SUMMARY AND CONCLUSION

Radiographic imaging of the kidney and its circulation is an important part in the evaluation of potential living kidney donors.

Before nephrectomy, donors routinely undergo conventional arteriography for this evaluation, although conventional arteriography is currently the most accurate method for imaging blood vessels, this technique is invasive, expensive and donors may have adverse local or systemic reactions. MR angiography as a non invasive technique would therefore be preferable for evaluation of these healthy potential donors.

The objective of this work was to evaluate the role of MRangiography in studying the reno-vascular anatomy of potential living kidney donors and to compare MRA with I.V-DSA and I.A-DSA in evaluation of the number and location of the donor renal arteries and in identification of major reno-vascular abnormalities that may preclude safe renal donation.

This study was carried out on 35 potential living kidney donors in Urology & Nephrology Center, Mansoura University. All donors were subjected to the following radiological techniques :-

(1) Ultrasonography.

(2) U.T.P.

(3) I.V-DSA followed by I.V.U.

(4) I.A-DSA :- 7 to 10 days after I.V-DSA.

(5) MR angiography.

(6) Scintigraphic renal assesement using ^{99m}TC-DTPA

The results of these techniques were compared with the operative findings reported by the surgeon in the written surgical sheet after nephrectomy. This was available for the 35 donors who were subjected to nephrectomy.

The results of the study showed a sensitivity of 100% by all techniques, except IV-DSA which was 95.8% specificity 80%, 40%, 70%, 90% and overall accuracy 91.4%, 77%, 88.5%, 94.2%, by MR angiography, I.V-DSA, I.A-DS aortography and I.A selective renal angiography respectively.

The accuracy was 100%, 95.8%, 100%, 100% in detection of single artery, 80%, 40%, 70%, 90% in detection of double arteries for MR angiography, I.V-DSA, I.A-DS aortography and I.A selective renal angiography respectively while the accuracy was 0% in detection of triple arteries by all techniques.

Concerning MRA, the results of the 25 donors who were subjected to MIP and multiplanar reformatted images as a postprocessing, were 94.7%, 66.6%, 88%, and 100%, 83.3%, 96% as regard sensitivity, specificty and overall accuracy by MIP and MPR images respectively.

In conclusion, the study demonstrated that MR angiography has better sensitivity and specificity as well as overall accuracy than those of I.V-DSA and similar sensitivity and better specificity than I.A-DS aortography. So, we can conclude that MR angiography has a potential for replacing I.V-DSA and I.A-DS aortography and holds a promise as a single examination for anatomical assessment of poteintial living kidney donors. The advantages of performing MRA rather than I.V-DSA and I.A-DSA include; reduction in patient discomfort, morbidity, invasiveness and radiation exposure to both the donors and medical staff. However, in equivocal and indeterminate cases, I.A-DS aortography plus or minus selective renal aniography are recommended for better assesment, on the other hand, the combination of MIP and multiplannar reformation images, inspite of addition of few minutes to the time of interpretation, permits better visulaization of eccentrically located stenosis, superimposition of structures which may simulate the presence of stenosis and signals in adjacent structures as the veins, which all corrupt the image quality as seen on MIP images alone.