



Urinary tract stones Care

I、 What are urinary tract stones?

Urinary tract stones are common urinary diseases, with unknown etiology. They may occur at the kidney, ureter, bladder, or urethra where urine pass through. It may be associated with genetics, diet or drugs. The injury caused by the urinary stones may be symptomatic or asymptomatic.

There are different sizes of the stones. They may present as sandy stones or as large as staghorn stones to occupy the whole kidney. Sometimes, an apple-like vesical stone can be found. It may cause renal function loss if it is not treated in time. Therefore, it is important for the publics to know the urinary tracts stones and associated treatment.

II、 The symptoms of stones

- A. Pain: urinary tract stones may cause flank pain, backache, testicular pain, abdominal fullness and pain.
- B. Infections: stones may cause infection, such as fever, nausea, vomiting, urinary frequency, hematuria, dysuria, painful urination and other symptoms.
- C. Obstruction: urinary tract stones may cause urinary tract obstruction to induce hydronephrosis and renal function impairment.

To deliver intelligent and holistic medicine and to provide the best healthcare
Compassion Quality Innovation Accountability

All information above has been reviewed by genitourinary specialists
Edited and published by the Department of Nursing,
Taichung Veterans General Hospital

III、 Medical treatment

- A. Drink 2500 ~ 3000cc every day, and maintain daily urine output more than 2000ml. It is advised to increase water intake if sweating.
- B. To control infection with antibiotics, and Use analgesics to control pain.
- C. Proper exercise, jogging, swimming, up and down stairs or walking. to enhance stone expulsion and prevent stone recurrence.

IV、 Surgical treatment

According to the patient's condition and needs, after discuss with the physicians, the following treatment will be recommended.

- A. Extracorporeal shock wave lithotripsy (ESWL): The extracorporeal shock wave lithotripsy machines produce waves to destroy the stones that are less than 2 cm of crushed and located at the kidney or upper ureter.
- B. Ureteroscopic lithotripsy: The endoscope through the urethra into the bladder and ureter, after examine the ureter, to destroy the stone in lithotripsy machine.
- C. Percutaneous Nephrostomy (PCN): For the patient with upper urinary tract obstruction, to drain urine temporarily. It is performed under local anesthesia by the radiologist. The procedure is guided by ultrasound or X-ray, by the twelfth rib around the lower back near the waist, from one or both sides of the skin puncture, then the catheter is put into the renal pelvis.
- D. Percutaneous nephrostomy lithotripsy (PCNL): The operation is performed in the operation room. After percutaneous by the radiologist, the urologist put nephroscopy tunnel and fragment the stones with ultrasound, laser or shock wave. The stones are removed by forceps

and nephrostomy tube is induced. PCNL is indicated in larger renal or upper ureter stone.

V. Preoperative preparations

- A. Complete operation and anesthesia consent.
- B. Enema before sleep as ordered.
- C. Preoperative fasting after midnight, including food and water.

VI. Nurse care after the surgery

- A. There are intravenous catheter, foley or other drainage tubes. To keep all catheters patent is important.
- B. To start and intake by medical order, deep breathe, and cough are encouraged to enhance lung expansion.
- C. Ambulation as soon as possible, it is helpful for the prevention of complications.
- D. If the wounds get wet, inform nurses to change the dressing.
- E. If the wound pain occurs, inform nurses to give you analgesics.
- F. Post operation urine color is usually light red, and will gradually become clear. It is needed to drink 2000cc-3000cc per day, to facilitate stone expulsion.
- G. Regular OPD follow up: If the stones recur, stone analysis or metabolic survey may be needed.

VII. The prevention of stones

- A. Drink plenty of water, a pinch of salt reduction.
- B. Do not over distend your bladder; not a partial eclipse.
- C. Choose low fat, low-calorie foods.
- D. Obese people should attempt to lose weight.
- E. Intake sufficient water, at least 2000 ~ 3000cc per day.

VIII、 Conclusion

Urinary tract stones are a common disease and are prone to relapse. Therefore, if you have stone-related symptoms (such as severe pain or hematuria, etc.), you should seek medical service as soon as possible. According to the results, appropriate treatment methods and dietary hygiene education should be given to avoid recurrence.

XI、 Reference

Wu, M. S., Jhang, J. Y. (2021) , Nursing care of patients with ureteral stone undergoing ureterorenoscopic lithotripsy. *Journal of National Taichung University of Science and Technology*, 8(1), 85–96。

[https://doi.org/10.6902/JNTUST.202112_8\(1\).0005](https://doi.org/10.6902/JNTUST.202112_8(1).0005)

Taiwan Urological Association (2022). *Taiwan urological association guidelines*. <https://www.tua.org.tw/tua/tw/latest-news/67-publicitions>

Let's take the quiz to make sure you understand

1.Risk factors for stones include insufficient fluid intake, unbalanced diet, long-term immobility, genetics, and urinary tract obstruction or inflammation.

Yes No Don't know

2.Extracorporeal shock wave lithotripsy uses an extracorporeal shock wave lithotripsy to generate shock waves to break up stones in the kidneys and upper ureters.

Yes No Don't know

3.Urinary tract stones are a common disease and are easy to recur. If you have severe waist pain or hematuria, you can further observe.

Yes No Don't know

4.One of the ways to prevent stones is to drink enough water every day, at least 2500~3000 c.c.

Yes No Don't know

5.Percutaneous nephrostomy lithotripsy needs to be performed in the operating room and is often used to treat larger kidney stones and upper ureteral stones.

Yes No Don't know