Introduction and Aim of the Work

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AND

AIM OF THE WORK

Renal transplantation, first performed successfully in the early 1950s, is the treatment of choice for patients with end stage renal disease.

Major complications of renal transplantation are acute tubular necrosis, perirenal fluid collection, hydronephrosis and those of vascular origin. Perirenal fluid collection includes haematoma or seroma, urinoma and lymphocele **(Hricak et al., 1981)**. The spectrum of vascular complication includes arterial and venous stenosis and thrombosis, intrarenal or extrarenal pseudo-aneurysms,and arteriovenous fistulae. These complications may lead to acute or chronic allograft rejection **(Hohnke et al., 1987)**.

Radiological imaging modalities used to assess these complications are ultrasonography, nuclear medicine, angiography, computed tomography (CT) and magnetic resonance imaging (MRI) **(Myron et al., 1992)**.

Real time ultrasonography is already established as a valuable diagnostic aid for numerous complications of renal transplantation including obstructive uropathy, perinephric collections and features associated with both acute tubular necrosis and rejection episodes **(Fried et al., 1983)**. Now it is considered indispensable in the detection or exclusion of complications **(Bartrum et al., 1976,Maklad, 1981, and Hidell et al., 1994)**. Advantages of ultrasonography are that it is easy, rapid, inexpensive, harmless, can be repeated, not needing contrast medium and it gives highly informative imaging of renal parenchyma, the collecting system and perirenal area **(Bartrum et al., 1976)**. In particular, sonography with both duplex and color Doppler modes is an excellent non-invasive alternative to angiography. The color Doppler can detect arterial stenosis and then the duplex can quantify the severity of that stenosis **(Dodd et al., 1991)**.

Angiography is the imaging gold standard for the diagnosis of vascular complications, however, its invasive nature combined with the nephrotoxicity of contrast agent limits its utility as screening technique **(Stables et al., 1979 and Suider et al., 1989)**. Now it is used only when the reason for non-perfusion of transplant remains obscure and as part of percutaneous transluminal angioplasty [PTA] **(Stables et al., 1979 and Streem and Novick 1983)**.

Percutaneous needle biopsy is considered the most precise means of evaluating renal transplant dysfunction. Prompt and accurate diagnosis is essential if the failing kidney is to be treated successfully **(Hricak et al., 1979 and 1981)**.

Surgical transplant repair of complications may be extremely difficult because of fibrotic tissue formation around the allograft **(Hunter et al., 1983)**. Thus interventional radiologic technique with percutaneous approach, whenever feasible, represents an attractive alternative method, which may replace a major surgical intervention or improve the condition before surgery. Stenosis of the renal transplant artery is reported with an overall incidence around 8 percent (Zajko et al., 1982). Percutaneous transluminal angioplasty [PTA] should be considered the first choice method of treatment in renal transplant arterial stenosis **(Russel 1982)**.

AIM OF THE WORK:

More than 120 renal transplantations have been done in uronephrology center in Mataria Teaching Hospital and in the National Institute of Urology and Nephrology during the last five years.

The aim of this study is to re-evaluate through retrospective study the condition of these patients and their transplanted kidneys as regards its function, morphology and vascular supply; whether there is clinical complaint or not.

Secondly to detect any complications and to rationalize the role of different radiological modalities in their diagnosis.

Thirdly to assess the possibility of radiological intervention and management of these potential complications as an alternative or complementary to surgical interference.