Video

Inguinal Hernia and Hydrocele

Patient and family information, brought to you by the Education Committee of APSA

Overview - "What is it?"

Inguinal hernias in children are based in their development in the womb. When a baby boy is growing in the womb, the testicles first grow in his belly. As he develops, his testicles travel down a tunnel in the groin, out into the scrotum. This tunnel also exists for girls, but ends instead at the labia, and girls have ovaries, not testicles. Occasionally, the tunnel does not close, leaving an opening from the belly into the inguinal canal where bowel, ovary, or other structures can become trapped. The side of the scrotum or labia, or upper part of the groin, with the open tunnel will then appear swollen.

A hydrocele is a fluid-filled sac in the groin or scrotum. They can look like inguinal hernias, but there is no bowel or tissue within the sac. Hernias and hydroceles can happen on one side of the groin area, or in both groin sides.

Inguinal hernia incidence in children ranges from 0.8-4.4%. It is more common in premature infants, up to 30%. Inguinal hernias happen more commonly in males compared to females between a 3:1 to 10:1 ratio. See Figure 1 for an inguinal hernia in a male.

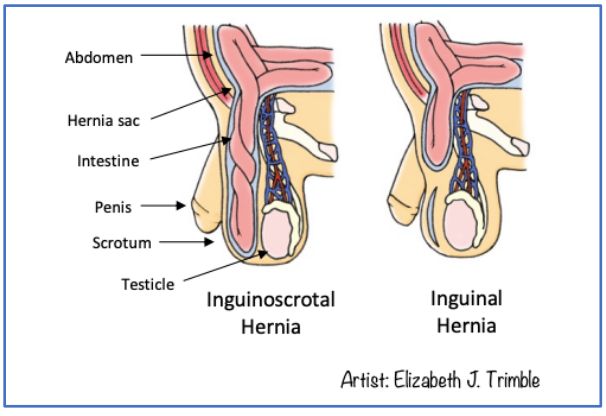

Figure 1: Inguinal hernia anatomy
(*Image credit: American Academy of Pediatrics*)

Signs and Symptoms - "What symptoms will my child have?"

Parents, or pediatricians during a well-child exam, may recognize a "bulge" or lump in the groin which comes and goes. It may appear larger in size when the child is crying or straining to have a bowel movement.

Hernias usually do not cause discomfort to the child, unless they become "stuck", also known as an incarcerated hernia. If you recognize a bump in the groin which is not resolving, becomes hard, or is increasing in size, it needs to be evaluated by a health care provider.

Incarcerated hernias can cause a blockage where the contents of the intestine are not able to pass. This would lead to belly swelling, nausea, vomiting, and increased discomfort. You may also recognize your child has a decrease in appetite, wet and dirty diapers.

- Seldomly, incarcerated inguinal hernias can swell and the blood supply can be cut off – this phenomenon is called a *strangulated hernia*.

Strangulated hernias can cause the skin overlying the hernia to change red or purple. The child will have extreme pain and will be inconsolable. He or she may develop a fever and bloody stool. These are concerning things and your child should be seen immediately by their pediatrician, surgeon, or the nearest emergency department.

Diagnosis - "What tests are done to find out what my child has?"

Physical exam: Most of the time, hernias can be diagnosed by physical exam. Your pediatrician or pediatric surgeon may ask your child to perform a movement which will increase the pressure inside the belly such as blow on a balloon, to see if the bulge appears.

Labs: Typically, labs are not helpful, unless there is concern for strangulated hernia. In this case, there may be abnormalities suggesting dehydration or that the blood flow to the intestine stuck in the hernia is getting cut off.

Ultrasound: The use of ultrasound, which is a radiologic exam utilizing sound waves to evaluate tissue, is not always required. It can be used if there is concern the hernia may be something else such as a lymph node or mass. Ultrasounds are also useful on confirming intestine is within the inguinal canal.

Treatment - "What will be done to make my child better?"

Surgery: Surgery is the main treatment of inguinal hernia. If the hernia is not incarcerated or strangulated, it can be done as an elective procedure. Surgery is recommended soon after diagnosis due to the risk of incarceration/strangulation. Surgery can be performed either laparoscopically or open.

Laparoscopic hernia repair – typically three small cuts are made in the abdominal wall. Through one of the cuts, a small camera is inserted into the abdomen. Small instruments are placed through the other two cuts. The hernia is evaluated and repaired. Advantage of laparoscopy is evaluation of the other side at same time. Your surgeon may offer to repair hernia on the other side if seen in the OR.

Open hernia repair: Small incision is made over the groin on the side of the hernia. Intestines will be placed back within the abdomen and hernia sack removed. The skin is closed with absorbable sutures.

Preoperative care: You will arrive at the hospital the day of the surgery. Your child will be asked not to eat or drink for 6-8 hours prior to surgery.

Postoperative care: Patients will recover for 1-2 hours from anesthesia. If your child is older than 50-60 weeks, he or she will likely be discharged home the day of surgery. If your child is still a newborn or was born prematurely, they may need to stay in the hospital overnight for monitoring after anesthesia. Children will be given Tylenol and Ibuprofen for pain control.

Risks: Complications from elective hernia repair is low; however, possible complications include but are not limited to swelling of the scrotum, recurrence of hernia, injury to vas deferens, shrinkage or atrophy of testicle (due to decrease in blood supply), intestinal injury, and chronic pain.

Benefits: Decreases risk of intestine damage from hernia defect.

Informed consent: A consent form is a legal document that states the tests, treatments, or procedures that your child may need and the doctor or practitioner that will perform them. Before surgery, your doctor should tell you what the operation is, the goal of the surgery and other possible treatment options that are available. Your doctor should explain the risks and benefits of the surgery. You give your permission when you sign the consent form. You can have someone sign this form for you if you are not able to sign it. You have the right to understand your child's medical care in words you know. Before you sign the consent form, make sure all of your questions are answered. It is important to know that during surgery, there are things that can happen that your doctor may have not predicted before going in. He or she will explain these to you after the surgery.

Home Care - "What do I need to do once my child goes home?"

Diet: Regular diet.

Activity: Your surgeon may request your child to do light activity for 1-2 weeks after the operation.

Wound care: Incisions need to remain dry for 24-72 hours. They then can be washed with soap and water. The incision(s) should not be submerged in water for 1-2 weeks.

Medicines: Tylenol and Ibuprofen for pain control.

What to call the doctor for: Drainage or bleeding from incision(s), Redness around incision(s), fever >101F, vomiting, or less wet diapers or peeing than usual.

Follow-up care: Per surgeon preference, you may follow up with surgeon between 2-6 weeks to evaluate incision healing, or as needed.

Long Term Outcomes - "Are there future conditions to worry about?"

Long term outcomes for hernia repair are overall successful. Parents should watch out for complications mentioned above. The risk of developing another hernia after a straight-forward repair is 0.8%.

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Editors: Sydni Imel, DO; Janice A. Taylor, MD