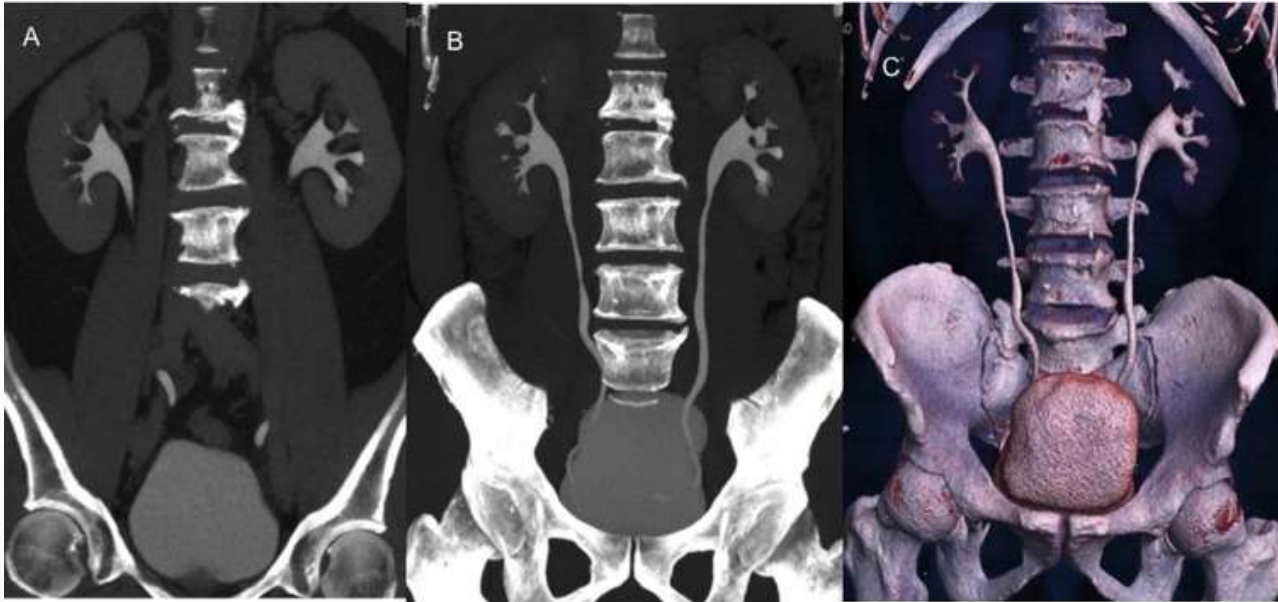


CT UROGRAPHY

INTRODUCTION

- computerized tomography (CT) **urogram** is an imaging exam used to evaluate your urinary tract, including kidneys, bladder and the tubes (ureters) that carry urine from your kidneys to your bladder.
- CT urography can provide valuable information about other abdominal and pelvic structures and diseases that may affect them.



INDICATION

- High diagnostic accuracy in detecting primary and recurrent urothelial tumors.
- their differentiation from benign lesions, anatomic variation and malformation characterization.
- evaluation of important pathology in the surrounding tissues.
- CTU is a valuable imaging study of the urothelial tract.
- Hematuria, initial staging and post treatment follow up of upper urinary tract and bladder malignancies are the most important indications for CTU.
- kidney or bladder stones

CONTRA INDICATION

- Pregnancy
- Iodine sensitivity
- Uncooperative patient
- Creatinine increases

PATIENT PREPARATION

- Patient should wear comfortable, loose-fitting clothing to your exam.
- You may be given a gown to wear during the procedure.
- Metal objects including jewelry, eyeglasses, dentures and hairpins may affect the CT images and should be left at home or removed prior to your exam.
- You may also be asked to remove hearing aids and removable dental work.
- KFT should be done.
- A written consent should be taken from the patient or attender.
- In order to distend your urinary bladder, you may be asked to drink water prior to the examination, and also not to urinate until after the scan is complete.

- You may be asked not to eat or drink anything for several hours before the exam, especially if a contrast material will be used.
- You should inform your physician of any medications you are taking and if you have any allergies. If you have a known allergy to contrast material, or "dye," inform your doctor.
- inform your doctor of any recent illnesses or other medical conditions, and if you have a history of heart disease (particularly congestive heart failure or hypertension), asthma, diabetes, kidney disease, prior organ transplantation, use of chronic NSAIDS (e.g., Motrin), anti-rejection medication or certain antibiotics. Any of these conditions or medications may increase the risk of an unusual adverse effect following the administration of contrast for CT urography.
- Women should always inform their physician and the CT technologist if there is any possibility that they are pregnant.



CONTRAST MEDIA

- Non ionic contrast media should be used for the investigation of CTU.
- Omnipaque (Iohexol) 320-380MgI/ml should be used, because it is the safest contrast material in modern time.
- 20-22G cannula should be used

PROCEDURE

- CT urography is being performed, the technologist will begin by positioning you on the CT examination table, usually lying flat on your back or possibly on your side or stomach. You may be asked to change positions during portions of the examination. Straps and pillows may be used to help you maintain the correct position and to hold still during the exam.
- Many scanners are fast enough that children can be scanned without sedation. In special cases, sedation may be needed for children who cannot hold still. Motion will cause blurring of the images and degrade the quality of the examination the same way that it affects photographs.

- If contrast material is used, a nurse or technologist will inject the contrast through an IV line placed in the hand or arm.
- Next, the table will move quickly through the scanner to determine the correct starting position for the scans. Then, the table will move slowly through the machine as the actual CT scanning is performed, Depending on the type of CT scan, the machine may make several passes.
- You may be asked to hold your breath during the scanning. Any motion, whether breathing or body movements, can lead to artifacts on the images. This loss of image quality can resemble the blurring seen on a photograph taken of a moving object.
- When the examination is completed, you will be asked to wait until the technologist verifies that the images are of high enough quality for accurate interpretation.
- CT exams are generally painless, fast and easy. With multi-detector CT, the amount of time that the patient needs to lie still is reduced.

BENEFITS VS. RISKS

- **Benefits**
- CT urography have been proven effective in detecting issues or abnormalities in parts of the urinary tract including the kidneys, bladder and ureters, or as a follow-up test to further examine for recurrent or new cancers of the urinary tract.
- Compared to other imaging tests, CT and MR urography both provide superior anatomic detail of the urinary tract and surrounding structures.

ADVANTAGES

- CT scanning is painless, noninvasive and accurate.
- A major advantage of CT is its ability to image bone, soft tissue and blood vessels all at the same time.
- Unlike conventional x-rays, CT scanning provides very detailed images of many types of tissue as well as the lungs, bones, and blood vessels.
- CT examinations are fast and simple; in emergency cases, they can reveal internal injuries and bleeding quickly enough to help save lives.
- CT has been shown to be a cost-effective imaging tool for a wide range of clinical problems.
- CT is less sensitive to patient movement than MRI.
- CT can be performed if you have an implanted medical device of any kind, unlike MRI.



- CT imaging provides real-time imaging, making it a good tool for guiding [minimally invasive](#) procedures such as [needle biopsies](#) and [needle aspirations](#) of many areas of the body, particularly the lungs, abdomen, pelvis and bones.
- A diagnosis determined by CT scanning may eliminate the need for exploratory surgery and surgical biopsy.
- No radiation remains in a patient's body after a CT examination.
- X-rays used in CT scans should have no immediate side effects.

RISKS

- There is always a slight chance of cancer from excessive exposure to radiation. However, the benefit of an accurate diagnosis far outweighs the risk.
- Because children are more sensitive to radiation, they should have a CT exam only if it is essential for making a diagnosis and should not have repeated CT exams unless absolutely necessary. CT scans in children should always be done with low-dose technique.

THANK YOU