Kidney Case # 1

DISCHARGE SUMMARY

Date: 08/25/2010

Admitted: 08/19/2010
Discharged: 08/25/2010

Admission Diagnosis: Left renal mass, suspicious, with renal cell carcinoma
Discharge Diagnosis: Left renal mass, suspicious, with renal cell carcinoma

Procedure: Left Laparoscopic Partial Nephrectomy with intraoperative renal ultrasound

Present Medical History: The patient is a 51-year-old male who initially presented in March of 2010 with complaint of right-sided varicocele. Workup for a possible retroperitoneal mass demonstrated a left lower pole renal mass. Multiple imaging modalities were used secondary to the patient's chronic kidney disease but it was noted that this mass was highly suspicious for renal cell carcinoma, so the patient was referred to Dr. XX. After discussing the options with him it was concluded to proceed with the above.

Hospital Course: The patient was admitted to the genitourinary service on 08/19/2010 and successfully underwent a left partial nephrectomy. In the postoperative recovery area it was noted that the patient's T-max was 97.4, heart rate 60s to 70s, blood pressures 150s to 190s over 70s to 90s. Physical examination was within normal limits. The laboratory examinations were also within normal limits with a postoperative H&H of 10 and 34. On 08/20/2010 the patient continued to do well. He had been on bedrest overnight. On postoperative day # 1, approximately 24 hours after surgery, the Foley catheter was pulled. The patient was on a regular diet. The patient began ambulation. In the evening of postoperative day # 1, however, the urology resident was called to bedside secondary to the patient's blood pressure was in the low 80s over 50s with a heart rate in the 60s. The patient was also lethargic with difficulty arousing the patient. Manual blood pressures confirmed the blood pressures being in the 80s over 50s. The patient did have no focal neurologic deficits. He was alert and oriented x4 after arousing. However, the patient easily drifted off. Urine output was 350 mL over the prior several hours. His abdomen was distended and tympanic. Laboratory exams demonstrated an H&H of 8.5 and 26. His anemia was likely secondary to postoperative bleeding. He also developed a significant amount of ileus, likely a postoperative complication and possibly associated with his bleeding. His acute blood loss anemia was treated with multiple blood transfusions. He was also given several fluid boluses. The patient's blood pressure responded appropriately. His postoperative H&H, however, was still low and did not seem to respond appropriately at an H&H of 8.6 and 26.7, so 2 more units of blood, for a total of 4 units of blood, were delivered to the patient for his acute blood loss anemia. By postoperative day #2 the patient's lethargy had resolved. He was feeling well and doing well. Physical exam demonstrated a benign abdomen. An NG tube had to be placed secondary to his abdominal distension. On 08/21/2010, postoperative day # 2 the renal service was consulted for his chronic kidney disease and possible worsening of kidney function over the last several months. They recommended fluid challenge and also made adjustments to his blood pressure regimen. The NG tube was removed on 08/22/2010 as the patient had positive flatus and good bowel sounds. The patient was tolerating clears and regular diet. His physical examination remained benign. By postoperative day # 4 his blood pressure had resumed into a hypertensive range which is the normal range for this patient. He remained afebrile and his vitals otherwise remained stable. Physical exam remained benign. With the aid of the renal service, blood

pressure medications to have this patient returned to a more normal blood pressure ranged continued. The patient otherwise began ambulating and also began with bowel movements and flatus. By 08/25/2010, it was felt that the patient had met criteria for discharge. He will be followed up as an outpatient by both his primary care physician and Dr. XX for his elevated blood pressure and his history of chronic kidney disease. He will follow up with Dr. XX in approximately one week with repeat blood work and to review the pathology.

CONSULTATION REPORT

Date: 04/10/2010

Mr. XX is a 51-year-old, who has come back for a follow up visit. He initially had epididymitis and had a scrotal ultrasound done, which showed a right-sided varicocele. The right-sided varicocele initiated a search for retroperitoneal pathology and a CT scan of the abdomen was done and it showed coincidental solid-looking mass in the left kidney. We then ordered an ultrasound of the left kidney along with an MRI of the abdomen without contrast and this confirms the presence of a solid 1.9 to 2-cm mass in the left kidney lower pole, which is consistent with renal cell cancer, as it does not have any echogenic characteristics nor does it have any fat. We went over Mr. XX's options of observation at such a young age versus partial nephrectomy on the left side. We went over the adverse effects of a laparoscopic partial nephrectomy, which included, but was not limited to severe bleeding needing an exploratory laparotomy, not being able to see the mass on ultrasound as well as on hand-assisted laparoscopic palpation need for total excision of the kidney if the tumor cannot be completely excised, a need for reoperation for postoperative bleeding, which would include an exploratory laparotomy and a possible nephrectomy. The adverse effects of laparoscopy in the form of bowel injury, injury to the abdominal wall, bleeding from the abdominal wall, and herniation of the abdominal wall were also mentioned. It is my opinion that the patient has given informed consent and will be scheduled for this surgery on main campus in the next 2 or 3 weeks.

RADIOLOGY REPORT # 1

Date 04/01/2010

MRI of the Abdomen without contrast

Clinical: GU Neoplasm NOS

Results: Within the inferior pole of the left kidney, along its lateral margin, there is a 3.0 X 2.0 cm renal mass. This mass does not demonstrate imaging characteristics consistent with a cyst. This mass contains no microscopic or macroscopic fat to suggest a benign renal mass. Malignant renal masses, including renal cell carcinoma, cannot be excluded on the basis of this MRI examination and further evaluation warranted. There is no evidence of perinephric lymphadenopathy or renal vein abnormality. No definitive metastatic disease is seen within the abdomen. IV contrast was not given and evaluation for enhancement of the mass cannot be performed. Multiple cysts are seen scattered throughout both kidneys with the largest noted at the superior pole of the left kidney, measuring 1.9 x 1.8 cm. Within the inferior pole of the right kidney, there is a small mass that contains fat and is therefore, likely an angiomyolipoma. No

abnormalities are detected within the heart base, lower lung lobes, liver, gallbladder, biliary ducts, portal vein, pancreas, spleen, stomach, duodenum or adrenal glands. The osseous structures appear unremarkable.

Impression: Mass within the inferior pole of the left kidney. This mass is not a simple cyst and contains no fat to confirm a benign diagnosis. Therefore, renal malignancy cannot be ruled out and further evaluation si warranted.

RADIOLOGY REPORT # 2

Date: 04/08/2010

US Echo Retroperitoneal Complete

Clinical: Other GU Neoplasm NOS

Results: Ultrasound evaluation of the kidneys and bladder was performed. The kidneys are normal in pole to pole length measuring 11.8 cm on the right and 12.9 cm on the left. There is good corticomedullary junction differentiation and good cortical parenchymal thickness: However, there are elevated resistive indices present within the segmental arteries of both kidneys measuring 0.83 on the right and 0.84 on the left. This is most likely on the basis of chronic medical renal disease. No Parvus-Tardus wave forms are appreciated to suggest renal artery stenosis. There is a 1.2 cm cyst present at the upper pole of the right kidney and a 2.3 x 2.1 x 2.4 cm complex cyst is present at the upper pole of the left kidney. This complex cyst shows layering debris along its dependent aspect. No evidence of hyperemic solid nodule within solid mass. Arising from the lower pole of the left kidney there is a 3 mm calculus present within the midpole of the left kidney. No evidence of hydronephrosis in either kidney, and both kidneys demonstrate symmetric perfusion.

Impression:
1. Solid mass at the lower pole of the left kidney which is concerning for malignancy.
2. Elevated persistive indices within the segmental arteries of both kidneys, possible of the basis of chronic medical renal disease.
3. Bilateral renal cysts. One cyst at the upper pole of the left kidney demonstrates layering debris along its dependent portion.
4. Nonobstructive left nephrolithiasis

OPERATIVE REPORT

Date: 08/19/2010

Clinical: Left Renal Mass.

Operation: US-Guided Left Laparoscopic Partial Nephrectomy.

Indications: The patient is a 51-year-old male who has been seen by M.D.XX in urology department. He had originally presented to urology with complaints of an epididymal cyst and a

varicocele on the right side on 03/18/2010. At that time a further evaluation for right retroperitoneum was undertaken to rule out other associations with a right-sided retroperitoneum. A CT stone study that was performed showed a possible left renal mass. After this mass was found on CT scan, Dr XX ordered an MRI and ultrasound of the patient's abdomen to further delineate the renal mass. Unfortunately, secondary to the patient's intrinsic kidney disease, contrast was not used during the MRI study. The MRI and the ultrasound further characterized the mass as a solid lesion located on the left kidney that was highly suspicious for renal carcinoma. After discussing the options including watchful waiting, minimally invasive procedure such as cryotherapy, and laparoscopic-versus-open partial nephrectomy, the nephrectomy was concluded to proceed with the above. The patient consented to the plan.

Procedure in detail: After obtaining informed consent and fully understanding the risks and benefits of the procedure the patient was transported from the preoperative holding area to the surgical suite where he was placed under general anesthesia by the anesthesia department. He was then repositioned into right flank position. He was then prepped and draped sterilely in the usual manner. Access to the peritoneal cavity for insufflation was obtained in the left lower using a Veress needle technique. This went without complication and the abdomen was insufflated to 15 centimeters of water. Once peritoneal insufflation occurred a 12 mm trocar with OptiVu was used to gain access into the peritoneal cavity. Inspection of the peritoneum and the underlying bowel contents verified that there were no injuries to the bowel. The abdomen was inspected for appropriate placement of the other ports. More medial and superior a 12 mm port was placed for the actual camera position. Just lateral and subcostal a third 12 mm port was placed. A fourth 12 mm port was placed just lateral to the initial access site and a 5 mm port was placed laterally for traction purposes. Once all these were placed within direct visualization, instruments were introduced into the patient's abdomen. The kidney was located beneath the colon and the colon was reflected medially so as to expose Gerota's fascia. The colon was satisfactorily reflected medially, using a combination of blunt dissection and the Harmonic wave cautery device. Once the colon was satisfactorily reflected medially, the spleen was partially mobilized from its lateral attachments so as to create room for the procedure. Attention was then turned to the lower pole of the kidney. Dissection along the lower pole of the kidney exposed the gonadal vein along with the ureter. These were retracted off the psoas muscle exposing the psoas and the aorta. Dissection took place along the plane of the psoas superiorly until the hilum of the kidney was located. The hilum was then gently dissected out using a combination of both blunt dissection and harmonic scalpel. The renal vein was then located along with its confluence with the gonadal and the adrenal vein. The gonadal vein was then ligated using a combination of bipolar energy and harmonic wave. Once the gonadal vein was ligated just beneath this area two renal arteries could be easily located. These were dissected free from their surrounding attachments. Once the hilum was completely dissected and freed in all include the renal vein and artery were dissected, visible, and accessible, attention was turned to just lateral to the hilum where Gerota's fascia was incised. Gerota's fascia was then carried down inferiorly and also laterally to expose the mass which was clearly visible. A small cystic lesion near the superior pole was located. The Gerota's fascia was continued to cleared until such time that was cleared of all surrounding Gerota's fascia and fat. Of note, there was a significant amount of inflammatory tissue around the area of tumor along the renal capsule surface. Intraoperative was then introduced into the peritoneal cavity. The planes of dissection were then noted using ultrasound to verify the depth necessary to get the patient tumor free. It was clear from the intraoperative ultrasound used that the tumor had not invaded or was near to but not invading into renal sinus fat so it was felt that the plane necessary to get the patient tumor free in terms of depth was near to or into the renal sinus fat. The circumferential margins were also noted using intraoperative ultrasound. The

ultrasound was removed. Monopolar suction device was then used to score the surrounding kidney around the circumference of the tumor. This demarcated the lines of resection. Once this was performed, the kidney was then elevated and one bulldog clamp was placed on each artery for a total of two bulldog clamps. The warm ischemia time was initiated immediately upon placing the first of the two bulldog clamps. Sharp scissors were then introduced into the abdomen. And along the plane of dissection, sharp dissection was used to resect the mass. There was minimal to no bleeding during this portion of the procedure. The mass was resected with what appeared to be a circumferential margin of normal parenchyma and the depth of the resection was carried down into the renal sinus fat but not into the collecting system. This mass was then removed and placed aside. Two figure-of-eight stitches were then placed within the resection bed for purposes using 2-0 Vicryl. Once this was performed, a Vicryl on a CT was used to take large parenchymal bites in a simple interrupted manner across the resection bed in order to reapproximate the kidney edges. Laparoscopic Wecks were used as pledgets and Laparoties were used for the knots. Once three stitches were thrown, FloSeal was placed into the resection bed to improve hemostasis. The three sutures were then tightened and the renal parenchymal edges were reapproximated once again using laparoscopic Wecks as pledgets and using Laparoties. The bulldog clamps were then removed and the resection bed was studied carefully and noted to have no bleeding or oozing and it was felt that hemostasis had in fact appropriately been achieved. The renal hilum was then reinspected and this was also noted to be without injury and with no evidence of bleeding or oozing. The resected tumor was then placed into an EndoCatch bag. The left quadrant trocar was then removed. The incision length was increased and the mass was removed from the body. Inspection of the mass both intracorporeally using the laparoscopic and extracorporeally on the back bench was noted to demonstrate that the deep margins did in fact have renal sinus fat consistent with the findings of grossly negative margins. There also seemed to be normal renal parenchyma around the edges of the mass Next the incised fascia was reapproximated using 0 Vicryl. Once fascial reapproximation the abdomen was reinsufflated and the laparoscope was reintroduced into the body. Inspection of the hilum demonstrated no evidence of injury the hilum. Inspection of the resection site of the tumor demonstrated that hemostasis had been achieved and there was no evidence of 96 during the time of removal of the mass and fascial manipulation. Once this was performed and inspection of the surrounding bowel demonstrated no injury it was felt that the patient's surgery had been completed satisfactorily. The trocars were then removed individually and under direct visualization of the laparoscope. No abdominal wall bleeding was noted. Once all trocars were individually closed the skin of the incisions were closed using 4-0 Monocryl. The patient was then repositioned into a supine position and awakened in stable condition.

PATHOLOGY REPORT

Date: 08/20/2010

Clinical: Left renal mass
Specimen: Left renal mass; Suture deep margins

Final Pathology Diagnosis: Excision from left kidney: Renal Cell Carcinoma, papillary variant with no neoplasia identified in inked margins or in perinephric adipose tissue.

Gross: Labeled left renal mass. Received in formalin is a 25 gm, 4.3 x 4 x 4 cm in maximum dimensions partial nephrectomy. The specimen is oriented by a suture which indicates deep

margin. The specimen is partially opened at the renal capsule. The deep surgical margin is inked black. The renal capsule is inked orange. On cut section, the specimen has a well circumscribed, 3 x 2.2 cm, tan-yellow, slightly hemorrhagic mass. Grossly, the mass extends to about 0.2 cm from the deep inked surgical margin. The remaining renal parenchyma is rubbery, soft and tan. The specimen is serially sectioned.

Microscopic: The grossly described tumor is a renal cell carcinoma of the papillary type. As commonly occurs in that variant, there are areas of histiocytes within the tumor. The tumor is cytologically Fuhrman Grade 2. In one region, the tumor has a somewhat dumbbell-like outward protrusion. No tumor is identified in inked margins or in perinephric adipose tissue. The kidney separate from the tumor has varying degrees of tubular atrophy, glomerulosclerosis and chronic inflammation including the presence of some lymphoid nodules. There is atherosclerosis of vessels. Some of these effects may be the result of compression from the adjacent tumor. There likely is however some intrinsic renal disease, possibly on a vascular basis.

Stage: pT1a pN0 pMx.

CSv2 ANSWER WORKSHEET

FIELD#	FIELD NAME	CODE AND RATIONALE/DOCUMENTATION	
1	**Patient Name -**		
CANCER IDENTIFICATION			
2	Primary Site		
3	Histology		
4	Behavior		
5	Grade		
6	Grade system type		
7	Grade system value		
8	Lymph-vascular invasion		
STAGE OF DISEASE AT DIAGNOSIS			
9	CS Mets at Dx - Bone		
10	CS Mets at Dx - Lung		
11	CS Mets at Dx - Liver		
12	CS Mets at DX - Brain		
COLLABORATIVE STAGING			
13	CS Tumor Size		
14	CS Extension		
15	CS Tumor Size/Ext Eval		
16	CS Lymph Nodes		
17	CS Lymph Nodes Eval		
18	Regional Nodes Positive		
19	Regional Nodes Examined		
20	CS Mets at Dx		
21	CS Mets Eval		
22	CS Site-Specific Factor 1		
23	CS Site-Specific Factor 2		
24	CS Site-Specific Factor 3		
25	CS Site-Specific Factor 4		
26	CS Site-Specific Factor 5		
27	CS Site-Specific Factor 6		
28	CS Site-Specific Factor 7		
29	CS Site-Specific Factor 8		
30	CS Site-Specific Factor 9		
31	CS Site-Specific Factor 10		
32	CS Site-Specific Factor 11		
33	CS Site-Specific Factor 12		
34	CS Site-Specific Factor 13		
35	CS Site-Specific Factor 14		
36	CS Site-Specific Factor 15		
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