Dear Friends,

Happy Independence Day

Laparoscopic surgery including laparoscopically assisted surgery is fast emerging as an alternative to open surgery for cancer patients. The decision is made after proper evaluation of case and an informed consent between the patient and the surgeon. Availability of onco-surgeon trained in advanced laparoscopic surgery is the key for successful outcome. Several studies have shown that the outcomes of laparoscopic oncography are comparable with that of open surgery.

Few advantages of laparoscopic oncography are:
✦ Better access and visualization
✦ Less blood loss
✦ Less pain and scarring
✦ Faster recovery
✦ Lesser risk of infection
✦ Lesser medications
✦ Short hospital stay
✦ Quicker return to work
✦ Quick recovery

We have started entire spectrum of advanced laparoscopic oncological procedures at Dharamshila Hospital. Few of the procedures done till date laparoscopically / laparoscopic assisted are:
✦ Whipple’s procedure for periampullary carcinoma
✦ Wertheim’s hysterectomy for carcinoma cervix
✦ Laparoscopic assisted abdomino-perineal resection
✦ Radical cholecystectomy
✦ Total radical gasterectomy for GE junction tumor.

We are also planning a workshop on Laparoscopic cancer surgery in November for a group of 100 surgeons at our hospital. The details of the workshop will be intimated to our surgeon friends very shortly. To get register yourself for this workshop, please write us at contact@dhrc.in

We look forward for your support in developing this specialty to greater heights.

Dr. S. Khanna
Executive Director

SUCCESSFUL TREATMENT OF TRIGEMINAL NEURALGIA WITH LINEAR ACCELERATOR BASED IMAGE GUIDED STEREOTACTIC RADIO-SURGERY

Stereotactic irradiation involves the delivery of a very high dose of X-ray treatment precisely focused on a target within the brain. The use of SRS allows delivery of a very high target dose with significantly lower dose to normal brain tissue in the immediately surrounding region. The result is an enhanced ability to control intracranial disease coupled with a reduction in the risk of side effects from radiation therapy.
of 80 Gy. The adjacent Brainstem received less than 10% of the total dose to the target i.e. less than 8 Gy). The patient reported 90% pain relief post procedure and stopped taking carbamazepine. Vomiting was seen as a side effect for the next 3 days and controlled with steroids and antiemetics. No other complication was reported.

We conclude that LA based Stereotactic radiosurgery using the Elekta Synergy is a safe and effective treatment for TN. This information is important as more centers are obtaining image-guided stereotactic-based linear accelerators capable of performing radiosurgery.

Dr. Hari Mohan Agrawal
MD (Radiation Oncology)
Consultant - Department of Radiation Oncology

NEPHRON-SPARING SURGERY FOR PAPILLARY RENAL CELL CARCINOMA IN HORSESHOE KIDNEY: A CASE REPORT

INTRODUCTION
Horseshoe kidney is perhaps the most frequent variation of kidney fusion. It occurs in 0.25% of the population and was described for the first time in 1521 by Jacopo Berengario da Carpi. It consists of two kidneys joined at their lower poles by parenchymatous or fibrous tissue called isthmus. It is more frequent in men with a 2:1 male/female ratio.1,2 It occurs in the embryo between the 4th and 6th weeks of gestation after the ureteral yolk has entered into the renal blastema. This usually occurs before rotation and the renal pelvices are facing forward. The cause has not been completely identified but it has been suggested that alterations in the position of the umbilical or common iliac artery is responsible, altering the ascent and rotation of the kidneys which end up being situated in the lower part of the abdomen. The position of the superior mesenteric artery has also been implicated. The calyces are normal in number but atypical in orientation and their blood supply varies widely.1,3

The exact incidence of carcinoma in horseshoe kidney has not been described in literature but the observation has been made that it is higher - approximately 3 to 4 times greater than that of the rest of the population. Survival in patients with this type of tumor is related to stage and histopathological grade.4 Knowledge of preoperative neoplastic localization, extent, and vasculature is indispensable as part of the management approach to horseshoe kidney tumors so that complete resection of the tumor can be carried out without unnecessarily removing functional tissue. Angiography or helical computed tomography (CT) angiography is essential for planning surgical approach due to the great variability of blood vessels.5 We recently managed a case of papillary renal cell carcinoma in a horse-shoe kidney by performing a nephron-sparing resection of part of the left renal moiety at our hospital.

CASE REPORT
A fifty-seven old female patient presented to our hospital with complaints of occasional left sided flank pain for 1 year. The general physical examination revealed pallor. Examination of the abdomen was unremarkable. Patient’s routine hematological and biochemical investigations revealed anemia (Hb-6.7 gm %) and microscopic hematuria. CECT abdomen shows mass lesion 7.5 cm diameter with heterogeneous morphology and mixed Hounsfi eld values in the upper pole of the left moiety of a horse shoe kidney (Fig.1, 2).

The kidney was lower placed (malascended) than normal. Reconstruction of the vascular anatomy revealed a separate artery supplying the isthmus. (Fig 2)

With a preoperative diagnosis of a carcinoma in the horseshoe kidney, the patient was taken for surgery following conventional preparation, including pre-operative blood transfusions. The kidney was approached through midline abdominal incision, and revealed a tumor (7×7cm) localized to the upper pole of left moiety of the horse shoe kidney.

After mobilization of the left colon, meticulous dissection was performed to clearly demonstrate the vascular anatomy at the left hilum. The isthmus was confirmed to have an independent arterial and venous supply. The pelvis was extra-renal and only the upper calyx was draining the tumour-bearing area. This calyx was divided and then the vessels to the upper part of left moiety were dealt with. A distinct line of demarcation appeared above the junction of left moiety and the isthmus and the renal tissue was divided along this line using harmonic scalpel (Figs 3, 4). The tumour-bearing renal tissue with >2cm free margin, the left adrenal and the para-aortic lymph nodes were then removed in standard fashion. After ensuring haemostasis and integrity of pelvi-calyceal system on the cut-surface of the residual kidney, the procedure was completed. The patient had an
uneventful post-operative course and was discharged on the fourth postoperative day.

The histopathology examination revealed a papillary renal cell carcinoma, Fuhrman nuclear grade 3. There was no metastasis in the removed para-aortic nodes. The resection margin, renal vein and ureter were free of the tumor.

DISCUSSION

The horseshoe kidney is probably the most common of all renal fusion anomalies. The anomaly consists of two distinct renal masses lying vertically on either side of the midline and connected at their respective lower poles by a parenchymatous or fibrous isthmus that crosses the midplane of the body. Almost a third of patients presenting with this congenital malformation remain asymptomatic. Clinical manifestations become apparent as a consequence of hydronephrosis, lithiasis, infection, or less frequently, tumor. The most common symptom that reflects these conditions is vague abdominal pain that may radiate to the lower lumbar region. Different abnormalities are associated with horseshoe kidney but carcinoma has been reported in only 123 patients. Forty-seven percent of these cases correspond to clear cell carcinoma, 28% to urothelial carcinoma, 20% to Wilms’ tumor, and 5% to sarcomas. Survival from these tumors is related to the pathology and stage of the tumor at diagnosis, and not the renal anomaly.

The surgical approach is guided more by individual preference than by necessity. The transperitoneal approach through a subcostal incision or midline incision allows early ligation of the renal artery and vein before tumor manipulation. This is an essential technical consideration in the management of renal carcinoma. We preferred the midline approach here as the horse-shoe kidney was low-lying due to incomplete ascent in this case.

Preoperative imaging is crucial in planning the surgery in a case of horseshoe kidney. Magnetic resonance angiography (MRA), magnetic resonance venography (MRV), and CT angiography have been advocated for imaging vascular anatomy. Angiographic examination for the specific tumor blood supply is able to reduce the intraoperative vascular injury, and reduce the need for blood transfusions postoperatively. The surgeon should however be prepared for unexpected vascular anatomy, despite impressions gained from preoperative imaging. It is our intuition that imaging for venous involvement may be less accurate in fused kidneys due to smaller caliber renal veins and variable venous anatomy. Formatted images obtained on modern CT machines have eliminated the requirement of separate angiographic examination. We could demonstrate independent arterial supply to the isthmus preoperatively. Meticulous and careful dissection at the hilum to demonstrate individual branches and intelligent use of vascular clamps facilitated a nephron-sparing, oncological safe surgery.

In general, the isthmus lies anterior to the aorta and vena cava, and receives a branch from the main renal artery. The division of the isthmus may be essential in resecting renal cell cancer from a horseshoe kidney, not only to achieve complete oncological clearance, but also to normalize the course of the ureters if considered essential. In our case we achieved complete tumor clearance with adequate margins without isthmusectomy, and were able to preserve additional renal parenchyma.

Papillary renal cell carcinoma in the horseshoe kidney is not common. Diagnosis of the disease is not difficult; however, saving the maximum residual renal function can be challenging. In our view, accurate preoperative assessment of renal function is necessary. The choice of surgical incision and the scrupulous attention to detail during surgery aids in retention of maximal functional renal tissue.

REFERENCES


Prof (Dr.) Sharan Choudhri
Senior Consultant & HOD – Surgical Oncology

Dr. Gyanendra S. Mittal
DNB Resident – Surgical Oncology