SUMMARY AND CONCLUSION

Although sonography and contrast enhanced CT scan are the primary imaging modality for detection and characteerization of renal tumours, MR has become an alternative imaging technique owing to its multiplaner capability and complenetary diagnostic role in assessement of venous extension.

MR imaging has many advantages including absence of ionizing radiation, multiplanar imaging capabilities, very good spatial (resolution, and the ability to demonstrate vascular patency without the use of contrast material.

Various pulse sequences can be used for examination, including T1 and T2 weighted SE sequences, fat, suppression, and GRE sequences, without and with gadolinium. These sequences can be used to maximized contrast difference between normal and pathological tissue which may result in detection of smaller lesions and better characterization of cystic versus solid lesions.

MRI can provide a complete diagnosis in the evaluation of renal tumour provided that recent technical developments are available. The MRI signal intensity of renal tumours differe according to the nature of the tumour (solid of cystic), contents of the tumour (fat or blood) and vascularity of the tumour which affect the degree of contrast enhancement of renal tumours, MRI play an

important role in differentiating benign tumours from malignant one, also it help in detection of any enlarged retroperitoneal LNS and invasion of the renal vein and I.V.C.

Also gadolinium-enhanced MR imaging provides an alternative means of evaluating the vascularity of lesions in patients who cannot tolerate iodinated contrast material and is an attractive option for clinicians hesitant to pursue contrast enhanced computed tomography for fear of nephrotoxicity in cases of mild to severe renal insufficiency.

Our study include 100 patients primarily diagnosed by ultrasound and CT to have 106 renal tumours and we aim at differentiating them into bening tumours (14 tumours) and malignant tumours (91 tumours).These tumours were further classified into non surgical group (6 angiomyolipomata, 4 oncocytoma and 4 lymphoma) and surgical group which include non, metastasizing malignant tumours (87 tumours), and complicated angiomylipomata (6 tumours).

As regard perinephric fat invasion, the MRI has 85%, 93% and 89% for sensitivity, specificity and accuracy respectively, while for the vasculr invasion it has 100%, 94% and 95% for sensitivity specificity and accuracy. The enlarged retroperitoneal LNs could be identified by MRI (94% specificity) but it can not differentiate metastatic from non metastatic one.

MRA and MRU are additive modality which can give us a preoperative orientation about the number of renal arteries and kidney function especially when planning for nephron sparing surgery (10 patients).

Inspite of the use of highly accurate imaging modalities with their new technical development, the MRI plays a very important role in detection and characterization of renal tumours which can be delineated in may planes (axial, coronal and sagittal), with accurate recognition of the tumoural content (fat or blood)

The ability of MRI to determine the presence of intra tumoural heamorrhage and pattern of enhancement as well is very important diagnostic criteria that denote the aggressive nature of the tumour and guide us for urgent interference and close post operative follow up.

MRA is and additive non invasive technique that can replace the conventional renal angiography and give us adequate criteria as regards arterial mapping, venous thrombus arterial mapping, venous thrombus extension and to some extent can determine the vascularity of the tumour.

Contrast enhanced MRU which can be performed (as MRA) during same sesson of scanning with the same injected dose of Gd DTPA which is considered as a new technique that sufficiently delineate the affection of the pelvicalyceal system especially by

urothelial tumour, and determine the excretory function of both kidneys and provide high resolution images of the pelvicalyceal systems, ureters and bladder thus considered as an alternative to conventional IVU.

Finally:

we recommend the use of MRI in the following situations:-

1- Contraindication to CM:-
   1- Renal failure
   2- Allergy to iodinated CM
   3- Pregnant women
2- Vascular infiltration by the tumour
3- Renal tumours of undeterminate nature which failed to be diagnosed by sonography and CT scan we can conclude that ultrasound and computed tomography should continue to be the primary imaging modalities for evaluating renal masses because of their wide availability and lower cost. However, in spite the fact that assessment of renal masses with MR imaging is currently most useful only in limited cases, most notably, patients who have complicated renal masses that were not adequately evaluated with the other modalities or patients with a contraindication to the use of iodinated contrast material, yet with the development of additional pulse sequences, and better resolution techniques, the role of MR imaging in evaluation of renal tumour and imaging of different renal masses, will soon achieve its promice.