

MANAGING KIDNEY STONES

Written by: Mark Fratzak, MD, FACP, FHM

FMD and Hospitalist at Hocking Valley Community Hospital

Also called nephrolithiasis or urolithiasis, kidney stones affect approximately one in 11 people (19% of men and 9% of women by age 70 years.) Fortunately, treatment is available to effectively manage most stones. In addition, you can take steps to prevent kidney stones from recurring.

A kidney stone can form when there are normal or high levels of substances such as calcium, oxalate, cystine, or uric acid in the urine. These substances can form crystals. Crystals become attached to the kidney and gradually increase in size forming a stone.

Certain diseases and habits can affect a person's risk for developing kidney stones. These include a past history or family history of kidney stones, and certain dietary habits like high intake of salt, calcium, sugars and animal protein. Underlying medical conditions like gout, diabetes, Crohn's or overactive parathyroid also contribute to stones, along with certain medications such as water pills and dehydration.

Typically, the stone will move through the urinary tract and is passed out of the body in the urine. A stone may cause pain if it becomes stuck and blocks the flow of urine. Large stones do not always pass without medical assistance and sometimes require a minimally invasive surgical procedure to remove them.

Pain is the most common symptom when passing a kidney stone. Most commonly, pain only occurs with obstruction, in which the urine cannot pass freely from the kidney to the bladder. Pain can range from a mild and barely noticeable ache to discomfort that is so intense it requires treatment in the hospital.

Most often the pain escalates and then gets better, but does not go away completely. Waves of severe pain known as renal colic usually last 20 to 60 minutes. Pain can occur in the flank (the side between the ribs and the hip) or the lower abdomen, and the pain can move toward the groin.

Most people with kidney stones will have blood in the urine known as hematuria. Urine may be pink or reddish, or the blood may be visible only with urine dipstick testing or microscopic examination of the urine. You may pass "gravel" or "sand," which are small stones in your urine.

Other kidney stone symptoms include nausea or vomiting, pain with urination, and an urgent need to urinate. Kidney stones are usually diagnosed based upon your symptoms, a physical examination, and imaging studies. A non-contrast helical CT scan of abdomen and pelvis is the best imaging test if kidney stones are suspected.

A renal ultrasound can also be used to detect kidney stones and is the procedure of choice for people who should avoid radiation, including pregnant women and children.

Treatment of a kidney stone that is causing obstruction depends upon the size and location of the stone, as well as your pain and ability to keep down fluids. If your stone is likely to pass, your pain is tolerable, and you are able to eat and drink, then you can be treated at home.

If you have severe pain or nausea, you will need to be treated with stronger pain medications and intravenous (IV) fluids, which are often given in the hospital. In addition, patients with stones and who also have a fever must be treated in the hospital as soon as possible to avoid a life-threatening infection.

At home, you can take non-prescription pain medication until the stone passes. This includes nonsteroidal anti-inflammatory drugs such as ibuprofen (Advil, Motrin) or Naproxen (Aleve), but it is important to check with your provider first. Other medications, such as Tamsulosin (Flomax), may also be recommended to speed the passage of stones.

You will probably be asked to strain your urine to recover the stone. After you retrieve it, you should take it to your medical provider so it can then be analyzed in a laboratory to determine the composition of the stone (eg, calcium oxalate, uric acid, etc.) Knowing what type of kidney stone you have is important in planning treatments to prevent future stone formation.

Stones larger than 9 or 10 millimeters rarely pass on their own and generally require a procedure to break up or remove the stone. Some smaller stones also do not pass. Several procedures are available. Uteroscopy is a common endoscopic procedure that uses a thin scope, which is passed through the urethra and bladder, into the ureter and kidney. This endoscope allows the urologist to see the stone and remove it or to break up the stone into smaller pieces that can pass more easily.

Shock Wave Lithotripsy or SWL is a reasonable treatment option in many patients who need help passing a stone. You may require medication to make you sleepy and reduce pain during lithotripsy treatment. Lithotripsy is performed by directing high-energy shock waves toward the stone. These sound waves pass through the skin and bodily tissues and release energy at the stone surface. This energy causes the stone to break into fragments that can be more easily passed in the urine.

Extremely large or complex stones, or large stones resistant to shock wave lithotripsy, may require a minimally invasive surgical procedure to remove the stone. In this procedure, a small endoscopic instrument is passed through the skin (percutaneously) of the back into the kidney to remove the stone. After you have a kidney stone attack, you should have blood and urine tests to determine whether you have certain health problems or dietary habits that increase the risk of kidney stones.

If you passed and saved the stone, it should be analyzed to determine the type of stone. In addition, your clinician may request that you perform a 24-hour urine collection to

determine underlying risk factors for your kidney stone disease. Based upon these test results, you may be advised to drink more fluids to decrease the risk of another stone. Experts recommend drinking enough fluid that you make more than 2 liters of urine per day. Also, you may be advised to make changes in your diet depending upon the type of kidney stone you have and the 24-hour urine results, or you may be advised to take a medication to reduce the risk of future stones.

Please contact one of our physicians today if you are concerned that you might be at risk for kidney stones. Call 740-385-0202 or 740-385-6864 today.