

Treatment Options

Cystoscopy with Ureteral Stent or Placement of a Percutaneous Nephrostomy Tube — Used for Emergent Intervention in the Setting of:

- Urinary tract infection and obstructing stone
- Elevated creatinine due to obstructing stone

ESWL or Uteroscopy with Laser Lithotripsy

Used to treat stones in the ureter and selected renal stones < 2 cm ESWL

Percutaneous Ultrasonic Lithotripsy

- Used for renal stones > 2 cm in the renal pelvis, mid and upper pole calyces, and >1.5 cm in the lower pole

Sources: American Foundation of Urologic Disease; Urology Times; Journal of Urology

Generic Dietary Recommendations for Patients with Stones

- Fluid intake — 8 glasses of water a day
- Minimize sodium intake
- Limit of one serving of animal protein intake a day

The Massachusetts General Hospital Kidney Stone Program offers a multidisciplinary approach to treatment and management of kidney stones. Our team includes:

- Nephrologists
- Urologists
- Interventional Radiologists
- Anesthesia Pain Specialists
- Registered Dieticians
- Infectious Disease Specialists

Massachusetts General Hospital operates Lithotripsy services to meet the needs of our patients.

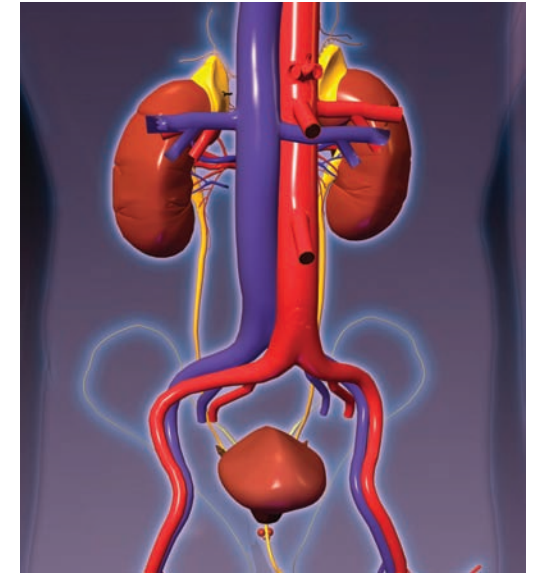
We are available 24 hours a day for consultations and referrals. We are committed to working in partnership with referring physicians to provide your patients the highest quality care, and to keep you informed throughout the process of your patient's treatments, results and recommendations for ongoing care.

KIDNEY STONE PROGRAM

STEPHEN DRETTLER, MD
617-726-3512

DIANNE SACCO, MD
617-726-3760

BRIAN EISNER, MD
617-726-3512



Kidney Stone Program

A clinical resource tool to assist you in the management of patients with kidney stones.



MASSACHUSETTS
GENERAL HOSPITAL

KIDNEY STONE REFERRAL AND EVALUATION GUIDELINES

NEPHROLITHIASIS: KIDNEY STONES: Kidney stones usually become symptomatic when they are passing through the ureter.

Acute Presentation:

- Colicky flank pain that may radiate to the lower abdomen/groin (scrotum in males)
- Nausea, vomiting
- Hematuria or microscopic hematuria
- Possible fever

Diagnostic Evaluation:

- CT scans without contrast are the gold standard for diagnosing stones
- Serum creatinine and WBC
- Urinalysis and culture

Types of Kidney Stones:

- Calcium Oxalate (75%)
- Struvite (11%)
- Uric Acid (8%)
- Calcium Phosphate (5%)
- Other (1%)



© 2008 Steven Fruitsmaak



MASSACHUSETTS
GENERAL HOSPITAL

KIDNEY STONE PROGRAM

STEPHEN DRETHER, MD 617-726-3512
DIANNE SACCO, MD 617-726-3760
BRIAN EISNER, MD 617-726-3512

Urgent Referral

Patient Presentation

- Febrile to $> 101.5^{\circ}\text{F}$
- Elevated WBC — usually > 12.0
- Elevated creatinine > 1.5

Stone Size and Location

Any size stone obstructing the kidney/ureter

Steps for Patient Treatment After Radiologic and Laboratory Studies

- Urology consult and admission
- Start antibiotics and IV fluids
- No oral intake in preparation for an operative procedure

Possible Interventions

- Cystoscopy and stent placement
- Percutaneous nephrostomy tube
- Stone extraction

Rapid Referral

Patient Presentation

- Pain not adequately controlled on oral analgesics
- More than one presentation to the Emergency Department
- Perinephric stranding on CT scan
- Afebrile, normal creatinine and WBC

Stone Size and Location

Any size stone not obstructing the kidney/ureter

Steps for Patient Treatment After Radiologic and Laboratory Studies

- Urology consult and admission
- Pain medication
- Monitoring

Possible Interventions

- Cystoscopy and stent placement
- Ureteroscopy/laser lithotripsy
- ESWL

Elective Referral

Patient Presentation

- Pain controlled on oral analgesics
- First presentation to the Emergency Department
- Afebrile, normal creatinine and WBC

Stone Size and Location

- < 5 mm stone with or without hydronephrosis
- Renal stone without hydronephrosis
- > 5 mm stone without hydronephrosis

Steps for Patient Treatment After Radiologic and Laboratory Studies

- Discharge to home
- Pain medication
- Flomax 0.4 mg daily or another alpha blocker, i.e. Hytrin 5 mg daily

Possible Interventions

Follow up with Urology in 7-14 days except in cases of severe pain