Summary& Conclusion

Obstructive uropathy with resultant hydronephrosis is considering a major problem in most of urologic disorders. Because it is eventually leads to renal impairment, so reaching to early diagnosis in case of urinary tract obstruction is an important goal for most radiologist as well as urologist. Diagnosis of obstructive uropathy strat by non invasive plain abdominal x-ray comined with abdominal gray-scale ultrasonography (US). In patients with normal renal function, intravenous urography remains the investigation of choice for imaging the detailed anatomy of the pelvicalyceal system and ureters.

However the renal impairment IVU is contraindicated as contrast media is nephrotoxic, in such patients MRU is ideal radiological tool to visualize urinary tract anatomy. Contrast enhanced excretory MR urography is a promising method which can diagnose urinary functional obstruction together with full anatomical details.

Non-contrast computerized tomography (CT) scan is an effective imaging tool for acute renal obstruction. With spiral scanners, images can be performed effectively without contrast media, take only 5 to 10 minutes to perform, and cost about the same as IVPs. In terms of benefits, the CT equals the accuracy of the IVP in determining the presence of obstruction, but surpasses the IVP in detecting the specific cause of the obstruction. Various signs of obstruction on spiral CT include hydroureter, perinephric stranding, hydronephrosis, periureteral oedema and renal swelling. However, Non-contrast CT does not indicate function of the kidneys.

CT is by far the most accurate technique for the detection of lithiasis.

Helical CT-attenuation and density assessment can be used to predict stone composition . Uric acid, cystine, calcium oxalate monohydrate and brushite calculi can be identified with a probability of correct diagnosis exceeding 85%. This is of importance because these calculi are generally refractory to extracorporeal lithotripsy and uric acid and cystine calculi are usually treated medically.

MRU, due to its non-use of ionizing radiation, is the most important tool in the diagnostic work-up of genitourinary pathologies in infants, small children and in women during pregnancy.

In acute urolithiasis, MR urography probably will not as a diagnostic tool of first choice.

In chronic urolithiasis resistant to treatment, MR urography provides valuable information about the complicated anatomy of the stone bearing calyx and can disclose the anatomic variations of the collecting system.

MRU using HASTE sequences is a more accurate alternative to unenhanced spiral CT in detecting signs of obstruction (perirenal fluid and ureteric dilatation without the risk of radiation & it correctly identifies the point of obstruction and the non calculous causes of obstruction. However Unenhanced CT is more accurate in detection of obstruction by stone than MRU.