Biliary Dyskinesia

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

Overview - "What is it?"

Biliary dyskinesia is a condition in which the gallbladder does not squeeze well and the bile does not drain out of the gallbladder properly. The term "dyskinesia" is a combination of two terms "dys" which means abnormal and "kinesia" which refers to movement (abnormal movement). The gallbladder is an organ located underneath the liver in the upper right part of the belly just below the ribcage. The liver makes bile and the gallbladder normally stores bile. In response to a meal, the gallbladder releases bile into the small intestine to aid in the breaking down (digestion) of foods.

Biliary dyskinesia occurs mostly in older children and adults. It has been increasingly diagnosed in children. In biliary dyskinesia, there are no stones in the gallbladder.

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

- Abdominal pain (usually in the region of the right upper belly where the gallbladder is located) that typically occurs after meals, particularly fatty meals. The pain can be sudden (acute) or can be frequent, and recurrent over a long period of time (chronic). This is called "biliary colic".
- Nausea, vomiting and not wanting to eat (poor appetite) can also be seen in children with biliary dyskinesia.

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

Physical examination usually is unremarkable unless the child is having symptoms. During painful episodes, the patient may complain of right upper abdominal tenderness.

Ultrasound can indicate gallstones, which may cause similar symptoms. There are no stones in biliary dyskinesia. In this test, a probe is applied on the belly directly overlying the gallbladder. The probe uses sound waves to get an image of the gallbladder.

HIDA scan (also known as cholescintigraphy or hepatobiliary scintigraphy) tests how well the gallbladder empties. In this test, a tracer is injected into the blood of the child. This tracer is taken up by the liver and is concentrated in the gallbladder (like bile). After the tracer is given, the patient is given an injection of a medicine called cholecystokinin (CCK) or allowed to eat a fatty meal like a hamburger. Both CCK and a fatty meal are signals for the gallbladder to squeeze. This may cause your child pain when the CCK is injected.

This test is done in the nuclear medicine department. A tracer is given to the infant through the vein. Pictures are taken to see if the tracer is excreted from the liver and squeezed out by the gallbladder. Normally when the gallbladder squeezes, it dumps out most of the bile. In biliary dyskinesia, the gallbladder may only squeeze out about 35-40% or less of the total gallbladder contents. Incomplete and sluggish emptying causes the gallbladder to be irritated and cause pain. This tracer for this test has a small amount of radioactivity which will NOT be harmful to your child as it is cleared from the body quickly and completely with the poop.

Blood tests may be ordered to check your child's white blood cell count, bilirubin levels, liver function tests, and pancreatic enzymes. In most cases, these tests are normal in biliary dyskinesia.

Conditions that mimic this condition: Cholelithiasis (gallstones), cholecystitis (infection or inflammation of the gallbladder), hepatitis (inflammation of the liver), gastritis (inflammation of the stomach), stomach or duodenal ulcers, and pancreatitis (inflammation of the pancreas).

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

If a child appears to have symptoms of this condition and the ejection fraction on the HIDA scan is low, surgery to remove the gallbladder is recommended.

Laparoscopic cholecystectomy (removal of the gallbladder) is the standard of care today. The surgery is performed through small incisions in the abdomen using a camera and special tools.

Risks of surgery: Conversion to open surgery (larger incision in the abdomen), common bile duct injury, bile leaks, bleeding, and infection. Some of these complications can require further surgery. These complication risks are low but should be discussed by your surgeon.

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?"

Patients with biliary dyskinesia are usually discharged the same day as their surgery or the following day.

Diet: Your child may eat a normal diet after surgery.

Activity: Your child should avoid strenuous activity and heavy lifting for the first 1-2 weeks after laparoscopic surgery, 4-6 weeks after open surgery.

Wound care: Surgical incisions should be kept clean and dry for a few days after surgery. Most of the time, the stitches used in children are absorbable and do not require removal. Your surgeon will give you specific guidance regarding wound care, including when your child can shower or bathe.

Medicines: Medicines for pain such as acetaminophen (Tylenol®) or ibuprofen (Motrin® or Advil®) or something stronger like a narcotic may be needed to help with pain for a few days after surgery. Stool softeners and laxatives are needed to help regular stooling after surgery, especially if narcotics are still needed for pain.

What to call the doctor for: Call your doctor for worsening belly pain, fever, vomiting, diarrhea, problems with urination, or if the wounds are red or draining fluid.

Follow-up care: Your child should follow-up with his or her surgeon 2-3 weeks after surgery to ensure proper post-operative healing.

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

Even after surgical removal of the gallbladder, there is no guarantee that symptoms will resolve. This is because the diagnosis may not be exact, and it may be difficult to tell whether the cause of symptoms is from the gallbladder or is due to another problem such as acid problems in the stomach. It is therefore important to rule out other causes of belly pain before your child undergoes removal of the gallbladder.

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