Introduction

The renal sinus is a central spacious cavity formed by the extension of the perinephic space into the deep recess located at the medial border of the kidney, the renal sinus is surrounded by the kidney parenchyma laterally, the major branches of the renal artery and vein along the major and minor calyces of the collecting system are located within the renal sinus. The remainder of the sinus is filled with adipose tissue, lymphatic channels, nerve fibers of the autonomic nervous system, and varying quantities of fibrous tissue **(Zagoria et al., 1999)**.

Therefore, various pathological conditions can occur in the renal sinus from any of its constituents. In addition, the renal sinus can be involved by surrounding renal parenchymal and adjacent retroperitoneal lesions as with any anatomic region **(Davidson et al., 1999).**

Renal sinus lesions can be classified as Non tumerous and Tumerous.Non tumerous lesions include renal sinus lipomatosis, renal sinus cysts, vascular lesions and fluid collections. Tumors involving the renal sinus can be classified according to their origins into four groups (a)tumors of the renal pelvis (b)primary tumors of mesenchymal origin (c)tumors of the renal parenchyma that project into the renal sinus, and (d) retroperitoneal tumors that extend to the renal sinus **(Amis et al., 2000).**

Various imaging modalities can be used for the evaluation of pathologic conditions affecting the renal sinus. These include excretory urography, Ultrasonography, Computed Tomography, Magnetic Resonance imaging, and angiography. Each modality can provide useful information about the detection, characterization, and extent of disease **(Jeffrey et al., 2004).**

Excretory urography is useful for evaluating the involvement of the renal collecting system. Most abnormalities of the renal sinus are focal and termed parapelvic; the prefix "para" means "alongside" or "beside"

These abnormalities cause focal displacement and compression of the pelvicaliceal system at excretory urography and a circumscribed mass on cross-sectional images **(Rosenfield et al., 1979)**.

Ultrasonography is useful to distinguish cystic from solid space-occupying lesions when the lesion is detected with excretory urography and functions as the initial screening modality for non invasive imaging of the kidney. The normal renal sinus is seen as an area of increased echoes with variable contours due to the fat-parenchyma interface. A collapsed renal pelvis may be indistinguishable from echogenic renal sinus fat. Despite good results with US, there are limitations, especially with small lesions when the renal sinus lesion is poorly defined or the echo pattern is similar to or the same as that of the adjacent renal sinus fat or adjacent renal parenchyma **(Jeffrey et al., 2004)**.Color Doppler US is useful for the evaluation of renal vascular lesions, such as renal artery aneurysm, arteriovenous fistula, and renal vein varix. Angiography is usually required prior to treatment of renal vascular lesions **(Rosenfield et al., 1979)**.

Computed Tomography is the most sensitive, efficient, and comprehensive imaging modality for evaluating the kidneys and is the problem-solving technique for a wide variety of renal sinus lesions. The recent development of multidetector CT provides dramatically faster scan acquisition and improved spatial resolution by means of thinner collimation. Multiplanar reconstruction images can allow exact determination of the extent of complex renal sinus disease In general; the coronal plane is the most useful for the evaluation of renal sinus lesions because it provides a comprehensive view of the kidney, including the renal sinus **(Jeffrey et al., 2004).**

Magnetic resonance imaging is an alternative to CT for the evaluation of renal sinus lesions because it allows detailed tissue characterization of complicated renal sinus lesions and direct multiplanar

images with the same image resolution in the coronal, sagittal, and axial planes. It can also be used in patients with renal failure or contrast material allergies **(Pozzi-Mucelli et al., 2004)**.

Aim of Work

The aim of this work is to assess the efficacy of different imaging modalities as excretory urography, US, CT, MRI and Angiography in diagnosis of different renal sinus diseases**.**