Although most parents probably have never heard the term, prenatal hydronephrosis is the most common abnormality found on ultrasounds during pregnancy. This fluid-filled enlargement of one or both kidneys before birth can be serious and must be monitored closely. But the good news is that in most cases, the problem either resolves itself or can be corrected.

What Is Prenatal Hydronephrosis?
The kidneys are two bean-shaped organs that filter waste products from the blood and produce urine. They develop early in pregnancy and are among the first organs to appear on maternal ultrasounds, becoming visible by the 14th or 15th week of gestation. Prenatal hydronephrosis is a swelling of the kidney due to a backup of urine. This condition is detected in 1 to 2 percent of pregnancies.

In about 80 percent of cases, prenatal hydronephrosis is caused by a partial obstruction or blockage of the ureter, the muscular tube that transports urine from the kidney to the bladder. The next most common cause is reflux, in which urine from the bladder moves backwards into the kidney. Other abnormalities under the category of hydronephrosis include a condition in which the kidney has duplicate ureters. These conditions are rare and generally more complicated to correct.

Next Steps
Don’t panic if your doctor detects prenatal hydronephrosis before your child is born. Most of the time, the condition resolves on its own and requires no intervention. The key is identifying the small number of patients who will need specialized medical help after birth.

Once hydronephrosis is detected, an ultrasound is typically repeated later in the pregnancy. Sometimes an expectant mother is referred to a perinatologist, a physician who specializes in high-risk pregnancies, for a detailed ultrasound that provides better imaging of the kidneys. If these ultrasounds indicate that treatment may be required, the next step is a referral to a pediatric urologist.

Treatment Options
If needed, the first visit to a pediatric urologist should occur between the 20th and 30th week of pregnancy. This provides ample time for the physician to monitor the situation, get to know your family and develop a plan for after your baby is born. There is still a good chance that the hydronephrosis will go away without treatment before or in the first few months after birth. But if kidney function is found to be impaired, the kidney is significantly enlarged or structural abnormalities are suspected, a treatment plan might include one or more of the following:

- Oral antibiotic therapy, starting on the day of birth and continuing until the exact cause of the underlying problem is determined. This prevents urinary tract infections.
- Ultrasounds of the baby to examine the kidneys and related structures more closely.
- A specialized X-ray in cases where reflux is suspected. Because this is an invasive test, it is done only in cases of moderate or severe hydronephrosis.
- A functional test of the kidney, usually a nuclear medicine test, to determine if the kidney function is normal and the degree of obstruction or blockage.
- Surgery for a small subset of patients with hydronephrosis. In the vast majority of cases, surgery is successful and resolves the underlying issues.

The pediatric urology division of Riley Hospital for Children has significant experience in diagnosing and treating abnormalities of the kidneys and urinary tract. For the last two years, it has been recognized with a top-three ranking by U.S.News & World Report among pediatric urology departments in the United States. To make an appointment or to learn more, call 317.274.8896.