer survivability, but such "screening" appears not to be achieving this. As stated, the small tumors are occasionally observed or if treated, are usually cured. However, there has also been a trend towards increased numbers of more of the larger/aggressive tumors, which can spread either in advance of their discovery or recur after their surgical treatment. About 3.5% of internal cancers in this country are of**

**renal origin, and kidney malignancies result in about 2.5% of all cancer deaths. Somewhere between 40,000 and 50,000 new cases will be diagnosed in the is country annually---with more than 15,000 deaths anticipated from the disease. Of the malignant kidney tumors, most, called "renal cell carcinoma" or RCC for short, derive from the "meaty" functioning cortical part of the kidney. These represent 90% of kidney cancers. The 2nd most common type (which I will not discuss here) are transitional cell cancers (TCC), which are really of the same cell origin as bladder cancer--and tend to occur in patients who have had the latter or are @ risk for bladder cancer (smokers commonly). Transitional cell cancers of the kidney originate from the inner lining of the part of the kidney where urine collects before it heads down the ureter to the urinary bladder. Most RCC's are fairly obvious on CT: moderate to large sold masses often at the periphery of the kidney which enhance after intravenous dye is given: that means the tumor, which**

**usually creates its own blood supply rapidly as it grows, takes up the dye from the circulation similar to the rest of the normal part of the kidney. In such cases a biopsy (which can be done under CT guidance through the skin without spreading tumor) is seldom needed, since the growth should be treated surgically anyways. Biopsying the small more indeterminate masses may be more reasonable with the following caveat; a negative biopsy (no cancer cells seen) may well be "falsely negative', that is, it could underestimate or miss the cancer cells. Solid indeterminate masses, especially in frailer/older patients, can be watched by serial CT's or ultrasounds--since their growth rate is slow, sometimes only 1/3 to 1/2 cm. annually; and as stated, some of the masses are benign and the chance of <3 cm. tumors spreading is felt to be low. Lesser invasive treatments such as freezing (cyroablation) which can sometimes be done non-operatively by a specialized radiologist, may be an option for treatment. However, this modality is less often to be advised**

**even for small mass in a healthy, "younger" patient, since we do not often know for sure after the treatment if the tumor is completely gone; and studies suggest a slightly higher local recurrence rate when compared to partial removal of the kidney. Retreatment of such recurrences with partial nephrectomy may be very difficult. Large suspected kidney cancers should be removed. The trend has been to take out part of the kidney including the tumor with a small margin of normal tissue. This gets harder if the mass is very large (over 4-6 cm.) and/or located centrally where major blood vessels enter the kidney. The urologist, should however, discuss with the (suspected) RCC patient the matter of partial nephrectomy (PN); and under what circumstances a total/radical nephrectomy (RN) might be necessary in advance or judged more appropriate during the actual operation. More and more studies show partial nephrectomy (PN) to be the best treatment for small to moderate sized RCC. Cancer outcomes are as good as for RN--**

**and preservation of more normal kidney tissue generally leads to better health, as the years progress. Whether PN should be done via an open--usually flank--("on the side") incision or laparoscopically without or with the use of robotics is controversial. Your surgeon should discuss those alternatives with you. In their favor, given an experienced laparoscopic urologic surgeon, there may be less postoperative pain and a shorter hospitalization/quicker return to work. However, the operation takes longer (often 2--3X as long) and may incur more bleeding and so-called "warm ischemia" time. That means the main blood supply to the kidney is controlled laparoscopically with small metal clamps in advance of cutting out the tumor to reduce bleeding and to see clearer; in doing so, there may be >30 minutes of no fresh blood flow to the kidney, resulting in a prolonged/slow recovery of that kidney's function. Laproscopic PN may also be associated with more delayed bleeding and urine leakage into the tissues surrounding the cut edge of the**

**kidney. Treatment for the patient who has had part or all of the kidney removed and yet has "adverse" prognostic factors (predicting recurrence); or for those unfortunate to have demonstrable recurrent or metastatic disease focus not on radiation or traditional chemotherapy--but on "biologic" medications to alter the immune response such as Interleukins (e.g., IL-2) and Interferons. In general, partial responses are not uncommon but complete responses and/or cures are seldomly seen. IL-2, more so the higher dose protocol, can have serious side effects. Better results are now being seen with a group of new chemotherapeutic--like agents, e.g., Sutent, which attacks certain molecular processes felt to promote the growth, invasiveness, and spread of these cancers. Furthermore, drugs such as these can be used sequentially with others of similar ilk, occasionally gaining further @ least partial cancer remission, and they can also be used before or after use of immune modulators e.g., IL-2. Occasionally, selective surgical removal of**

**renal cell cancer metastases will, in fact, allow for recurrent remission from disease. More possibilities for prolonged survival are opening up to patients with aggressive kidney cancers. Just to review my three patients cited at the start of this MEditorial. One (76 yo) had his tumor found be my on physical exam; it was quite large and impinging close to vital structures--but was safely removed by me in an under 90 minute open surgery with the surgical margins clear of tumor cells. The second patient (56 yo), who presented with generally feeling poorly and some left back ache, had surgery elsewhere last week----her growth was also quite large; and although a laparoscopic approach was being contemplated, I would not doubt if the surgeon had to reconsider mid-stream; and rely on a formal open incision. The third patient, only in his 30's, with an incidentally discovered small <3 cm. tumor, is weighing his options--but I have advised a partial nephrectomy. His prognosis, whether or not this small solid mass turns out cancerous, is really excellent. postoperative**

**and leakage of urine into the surrounding tissues from poor healing of the laparoscopic partial. In general radiation is not a treatment for localized or recurrent RCC although it is moccasioanlly offered. Treatments aimed at high risk patients who had their kidney removed or unfortunate patients with definite recurrences or metsatases traditionally have been more in the realm of substances such as Interferons as Interleukins which stimulate certain parts Meditorial January 2011"Kidney Tumors's with better long tern health outcomes and no higher chance off cancer recurrence that radical nephrectomy/As to the newer techniques including laparoscopic or robotic nephrectomeies, let me say the following. The science is changing and there is a role for these procedures in the hands of an experienced laparosopic surgeon. Benefits include less pain, shorter hospitalization, less chance of wound complications such as wound hernia. However, some studies indicate a longer operative time, more bleeding, chance of so-called "warm**

**ischemia" injuring the kidney, and more delayed postoperative issues include. Unexpected bleeding and leak of urine into the surounding tissues.**

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