birmingham bowel clinic

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CT (GI protocol) examination

The Radiology Department

The Radiology Department, sometimes called the x-ray, is the facility in the hospital that carries out the radiological examinations of patients, using a range of equipment, including x ray, CT scanning, ultrasound and magnetic resonance imaging (MRI).

The radiologists are doctors specially trained to interpret the results and carry out some of the more complex examinations. They are supported by radiographers who are highly trained to carry out many of the x-ray and other imaging procedures.

What is CT Scanning of the Abdomen?

Computed tomography (CT) uses special x-ray equipment to obtain image data from different angles around the body then uses computer processing of the information to show a cross-section of body tissues and organs.

CT imaging is particularly useful because it can show several types of tissue with great clarity, including organs like the liver, spleen, pancreas and kidneys. Using specialized equipment and expertise to create and interpret CT scans of the lower gastrointestinal (GI) tract, the colon and the rectum, an experienced radiologist can accurately diagnose many causes of abdominal pain. Often no additional diagnostic workup is necessary and treatment planning can begin immediately.

What are some common uses of the procedure?

Because it is a non-invasive procedure that provides detailed, cross-sectional views of all types of tissue, CT is becoming the preferred method for diagnosing many diseases of the bowel and colon (see common conditions) and for visualizing the liver, spleen, pancreas and kidneys. In cases of acute abdominal pain CT can quickly identify the source of pain. When pain is caused by infection and inflammation, the speed, ease and accuracy of a CT examination can reduce the risk of serious complications caused by a burst appendix or ruptured diverticulum and the subsequent spread of infection. In cases where bowel obstruction is suspected, CT may be the best imaging test.

CT is often the preferred method for diagnosing many different cancers, including colon cancer, since the image allows a doctor to confirm the presence of a tumour and to measure its size, precise location and the extent of the tumour's involvement with nearby

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tissue. CT examinations of the large intestine can be used to plan and properly administer radiation treatments for tumours and to guide biopsies and other minimally invasive procedures.

How should I prepare for the CT scan?

Dr Ian McCafferty will arrange for the radiology department (x ray) to give you detailed instructions on how to prepare for your CT examination.

You should wear comfortable, loose-fitting clothing for your CT exam. Metal objects can affect the image, so avoid clothing with zippers and snaps. You may be asked to remove hairpins, jewellery, eyeglasses, hearing aids and any removable dental work that could obscure the images. You will also be asked to attend an hour before the CT examination to drink an oral contrast that shows up the small intestine on the CT scan.

Women should always inform Dr Ian McCafferty or the radiographer if there is any possibility that you could be pregnant. Many imaging tests are not performed during pregnancy because radiation can be harmful to the foetus.

What does the equipment look like?

The CT scanner is a large, square machine with a hole in the centre, something like a doughnut. The patient lies still on a table that can move up or down and slide into and out from the centre of the hole. Within the machine an x-ray tube on a rotating gantry moves around the patient's body to produce the images, making clicking and whirring noises as the arm moves. Though the radiographer will be able to see and speak to you, you will be alone in the room during the exam.

How is the CT scan performed?

The radiographer will position you in a comfortable position on the CT table. A small cannula (needle) will be placed in a small vein in your arm to allow contrast to be administered into a vein. This allows better visualization of the tissues within your abdomen. The contrast is administered via a pump during the scanning. As the study proceeds the table will move slowly into the CT scanner.

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Before administering the contrast material the radiographer will ask whether you have any allergies, especially to medications or iodine, and whether the patient has a history of diabetes, asthma, a heart condition, kidney problems or thyroid conditions. These conditions may indicate a higher risk of reaction to the contrast material or potential problems eliminating the material from the patient's system after the exam.
A CT examination usually takes five minutes to half an hour. When the exam is over, you may be asked to wait until the images are examined to determine if more images are needed.

What will I experience during the procedure?

CT scanning causes no pain, and with new multislice spiral CT scanners the need to lie still for any length of time is reduced. The oral contrast you take before the CT examination may be mildly unpleasant, but most can easily tolerate it. Your exam may require the administration of the material by enema if the colon is the focus of the study. Many patients also receive intravenous contrast (injected into a vein) to help evaluate blood vessels and organs such as the liver, kidneys and pancreas.
You will be alone in the room during the scan; however, the radiographer can see, hear and speak with you at all times. With paediatric patients, a parent may be allowed in the room to alleviate fear but will be required to wear a lead apron to prevent radiation exposure.

Who interprets the results and how do I get them?

Dr Ian McCafferty, a radiologist, specifically trained to supervise and interpret radiology examinations, will analyze the images and send a signed report to your doctor. Dr Ian McCafferty may discuss preliminary results with you at the conclusion of your examination.

What are the benefits vs. risks?

Benefits:

A CT scan can diagnose many causes of abdominal pain with very high accuracy enabling faster treatment and often eliminating the need for additional, more invasive diagnostic procedures

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- Unlike other imaging methods, CT scanning offers detailed views of many types of tissue, including the lungs, bones, soft tissues and blood vessels
- CT scanning is painless, non-invasive and accurate
- CT examinations are fast and simple
- Diagnosis made with the assistance of CT can eliminate the need for invasive exploratory surgery and surgical biopsy
- CT scanning can identify normal and abnormal structures, making it a useful tool to guide radiotherapy, needle biopsies and other minimally invasive procedures

Risks:

- CT does involve exposure to radiation in the form of *x-ray*, but the benefit of an accurate diagnosis far outweighs the risk
- Women should always inform the radiographer if there is any possibility that they are pregnant
- Breast feeding mothers should wait for 24 hours before resuming breast feeding
- The risk of serious allergic reaction to iodine-containing contrast material is rare, and radiology departments are well-equipped to deal with them

What are the limitations of CT scanning of the abdomen?

The exam is not generally indicated for pregnant women.

If you have a query?

If you have a query about having the CT, please ring the Radiology Department between 9am and 5pm, Monday to Friday & 9am and 12pm Saturday.