

Journal Club

EVALUATING THE SHY BLADDER

by Dr. Robert J. Golden, MJX, F.A.C.S.

Recent Department of Transportation (DOT) and Department of Health and Human Services (DHHS) guidelines for handling donors unable to provide an adequate urine specimen have highlighted the need for parameters for the evaluation of the "shy bladder" situation.



For the purposes of our discussion, a shy bladder situation shall be regarded as any case where a donor, after having two hours and the opportunity to consume up to

24 ounces of fluid, fails to produce an adequate urine specimen (usually a total of 45 mL.)

The regulations require that the medical review officer (MRO) refer any such individual for evaluation to develop pertinent information concerning whether the individual's inability to provide a specimen is genuine or constitutes a *refusal to test*. Because a refusal is generally met with the same repercussions as a positive test result, the thoroughness of the evaluation is important.

After the shy bladder examination is completed, the MRO is required to report his or her conclusions to the employer in writing.

How should an MRO proceed with such an evaluation? What constitutes a genuine condition for shy bladder function? When should a referral to a urologist be considered?

BASIC SCIENCE

The process of voiding is a complex function. The detrusor muscle contracts while the internal and external sphincters relax. The pressure inside the bladder increases to a critical point to overcome the intraurethral pressure until the bladder is empty. The detrusor muscle then relaxes and the sphincters contract.

The understanding of urinary bladder function has increased significantly over the past 10 years. For the purposes of a "shy bladder" discussion, we can generalize about pharmacologic receptors, knowing that most of

these receptors are located throughout the bladder muscle, bladder neck and external sphincter (see figure 1, page 10).

The bladder muscle (detrusor muscle) is primarily cholinergic and stimulated by reflex afferent receptors sensitive to bladder distention. The neck is mostly alpha adrenergic and serves as the involuntary muscle. This muscle is present in all males and is responsible for the inability to void in the presence of others. It makes sense that any pharmacologic agent that stimulates this "internal sphincter" aggravates the inability to void (pseudoephedrine, epinephrine, etc).

Anticholinergics (cold preparations) prevent the detrusor muscle from contracting forcefully against the bladder outlet. The external sphincter or voluntary muscle is located beneath the prostate and is composed of skeletal muscle. Its relevance to shy bladder is minimal.

PATHOPHYSIOLOGY

"Shy bladder" is a lay term generally applied to a male who is unable to void on command or in public restrooms. The male client will describe a chronic "non-competitive" stream throughout his life. The etiology is unknown but probably involves a predominance of the sympathetic over the parasympathetic discharges centrally. The bladder neck (alpha adrenergic fibers) in the "shy bladder" male is well developed and can even be noted to be hypertrophied cystoscopically.

The male client who cannot void due to true "shy bladder" should be distinguished from a male or female who simply refuses to void. During times of extreme stress, the external sphincter (skeletal cholinergic fibers) can be very tight and keep the patient from voiding, but this should be transient and not chronic.

MEDICAL HISTORY

There are significant pathologic processes that directly affect voiding. Neurologic dysfunction (spinal cord injury, multiple sclerosis), diabetes, infection, prostatic urethra! Obstruction (benign or malignant), urethral stric-

(Evaluating The Shy Bladder, Continued from page 8)

tures (traumatic or infections) all can interfere with the process of voiding. If the patient's history, voiding pattern, or urinalysis suggest an organic etiology, urologic referral is indicated.

When a patient is referred to a urologist for voiding dysfunction, the medical history can be very revealing and helpful in narrowing down the differential diagnosis. If the caliber of the urine stream is variable, a true shy bladder is a possibility. A history of trauma or urethritis may indicate a stricture. A shy bladder patient may have had previous urologic instrumentation to rule out urethral stricture.

Gross hematuria, urgency, straining to start, and nocturia are associated with prostatic obstruction rather than a functional obstruction. Prostatitis, prostatic congestion and prostatic pain (prostatodynia) can cause obstruction in severe cases; however, irritation and dull pain are the predominate symptoms. A history of neurologic trauma, surgery, neurologic disorder and metabolic disease (diabetes) resulting in a neuropathy is extremely important in order to sort out the potential neurogenic bladder.

PHYSICAL EXAMINATION

The urologic physical examination of the external genitalia is usually unrevealing except for the patient with urethral meatal stenosis or stricture and the abnormal prostate. A cystoscopy, retrograde urethrogram and formal urodynamic testing (cystometrogram, flow rate, sphincter electromyography, etc.) can be employed to extensively evaluate the complicated patient

Any MRO or general physician can evaluate a client, and in most cases can differentiate between a genuine shy bladder and malingerer. If physical abnormalities or historical inconsistencies arise, referral to a urologist for further evaluation is; suggested. In either case, proper record-keeping and documentation are essential. Q

(Dr. Robert J. Golden, M.D., F-A.C.S, is a Fellow of the American College of Surgeons and a Diplomate of the American Board of Urology. He is in private practice in Spokane, WA)

SAMPLE QUESTIONS TO ASK THE "SHY BLADDER" PATIENT

1. How would you described your urinary stream?
 - a) always good
 - b) always weak
 - c) sometimes weak/sometimes good
2. Is there any history of trauma to the urethra or infection in the urethra (gonorrhea or chlamydia)?
3. Have you had a previous urologic surgery or instrumentation?
4. Have you seen any blood in your urine?
5. Do you have trouble postponing urination when the feeling arises?
6. Do you consistently strain to start your urine stream?
7. How many times do you get up at night to pass urine?
8. Is your urine stream better or worse in the morning?
9. Have you ever had a urine infection?
10. Do you smoke cigarettes?
11. Is there a family history of prostate cancer (in either your mother's family or your father's family)?
12. Are you on any medication (prescribed or non-prescribed), including over the counter medications
13. Is there any activity (eating, bowel movement, exercising) or foods (caffeine, citrus juices, alcohol, spicy dishes) which worsen or improve your urinary symptoms?
14. Have you ever suffered neurologic trauma or had surgery (abdominal or back) during which nerves could have been traumatized?
15. Do you have any diseases that affect your nerves (multiple sclerosis, diabetes, stroke)?