Kidney stone
Skin
Irrigation fluid
Eyepiece
Irrigation drain
Ultrasonic probe
Nephroscope
Kidney stone

Figure 26–4  Percutaneous ultrasonic lithotripsy. A nephroscope is inserted into the renal pelvis, and ultrasonic waves are used to fragment the stone. The fragments then are removed through the nephroscope.

moved through the nephroscope. Laser lithotripsy is an alternative to ultrasonic lithotripsy. Laser beams are used to disintegrate the stone, without damaging soft tissue. A nephroscope or a ureteroscope (passed up the ureter from the bladder during cystoscopy) is used to guide the laser probe into direct contact with the stone (Meeker & Rothrock, 1999).

A double J stent may be inserted into the affected ureter to maintain its patency following ESWL or other lithotripsy procedures. See Box 26–7 for nursing care of the client with a ureteral stent.

On rare occasions, surgical intervention is necessary to remove a calculus in the renal pelvis or ureter. Ureterolithotomy is incision in the affected ureter to remove a calculus. Pyelolithotomy is incision into and removal of a stone from the kidney pelvis. A staghorn calculus which invades the calices and renal parenchyma, may require a nephrolithotomy for removal. See Chapter 7 for care of the surgical client.

Bladder stones may be removed using an instrument passed through a cystoscope to crush the stones. The remaining stone fragments are then irrigated out of the bladder using an acid solution to counteract the alkalinity that precipitated stone formation.

Health Promotion

Discuss the importance of maintaining an adequate fluid intake with all clients. Stress the need to increase fluid intake during warm weather and strenuous exercise or physical labor. Discuss the relationship between weight-bearing activity and retention of calcium in the bones. Encourage all clients to remain as physically active as possible to prevent bone resorption and possible hypercalcemia.

Instruct clients with known gout to maintain a generous fluid intake so as to produce at least 2 L of urine every day. Discuss the risk of lithiasis with clients who have frequent UTIs, and teach measures to reduce the incidence of UTI and the risk for lithiasis.