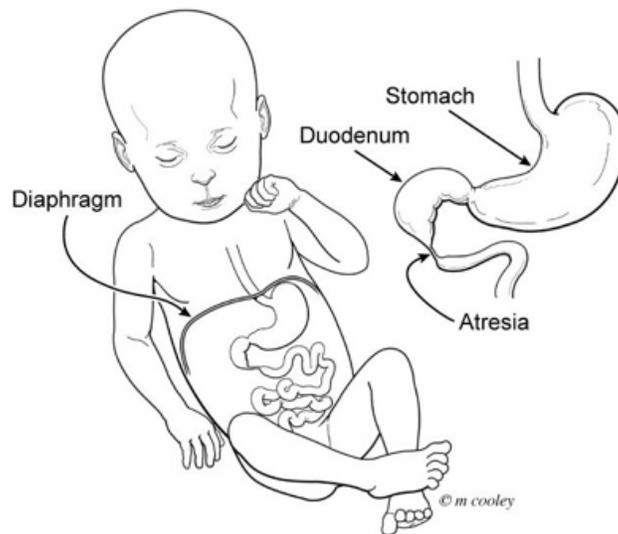


Duodenal Atresia



Overview

The duodenum is the first part of the small bowel (intestine). It is directly connected to the stomach. Duodenal atresia is a narrowing or blockage in the duodenum. This blockage prevents the passage of liquids and food from the stomach into the rest of the intestine.

Cause

The cause of duodenal atresia is not known. It is congenital, meaning it happens before your baby is born. Duodenal atresia develops 1 out of every 6,000 live births. Babies born with duodenal atresia often have other problems at birth, including heart defects. About 30 percent of babies with duodenal atresia have Down Syndrome.

How Duodenal Atresia is Diagnosed

Duodenal Atresia may be found during routine prenatal ultrasound but sometimes it is diagnosed after the baby is born. If your baby has duodenal atresia, the ultrasound may show fluid in your baby's stomach and part of his duodenum, but no fluid beyond that. This is known as the double-bubble sign. The prenatal ultrasound may also show too much amniotic fluid in your womb, a condition called polyhydramnios. If your doctor suspects a problem, additional tests may be ordered. These may include:

- **Fetal echocardiogram:** A fetal echocardiogram is a special ultrasound used by a pediatric heart doctor (cardiologist) to look closely at your baby's heart and surrounding blood vessels.
- **Fetal MRI (magnetic resonance imaging):** This type of imaging gives more detailed pictures of your baby's organs, and can help identify any other problems your baby may have.

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Other Tests

Some congenital conditions are caused by changes in DNA, or a baby's genetic make-up. The doctors may suggest genetic testing to find out more about your baby's DNA.

- **Cell-Free Fetal DNA testing:** Your doctor can take a sample of your blood to look for copies of fetal (baby) DNA. **This is only a screening test.** A positive result means that there could be problems with the DNA. This should be confirmed with another test to be sure of the result. Other testing can be done before or after birth depending on your need and the needs of the baby. This test can help identify if your baby has Down Syndrome.
- **Amniocentesis:** A small sample of the amniotic fluid that surrounds the baby in the womb is taken and tested for DNA problems. This test is usually done in the middle of the second trimester. An amniocentesis can be used to confirm findings on the cell-free fetal DNA test. This test can diagnose Down Syndrome.
- **Testing the baby:** After birth, a test is done with a sample of your baby's blood to look for chromosome problems. This is called either a "karyotype" (basic chromosome study), or microarray ((a more detailed look at smaller sections of DNA).

Care During Your Pregnancy

If a test finds you are carrying a baby with suspected duodenal atresia, you will continue to receive care from your obstetrician. Your obstetrician may refer you to the Ohio Fetal Medicine Collaborative (OFMC), which will help you connect with a team of fetal medicine experts.

There, you will meet with a multidisciplinary team including neonatologists (doctors who specialize in treating newborns), pediatric surgeons (doctors who perform surgery), and nurses to learn more about your baby's care after he or she is born. Nurse coordinators will help answer your questions and concerns, guide you through your pregnancy, and prepare you for what to expect.

Your doctor will watch your pregnancy closely. You will deliver your baby at a hospital that is ready to care for high-risk babies like yours. You should discuss your plans for labor and delivery with your obstetrician. Contact your doctor right away if you have any concerns.

Care After Your Baby Is Born

At the delivery hospital, a neonatologist (a doctor who specializes in treating newborns) will manage the care of your baby. The neonatologist will assess your baby's breathing and heart rate, and examine the baby for other problems.

- Your baby will receive care in the hospital's neonatal intensive care unit (NICU)
- A tube will be put into your baby's nose (nasogastric, NG) or mouth (orogastric, OG) down into your baby's stomach. This tube helps to drain fluid from the stomach, which may build up because of the obstruction in the duodenum.
- An intravenous line (IV) will be started in your baby's belly button, arm, hand, foot or scalp. The IV provides fluids to prevent dehydration and provide nutrition, and, if needed, antibiotics to prevent infection.
- Your baby will be transferred to the Children's Hospital neonatal intensive care unit (NICU) for further
- We strongly encourage you to start pumping breastmilk for your baby right away. While your baby will not be able to take any milk until after surgery, it is important to start pumping to establish your milk supply. Breastmilk is best for all babies.

Treatment

- Your baby will not be able to drink formula or breast milk until after the intestines have healed from surgery. A special IV called a PICC (peripherally inserted central venous catheter) will be used to give your baby IV nutrition called TPN (total parenteral nutrition). TPN has all of the calories and nourishment needed for your baby to grow.
- An x-ray of the chest and abdomen will be taken to look for any other problems
- Ultrasounds of the heart, kidneys and brain to look for any other problems
- Genetic testing, if not completed prenatally
- Babies with Down Syndrome may need additional evaluations

Surgery

Once the baby is stable he or she will need surgery. It may be a couple of days after birth, or it may be delayed if your baby has other problems that need to be addressed. While surgery is necessary, it is not needed emergently as long as the baby is receiving intravenous fluids and nutrients, and the OG or NG tube is able to keep the stomach emptied. The pediatric surgeon will remove the portion of the duodenum that has the narrowing or blockage and reconnect the healthy ends together. A gastrostomy tube (G-tube) may be placed in the stomach to help provide nutrition. The pediatric surgeon will discuss this with you.

Care After Surgery

After surgery, your baby will continue to receive care in the Children's Hospital's NICU. Your baby will need to be on a breathing machine until he or she is fully recovered from surgery.

Other treatments your baby will probably need after surgery are:

- Antibiotics to prevent infection
- Fluids and TPN given through the PICC
- Oxygen
- Pain medicines as needed
- The NG or OG tube will stay in place until your baby's intestines begin to work properly. This may take several weeks. Your baby will not be able to eat until the intestines have healed.

Feeding

Feedings are started once the intestines are fully healed after surgery. Your baby will be started off with small amounts of breast milk or formula, and the amount will be increased gradually over time. Your baby may be able to take milk by bottle, or may need to have feeds given through an NG or OG feeding tube. When your baby is taking enough breast milk or formula to grow and gain weight, the IV or PICC will be removed. If your baby has been receiving milk through a feeding tube, we will continue to work with you on helping your baby learn to feed, either by bottle or direct breastfeeding. Depending on your baby's other problems, he or she may need to go home with a feeding tube.

Complications

- **Infection:** Your baby may be on antibiotics at birth and for several days after surgery. The surgeon and staff will monitor your baby very closely for any signs of infection.
- **Sometimes babies need a blood transfusion**
- **Feeding problems after surgery:** It takes several weeks for the intestines to heal properly and can be slow to tolerate food.

Discharge Planning

You will be able to take your baby home once he or she is taking enough breast milk or formula to grow and gain weight. The total length of time your baby will stay in the hospital will vary. It will depend on whether your baby is born with other health issues or if there are complications after surgery. The usual length of stay in the hospital is about 3-4 weeks.

Looking Ahead

Your baby will need regular follow-up appointments to measure growth, development, and nutrition. You will want to find a local pediatrician to take care of routine checkups, immunizations, and doctor's visits. The program coordinator can help you if needed. The pediatric surgeon will follow up with your baby's surgical needs for as long as necessary.

About the Ohio Fetal Medicine Collaborative

The Ohio Fetal Medicine Collaborative (OFMC) is a group of care providers and hospitals committed to achieving optimal outcomes for high-risk expectant mothers and their babies with suspected fetal diagnoses.

Members of the OFMC include:

- Dayton Children's Hospital
- Miami Valley Hospital
- Mount Carmel Health Systems
- Nationwide Children's Hospital
- OhioHealth
- The Ohio State University Wexner Medical Center

For more information about OFMC or to learn more about congenital duodenal atresia, visit OhioFetalMedicine.org