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For patients

Therapeutic Enema for Intussusception

Doctors use a therapeutic enema to help identify and diagnose intussusception. This is a serious disorder in which one part of the intestine slides into another in a telescoping manner and causes inflammation and possibly an intestinal obstruction. Intussusception often occurs at the junction of the small and large intestine and most commonly occurs in children three to 24 months of age. Doctors may perform a therapeutic enema to avoid surgery. The enema uses air or a contrast material solution to create pressure within the intestine and "un-telescope" the intussusception while relieving the obstruction.
This procedure is usually done on an emergency basis. Tell your doctor about your child's recent illnesses, medical conditions, medications, and allergies, especially to barium or iodinated contrast materials. Your child may need to wear a gown and remove any objects that might interfere with the x-ray images. The doctor may perform an ultrasound to help confirm the diagnosis.

What is a Therapeutic Enema for Intussusception?

What is intussusception?

Intussusception is a serious disorder in which one part of the intestine slides into another part of the intestine, similar to a collapsing telescope. The intestine becomes inflamed and swollen and can cause an intestinal obstruction or blockage.

Intussusception may occur anywhere along the gastrointestinal tract. However, it often occurs at the junction of the small and large intestine. The condition most commonly occurs in children three to 24 months of age. Intussusception is a medical/surgical emergency. If your child has severe abdominal pain, fever, vomiting, or abnormal stools, call your doctor or an emergency medical professional immediately. Do not give your child over-the-counter medications.

What is a therapeutic enema?

The doctor may use abdominal ultrasound or an enema to help identify and diagnose an intussusception. They may also use the enema to treat the intussusception, in which case it is referred to as a therapeutic enema.

During this procedure, the doctor instills air or a solution containing contrast material (http://www.radiologyinfo.org) (iodine or barium (http://www.radiologyinfo.org)) into the large intestine through a small, soft tube placed in the rectum. X-ray fluoroscopy (http://www.radiologyinfo.org) produces images of the air or contrast material as it flows into the large intestine. The doctor injects the air or contrast material to create pressure within the large intestine and push or "un-telescope" the intussusception and relieve the obstruction. The therapeutic enema is not always successful. Your child may need surgery to correct the problem.

What are some common uses of the procedure?

Doctors use therapeutic enema to treat symptoms of intussusception, including:

- abdominal swelling or distention.
- severe abdominal pain that comes and goes and causes infants to pull their knees to their chest and cry.

- vomiting, including a greenish fluid called bile.
- passing stools mixed with blood and mucus.

How should we prepare for the therapeutic enema?

Tell your doctor about all the medications your child is taking. List all your child's allergies, especially to barium or iodinated contrast materials. Also tell your doctor about your child's recent illnesses or other medical conditions.

Your child may need to wear a gown and to remove jewelry, eyeglasses and any metal objects or clothing that might interfere with the x-ray images.

Your doctor may perform an ultrasound (http://www.radiologyinfo.org) exam to diagnose intussusception.

What does the equipment look like?

This exam typically uses a radiographic table, one or two x-ray tubes, and a video monitor. Fluoroscopy converts x-rays into video images. Doctors use it to watch and guide procedures. The x-ray machine and a detector suspended over the exam table produce the video.

How does the procedure work?

X-rays are a form of radiation like light or radio waves. X-rays pass through most objects, including the body. The technologist carefully aims the x-ray beam at the area of interest. The machine produces a small burst of radiation that passes through your body. The radiation records an image on photographic film or a special detector.

Fluoroscopy uses a continuous or pulsed x-ray beam to create a sequence of images that are projected onto a video monitor. The doctor may administer rectal contrast material or air during fluoroscopy to show the area being examined and make it appear bright white or black. This allows the doctor to view internal organs in motion. The doctor may also capture still images and store them on a computer.

Most x-ray images are electronically stored digital files. Your doctor can easily access these stored images to diagnose and manage your condition.

How is the procedure performed?

An enema for intussusception is usually done on an emergency basis.

A radiologist (http://www.radiologyinfo.org) , a doctor specificallytrained to perform, supervise, and interpret radiology exams, will perform the enema with the assistance of a radiologic technologist (http://www.radiologyinfo.org) .

A nurse or technologist may insert an intravenous (http://www.radiologyinfo.org) (IV) line into a vein in your child's hand or arm so that fluids can be given intravenously if necessary. A nurse may monitor your child's vital signs such as pulse and blood pressure.

The technologist may take an x-ray of your child's abdomen before the enema to make sure it is safe to perform.

Your child will lie on the exam table. The radiologist or technologist will then insert a tube into the rectum, secure it in place with tape, and begin to inject the air or fluid contrast into the large intestine.

Your child will need to hold very still. Children ages three months to two years will most likely need to be held by the technologist and an assistant or parent. Or they may be wrapped in a blanket or placed on an immobilization board. Occasionally, a medication

may be used for mild sedation.

Parents are often encouraged to be with their children during the procedure. A child-life specialist, a person with expertise in helping children cope with the stress of the procedure, may assist with the exam.

The technologist may walk behind a wall or into the next room at the end of the exam. They may activate the x-ray machine and take a final x-ray image.

Once the fluoroscopy and x-ray images are completed, most of the liquid contrast will be emptied through the tube. Your child will then be able to expel the remaining liquid or air in a diaper or in a restroom.

An enema for intussusception takes up to 45 minutes.

What will my child experience during and after the procedure?

As the doctor introduces air or the liquid solution into the colon, your child will feel the need to move their bowels. They may feel abdominal pressure or even minor cramping. Most children are able to tolerate the discomfort. The tip of the enema tube is specially designed to help the patient hold in the barium.

Depending on the results of the exam, your child may be hospitalized following the enema procedure and may require intravenous fluids and pain medication for one or more days. During this time, feedings may initially be withheld. Most children are able to resume eating within several days.

If hospitalized, your child will typically be ready to return home when they are tolerating a regular diet, have normal bowel function and no fever. Once your child returns home, call your doctor if your child has fever and/or increased pain.

Your doctor will tell you when your child can return to normal daily activities.

If the procedure used barium, your child's stools may appear whitish or greyish for a day or so as they clear it from their system. Some people experience constipation after a barium enema. Therefore, it is a good idea to encourage your child to drink plenty of fluids. If your child does not have a bowel movement within two days after the exam or is unable to pass gas rectally, call your doctor promptly.

Who interprets the results and how do we get them?

A radiologist, a physician specifically trained to perform therapeutic enemas and supervise and interpret radiology examinations, will perform and analyze the images. The radiologist will send a signed report to your referring physician (http://www.radiologyinfo.org) , who will discuss the results with you.

Since this is an emergency procedure, the radiologist will discuss the results with the referring physician.

What are the benefits vs. risks?

Benefits

- An air-contrast or liquid-contrast enema is a minimally invasive (http://www.radiologyinfo.org) procedure with rare complications.
- Allergic reactions to barium are extremely rare.
- No radiation stays in your body after an x-ray exam.
- X-rays usually have no side effects in the typical diagnostic range for this exam.
- When intussusception is resolved by an air-contrast or liquid-contrast enema, the patient is able to avoid surgery to correct

the intestinal blockage.

Risks

- The effective radiation dose for this procedure varies. *See the Radiation Dose (https://www.radiologyinfo.org/en/info/safety-xray) page for more information.*
- In rare cases:
  - some of the air or liquid contrast may leak through a hole in the intestines and produce inflammation (http://www.radiologyinfo.org) in surrounding tissues.
  - some of the air may leak through a hole in the intestines; this can cause rapid expansion of the abdomen and require decompression with a needle.
  - bacteria that is present within the intestine may leak out into the surrounding tissues and eventually into the bloodstream. This may cause an infection that may require antibiotic therapy.
- There is a chance that the enema will not resolve the blockage. If so, your child will require surgery to treat the intussusception.

A Word About Minimizing Radiation Exposure

Doctors take special care during x-ray exams to use the lowest radiation dose possible while producing the best images for evaluation. National and international radiology protection organizations continually review and update the technique standards radiology professionals use.

Modern x-ray systems minimize stray (scatter) radiation by using controlled x-ray beams and dose control methods. This ensures that the areas of your body not being imaged receive minimal radiation exposure.

What are the limitations of Enema for Intussusception?

An air-contrast or liquid-contrast enema may not successfully unfold the segments of the intestine. Some children may be too ill to undergo the procedure. In these cases, your child may need surgery to treat intussusception.

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