

CLINICAL PRACTICE

Unique predisposing factors for male urinary tract infections

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Abstract

Purpose: While naturally occurring male host defense mechanisms prevent many urinary tract infections (UTI), this article describes two purposeful forms of urethral play (UP) that could be unique predisposing factors to increased UTI susceptibility.

Data sources: Medical literature has documented unconventional penile and urethral activities since the mid 1700s. In a recent web-based study, Rinard et al. report 74 comments from national and international respondents performing UP: various websites also validate UP practice.

Conclusions: Respondents reported inserting liquids and foreign objects into the urethra. Inserted liquids included water, hot candle wax, baby oil, after-shave lotions, and dental gel. Foreign objects frequently mentioned were the insertion of smooth stainless steel surgical dilators often used in surgical urological procedures; the respondents and the websites call this "urethral sounding." These practices were used to "aid erections and sexual experimentation, enlarge the urethra, and stimulate their partner." Other respondents discussed catheter insertion. Other objects such as cotton-tipped swabs, spoons, and pencils, were also inserted. UTIs have been reported as a result of UP.

Implications for practice: Nurse practitioners' knowledge of these seemingly unconventional urethral activities requires a thorough assessment and history for pediatric and adult males presenting with new, recurrent, or unresolved UTI symptoms, as well as applicable health education.

When there is "the presence of microbial pathogens within the urinary tract," urinary tract infections (UTIs) become one of the most common bacterial infections encountered in a clinical practice (Foxman, 2002, p. 1). UTIs are also costly because of the large number of office and emergency department visits, as well as hospitalizations associated with it (Bass, Jarvis, & Mitchel, 2003). Yet, males are not as susceptible to UTIs because of the host defense mechanisms that prevent bacterial invasion or eliminate bacteria that reach the bladder. The "presence of an elongated urethra (enhanced mechanical barrier) and the antibacterial nature of prostatic secretions combine to reduce the incidence of UTI in this gender" (Durwood, 2008, p. 2). Male circumcised infants also tend to have fewer UTIs (Foxman, 2002). UTIs in men are usually encountered in those older than 50 years of age with prostate concerns, hospitalization, and catheteriza-

tions while in long-term care facilities. Though not as well known and common is that other ages in the male life span are also affected. According to the National Ambulatory Medical Care Survey (as cited by Bass et al., 2003), 2% of boys will experience UTIs before the age of 10, and 15% of men before the age of 35.

Purposes of this article are to summarize two types of male urinary activities (liquid and foreign object insertions) described as urethral "play" (UP), and discuss one complication (UTI) that occurs from these unique predisposing activities. Nurse practitioners (NPs) need to be aware of these unconventional activities and consider asking exploratory, applicable questions to detect these additional risk factors for possible uncomplicated or complicated UTI in males. Knowledge of these seemingly unconventional urethral activities could lead to a more thorough assessment and history of events for pediatric

and adult males, as well as prompt treatment for new, recurrent, or unresolved symptoms of UTI. Considering the available web-based literature that further documents these activities (www.bmezone.com; Wikipedia.org; www.pierceit.com.uk/piercing/info/sounding), these men could be at high risk for delays in appropriate treatment of UTI complications by NPs. Proactive preventive healthcare education is also important (Hogan et al., 2010).

Literature review

The medical literature is rich with case history information about four types of unusual male genitourinary tract activities since the mid-1700s. These types include “embedding (a) foreign objects and/or (b) liquids subcutaneously into penile tissue, as well as inserting (c) liquids and/or (d) foreign objects into the urethra” (Rinard, 2010, 1326; Stankov, Ivanovski, & Popov, 2009). Based on several medical reviews in the mid- to late 1800s and early 1900s, Dakin published a book in 1948 of more than 1000 of these unusual urological case reports.

This article will concentrate on the latter two unconventional types of genitourinary tract practices, the purposeful insertion of liquids and or foreign objects into the urethra, performed primarily for sexual stimulation.

Foreign objects as penile insertions

van Ophoven and deKernion (2000) provide an excellent historical synopsis based on approximately 800 single cases of foreign object insertions in the urethra; they state the review “defies the imagination” (p. 274). Many different types of objects are described, including spoons, needles, hairpins, pencils/ball point pens, various cables, or wire (Pec et al., 1992; Trehan, Haroon, Memon, & Turner, 2007); a drill bit (Brison, Lamba, Jafary, Bhalla, & Baker, 2006); and even plant stalks such as straw or animals such as a tiny decapitated snake (van Ophoven & deKernion, 2000).

Recently, Hogan et al. (2010) conducted a web-based study about men with genital piercings (GP) and included a survey question inquiring about foreign object insertions into the urethra (Rinard et al., 2010). Website information (www.pierceit.co.uk) has posted testimonies stating that once males have GP, they may want “another level” of excitement and/or sensation. A subsample of 74 comments was received in Rinard et al.’s study, with many of the respondents calling this activity “urethral play (UP).” Demographics of this subsample are summarized in Sidebar I. Comments rather than respondents were counted because respondents often reported more than one UP activity. Initiation of UP seemed to start

during later teens with experimentation as an underlying theme with these inserts; the UP was performed not only by themselves, but also by their sexual partners. One respondent describes “starting at 10 years of age and continues to perform this 50 year old practice of urethral insertions” (Rinard et al., 2010, p. 1328).

The most frequently mentioned foreign objects to be inserted in that study were various types of urethral sounds ($n = 33$) for more pleasurable sexual stimulation (Rinard et al., 2010). Often the term “sounding” was used in the respondent’s description of the activity (Urethral Sound information, see Sidebar II). By “inserting them halfway into the glans,” the urethral sounds were used to “aid erections, enlarge the urethra, experiment sexually, and stimulate their partner” (Rinard et al., 2010, p. 1328). Four other respondents described the insertion of urinary catheters. Urinary catheters were also named on the websites as another type of “sounding” device that could be introduced deeper, twisted around in the urethra, and even move into the bladder, yet were used for the same purposes (Wikipedia.org). Other objects (26 comments) men had inserted into their urethras included cotton-tipped applicators/plastic tubes and pencils/erasers/permanent markers, as well as a knitting/crochet needle, regular needle, paintbrush, food, pills, vinyl string, plastic spoon, glow stick, copper wire, chopsticks, thermometer, 10-mm bullet, electrical wire, and a finger.

Penile liquid insertions

While not as common historically, Hutchinson (1913) and Katzen (1935) report the insertion of liquids such as candle, bee, or sealing wax into the urethra. Rinard et al. (2010) report 11 respondents who described the insertion of liquids into their urethra; solutions included water ($n = 5$), hot wax ($n = 2$), candle wax, baby oil, after-shave lotion, and dental gel. No other descriptive information was self-reported.

Complications

The variety of complications from these UP practices certainly has the potential of predisposing the male to a wide array of disorders. Sometimes calculus formation can be a phenomenon in which some of these smaller foreign bodies can be detected (van Ophoven & deKernion, 2000). From the 74 comments in Rinard et al.’s (2010) study about inserting liquids and objects into the male urethra, only 10 respondents mentioned any urinary tract problems; five UTIs were mentioned, four reported urethral irritations, and one stated he had “some major and minor bleeding that [were not] serious.” No

comments about seeking medical care for these complications were cited (Rinard et al., 2010).

Approaches for care with male UTI

The importance of dialogue

Body or GP, or even UP, may not be a personal lifestyle, but NP knowledge of these activities can increase the effectiveness of our medical management, treatment, and health teaching. The authors have found that both men and women with GPs (and general body piercings) are open and willing to talk about their piercings; NP acknowledgment, rather than avoidance, “demonstrates acceptance and caring” to build communication (Hogan et al., 2010; Young et al., 2008, p. 135). Certainly, there would be considerable individual diversity for anyone in this subgroup using UP activities so our investigation for further information about UP will require not only listening for clues from the patient, but also thinking about relevant questions to ask, while using an open, nonjudgmental approach.

UTI management

Four main medical management priorities are suggested if the NP suspects UP.

Importance of a thorough history. Because UP activities seek to improve sexual stimulation or experimentation, certainly information concerning patients’ sexual maturation and function is relevant. A review of the medical history should include any previous episodes of genitourinary surgeries, or procedures, as well as any previous episodes of sexually transmitted infections or chronic illnesses. Genitourinary cancers, cardiac disease, diabetes, or neurovascular impairment leading to erectile dysfunction will be pertinent data. Personal and social histories are also important; concerns about sexual practices and partners, genital appearance or past trauma, reproductive function, and the use of tobacco, alcohol, or illicit drugs should be documented (Seidel, Ball, Dains, & Benedict, 2006). Noting the history of present illness is also integral in understanding the symptoms experienced and duration of episode, onset, location, exacerbating or relieving factors, and any remedies or medications that the patient may have already tried for relief (Seidel et al., 2006).

A physical examination. The physical examination may provide evidence of UP and a likely physiologic location of the cause of UTI. UP may traumatize the urethra enough to have microscopic blood, and/or urethritis without actual infection. Actual infections (urethritis, cystitis, prostatitis) are usually associated with urinary frequency and dysuria; however, if there is just a local ir-

ritation of the bladder/urethra, there may be an absence of fever (Bass et al., 2003). The presence of a fever as well as flank/abdominal/low back pain are more common with upper tract infections. Diagnostics such as microscopic urinalysis, complete blood count (CBC) with differential, and culture and sensitivity studies are the least costly and invasive in confirming diagnosis. Imaging studies are usually not needed in a simple, uncomplicated UTI; however, with the above symptoms, imaging may be warranted in the presence of more severe complications, including renal abscess, genitourinary obstruction, or abnormality (Aliotta & Alvero, 2010).

Antimicrobial agent selection and duration of therapy. The presence of leukocytes and/or positive urine culture determines selected antimicrobial therapy whether upper or lower tract infection symptoms are present. It is estimated that 95% of causative pathogens in UTI are members of the *Enterobacteriaceae* and most commonly *Escherichia coli* (Aliotta & Alvero, 2010). Duration of therapy is dependent upon recommended clinical guidelines, severity of symptoms, safety, cost, and medication compliance.

Most likely the UTI would be considered uncomplicated, but this is dependent on the predisposing factors to infection and the number of UP episodes per year. UTIs generally have an excellent prognosis, so those with persistent, unresolved infections after appropriate therapy or those experiencing recurrent infections might need further evaluation and referral to an urologist for more tests to identify structural or functional complications.

Applicable health education about UP. A frequent finding about these potential at-risk groups (those with GP and/or performing UP) is that they continue to seek information about their health care from the Internet and their piercers rather than medical personnel (Hogan et al., 2010; Rinard et al., 2010; Young et al., 2010). As stated above, no respondent comments were included about seeking medical care for UP complications (Rinard et al., 2010), so it is important to inquire about the person’s health-seeking behavior. Reviewing where this population is receiving their information is important, as it is not always in the same places that healthcare providers seek their healthcare information.

Ask about use of any over-the-counter (OTC) remedies when symptoms are present. Emphasize urination to wash out the bacteria from the urinary tract. An adequate fluid intake should promote an urge to urinate every 3 h.

Patient instructions should include minimizing risk of infections from insertions during UP such as good hand washing, using condoms and safe sexual practices, avoiding fecal contamination, and using heat or alcohol for sterilization of insertion devices. Additionally discuss completing prescribed antimicrobial therapy, proper use

of any prescribed or OTC remedies for urinary discomfort, and additional symptomology such as fever, chills, malaise, hematuria, or ongoing discomfort. Follow-up indications, planning, and expectations should be clear.

Pediatric implications

Identifying the chronological age and corresponding developmental age of the child is vital for care providers when assessing children and adolescents for signs of UP, whether the insertion is by the patient or potential physical abuser. This is important so that a developmentally appropriate plan of care can be designed to meet the child and their significant others' unique needs.

Developmental life stages are not rigid categories, but rather guidelines; development can be a slow, subtle process, or occur rapidly. Aspects of growth and development may overlap in previous or subsequent stages. Children in the early developmental stages frequently explore their bodily orifices through touching and inserting objects with no concept of the short- and long-term effects (Burns, Dunn, Brady, Starr, & Blosser, 2009). If exploration of their genitals has brought pleasurable feelings in the past, older children and adolescents from 7 to 12 years in the Concrete Operational Stage and 13 years and older in the Formal Operational Stage, may continue behaviors initiated by self or others, and perhaps seek additional, more frequent experiences, depending on psychosocial and environmental events.

Early indications of potential problems that the pediatric care provider should investigate include frequent UTI, actual and/or subtle signs of physical abuse, as well as parental concerns about masturbation and sexual exploration, or sources of information about sexual activity. Additional assessments could include detailed family history, specific laboratory studies (screening UA, follow-up and repeat UA after initial antimicrobial therapy), or x-rays (such as voiding cystourethrogram) might be needed if no resolution or repeat occurrences to screen for congenital, structural abnormalities.

Treatment

Treatment outcomes depend on adhering to age-appropriate clinical guidelines for best practice in management of UTI, regardless of etiology. Yet, the overwhelming increase in bacterial resistance of antibiotics and the cost challenges the treatment of UTI (Aliotta & Alvero, 2010). Inexpensive antimicrobials such as trimethoprim plus sulfonamide are demonstrating less clinical success due to resistance, leading the NP to consider more costly medications. Unfortunately, costly medications may or may not be covered by an insurance or

government health plan. Recommended antimicrobials include amoxicillin/clavulanate, cephalosporins, and nitrofurantoin; fluoroquinolones can be used, except for persons less than 18 years of age. Short-term treatment initially is recommended in 1-, 3-, and 5-day increments; or longer term conventional therapy may continue for 7 days to 2 weeks, depending on location and UTI severity.

Conclusion

The unconventional practices of UP and urethral sounding put men at risk for UTI and challenges the NP who provides medical management for them. Knowledge paired with thoughtful consideration of these predisposing factors in both the pediatric and adult male population should assist the NP when assessing and treating men with UTI with a thorough history and physical assessment, effective diagnostic testing and treatment, along with applicable health education.

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Sidebar I. Demographics of Respondents with Genital Piercings Who Discussed Their Urethral Play Activities (Rinard et al., 2010).

Almost half lived in the United States and the remainder cited international sites of Australia, Canada, New Zealand, and South Africa. The "average respondent was 39 years of age, Caucasian, possessed undergraduate education, reported frequent heterosexual relationships, good-excellent health, and a salary range of \$45,000–\$74,999: their religious beliefs were either grouped into nonexistent or moderately to very strong" (Rinard et al., 2010).

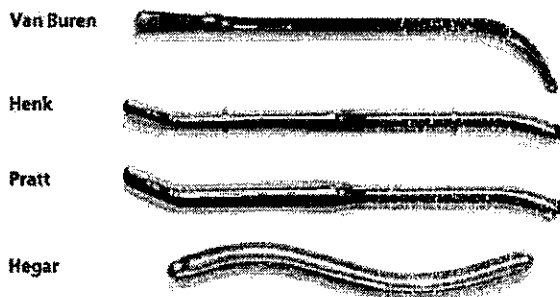
The respondents admitted being "risk-takers" (Carroll, Riffenburgh, Roberts, & Myhre, 2002). All had genital piercings (GP); many had between one and four general body piercings and some tattoos. They reported "monthly alcohol use was infrequent, but they often consumed 5+ drinks when they did drink" (Rinard et al., 2010). Yet, they also had non-risk-taking behaviors such as limited tobacco/drug use, few sexually transmitted infections (STI), and a first time intercourse age of 17.23 (national male average 16.9) (Sexual & Reproductive Health, 2002).

Psychologically, over half reported a little to small amount of "sad or depressed feelings" and a few cited physical, emotional, or sexual abuse; only one

respondent had been forced to participate in sexual activity against his will. Their self-esteem profile (Berent, 2006) triggered two responses of "I make demands on myself that I would not make on others" and "I blame myself when things do not work the way I expected" (Cronbach α 0.77, averaged). Responses to the Self-Attributed Need for Uniqueness (SANU) scale (Lynn & Snyder, 2002) positively documented "intentionally wanting to be different, distinctive, and unique (Cronbach α 0.88)" (Rinard et al., 2010).

Sidebar II. Urethral Sound

This urethral sound spoken about is the same smooth, stainless steel surgical instrument that comes in a variety of shapes and sizes and is often used in the surgical suite for locating urethral obstructions and/or dilating the urethra. Four types of urethral sounds are illustrated here that could be used for UP.



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