Extracorporeal Shock Wave Lithotripsy (ESWL)

Definition

Over time, minerals (called “stones”) can settle in your kidneys. **Extracorporeal Shock Wave Lithotripsy (ESWL)** is a procedure that uses sound waves (also called shock waves) to break these stones into smaller pieces so that they can pass from your body in your urine.

Risks

ESWL is generally a safe procedure with few, if any, risks. These risks include:

- Urinary tract infection.
- Bleeding around the area where the stones were crushed.
- Pain when the smaller fragments pass through your urinary tract.
- Inability to pass urine if the stone fragments block your urinary tract.

Preparing for Extracorporeal Shock Wave Lithotripsy
Your doctor will give you detailed instructions prior to your ESWL. It is important that you follow these instructions completely. These instructions may include:

- Do not eat or drink after midnight the day before your ESWL.
- Do not eat or drink the day of your ESWL (including gum or candy).
- Avoid alcohol for 24 hours prior to your ESWL.
- If you take medication daily for high blood pressure or other medical conditions, take them with only a small sip of water.
- Tell your doctor if you take antibiotics before dental work. You may need to take them before your ESWL as well.
- Wear comfortable, loose-fitting clothes.
- Bring a friend or family member to drive you home. You will not be able to drive yourself home after your ESWL.

**Procedure Description**

When the sound waves strike the stones, it can cause discomfort or pain. For this reason, you will be given medication prior to your ESWL. You may be given **general anesthesia** so that you are unconscious during the procedure, or you may be given **epidural anesthesia**. Epidural anesthesia is given through a very small tube which is inserted into the lower part of your spinal canal. This type of anesthesia numbs your body from the waist down.

The sound waves travel best through water. During your ESWL, you will be placed in a tub of water, or you will lie on a water-filled cushion. If your procedure is done using a tub of water, you may be placed in a harness and lowered gently into the water, or you may sit on a chair in the tub of water. Your upper body will remain out of the water.

X-ray or **ultrasound** (a test that uses high-frequency sound waves to produce images of the inside of your body) will be used. Your doctor can see where your stones are and aim the sound waves precisely at the stones. Your ESWL may last from thirty minutes to one hour.

After your ESWL, you will remain in the recovery area for two or three hours so that your temperature and heart rate can be monitored. In most cases, you will go home the same day.

In some cases, your doctor may place a **stent** (small thin tube) into a **ureter** (duct that leads from kidneys to the bladder) to help the pieces of stone pass from your body. This procedure can be performed while you are still anesthetized from your ESWL. Your doctor will pass the stent through your **urethra** (the channel that carries urine from your body), up through the bladder.

If a stent is placed, it will be removed at another appointment after the pieces of your stone have passed.

**Follow-Up Instructions**

- You will need to drink plenty of water and other fluids. This helps the small pieces of stones pass with your urine.
- You may eat your usual diet.
- You should avoid medications that can thin your blood such as aspirin, medications that
contain aspirin, or arthritis medications.
- You may see a small amount of blood in your urine for several days following your ESWL. Contact your doctor if the bleeding seems excessive.
- You will be given medication for discomfort or pain. Take it as needed. If your pain worsens or becomes severe, contact your doctor immediately.

For More Information

For more information on ESWL, please contact the following resources:

**American Urological Association**
1000 Corporate Boulevard
Linthicum, MD 21090
Phone: (410) 689-3700
Fax: (410) 689-3800
E-Mail: auafoundation@auafoundation.org
Web: http://www.UrologyHealth.org

**National Kidney and Urologic Diseases Information Clearinghouse**
National Institutes of Health
3 Information Way
Bethesda, MD 20892
Toll-Free: (800) 891–5390
Fax: (703) 738–4929
E-Mail: nkudic@info.niddk.nih.gov