BCEM Sample Case #2 – Nephrolithiasis

Patient: #1
Date of ED Service: 8/13/1998 **Age:** 24
Admitting Complaint: Chills and Back Pain
Discharge Diagnosis: Nephrolithiasis

IDENTIFYING DATE
This is a 24 year-old male.

CHIEF COMPLAINT
Chills and back pain.

HISTORY OF THE PRESENT ILLNESS

This 24 year-old male is an out-of-town visitor from Madrid, Spain. He was seen in this Emergency Department approximately 36 hours prior to admission, at that time complaining of Dysuria. A urinalysis was performed at that time and was unremarkable, and following a Negative physical examination with nothing further found, the diagnosis of nonspecific urethritis was made and the patient was treated with 1 gram of azithromycin p.o. and discharged.

The patient states that the pain initially subsided. However, late this afternoon he developed left-sided costovertebral angle and flank pain, associated with nausea and vomiting. The patient was unsure as to the development of fever, but he did have chills and sweats. At this time he denies dysuria and complains predominantly of pain to the posterior back and flank. He states that there is some radiation of pain anteriorly. However, he does not localize that pain well. He denies hematuria or penile discharge. He states he still has some pain, which he experiences right at the tip of his penis. He states that there was no blood in his vomitus. He denies history of alcohol intake or of peptic ulcer disease. He states that his diet has been changes as a result of his travels, but he denies diarrhea or abdominal pain.

PAST MEDICAL HISTORY

Positive only for left shoulder surgery approximately six years prior to admission.

REVIEW OF SYSTEMS

Entirely negative otherwise.

PERSONAL & SOCIAL HISTORY

The patient lives in Madrid. He is a student. He is traveling with his family, who are here on business.

PHYSICAL EXAMINATION

- VITAL SIGNS: The patient is afebrile with a temperature of 98.5. His blood pressure is 132/82. His pulse is 93 and the respiratory rate is 20.
- SKIN: Color is good. The skin is dry; there is no diaphoresis at this time.
- BACK: Positive CVA tenderness on the left, both to punch and even to palpation.
- ABDOMEN: Scattered bowel sounds, but is otherwise soft and non-tender. There is no hepatosplenomegaly, rebound or guarding. No masses.
- GENITALIA: Normal uncircumcised male, without penile lesions. The testes are bilaterally descended and non-tender. There is no blood seen at the meatus, and there is no urethral discharge noted.

LABORATORY

WBC count is 11.1, HGB 15.3, HCT 45.9. Chemistries revealed sodium of 138, potassium 3.5, chloride 95, CO2 28, BUN 22, creatinine 1.6, glucose 144. The urine was reported by the nurse who accepted the specimen from the patient as being very cloudy and foul-smelling. However, the results subsequently returned from the lab as showing a negative dipstick, including negative for nitrates and leukocyte esterase and blood, pH of 8.0 with a specific gravity of 1.015. The microscopic examination was negative for WBC's but did show 0-2 RBC's per high powered field, and 4+ amorphous urates.

EMERGENCY DEPARTMENT COURSE

The patient was initially ambulatory into the Emergency Department complaining of pain, but did not appear to be in acute distress. Subsequently, however, he did develop more pain along with pallor and diaphoresis. At that point she was medicated with Demerol, a total of 50 mg. IV push and droperidol 2.5 mg. IV push, with good results. Given the setting of recent dysuria, chills and sweats, CVA tenderness, foul-smelling and cloudy urine, a presumptive diagnosis of pyelonephritis was made. The patient was treated with 1 gm. Of ceftriaxone IV piggyback. This was done despite the rarity of pyelonephritis in young males without known GU anomalics or indwelling catheters.

Subsequently, the peripheral WBC returned as normal, and the UA results as above. At that point, the chem.-7 was added on in preparation for a further study. When the BUN and creatinine returned, an intravenous pyelogram was obtained.

The patient had informed consent and was injected with 75 cc's of nonionic contrast material by me, after a scout film was obtained. He tolerated the procedure well. Findings (as read by me) included a normal uptake of dye with appropriate spillage into the collecting system in the right. However, the patient was in the Emergency Department for 4-5 hours until the dye first manifested in the renal pelvis on the left, with only a nephrogram having been observed initially.

In the ensuing several hours, the patient subsequently developed a dye column, which clearly revealed a high grade obstruction at the ureterovesicualr junction on the left, with approximately a 4.5 to 5.0 mm. Radiopaque density, felt to probably be a stone, noted to be obstructing flow. The patient required subsequent re medication for pain, and was given additional IV push

droperidol and Dilaudid 1 mg. with good symptomatic relief.

Because of the high-grade obstruction, and the fact that the patient was from out-of-town and would not be able to undergo follow-up in a timely fashion with his own physician-and because

this was the second EF visit for this problem-it was felt prudent to obtain urology consultation in the Emergency Department.

Dr. X, the panel urologist, kindly consulted to the Emergency Department, evaluated the patient and concurred with the diagnosis and treatment rendered until then. He felt this was a "passable" stone. Accordingly, the patient is discharged at his direction.

ASSESMENT

Ureteral colic, nephrolithiasis, and high-grade obstruction, left kidney.

PLAN

The patient has been a dispensed urine strainer. He has been given a prescription for analgesics by Dr. Q. A follow-up appointment has been made for him in Dr. V's office on Monday 8/10/98 at 2 P.M. He has been advised to push fluids, strain his urine, and take the analgesics PRN. He is further advised to return to the ED or to contact Dr. V sooner should he develop a fever, intractable pain or vomiting.

CASE DISCUSSION

This case illustrates several issues, the first being the necessary observation that not all dysuria in a young male should lead one to the diagnosis of an STD. The second is the illustration of how

something so common-amorphous urates-can lead one to jump to the conclusion that the "cloudy urine" represents an infection in the urinary tract (albeit there is the possibility of an infection behind an obstructing stone). Once the minimal cellular findings on the urinalysis returned, however, (0-2 RBC's), the proper diagnostic procedure was performed and the diagnosis was established. Interestingly, the lab in our hospital reports out a creatinine of >1.5 as being abnormally high, probably a reflection of the elderly population we generally admit. The x-ray technician initially was reluctant to do the IVP because of the "high" creatinine of 1.6 in this patient, who was in actuality a normal young man with a large muscle mass.

Applicant's Signature: _____