

Case — Prostatic abscess in an adolescent

Tze-Chen Chao, MD; Stephen Shei-Dei Yang, MD

Division of Urology, Taipei Tzu Chi Hospital, the Buddhist Tzu Chi Medical Foundation; School of Medicine, Buddhist Tzu Chi University, Hualien, Taiwan

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Introduction

Prostatic abscess is uncommon in adults and is infrequently noted in the pediatric population. The current recommended management for prostatic abscess larger than 1 cm is surgical drainage with adequate antibiotics.¹ However, the appropriate management of a prostatic abscess remains under debate. Herein, we present the case of a young patient with a large prostate abscess without a systemic disease who was successfully treated with antibiotics only and did not require surgical drainage.

Case report

A 14-year-old male who presented with fever and low back pain for one week was transferred to our hospital. Urine culture at a previous hospital revealed the presence of *Escherichia coli*, which was resistant to the fourth-generation of cephalosporin and fluoroquinolone. The patient denied a history of recent trauma, bladder or bowel symptoms, drug allergy, drug abuse, and any sexual or travel history. At the age of four years, he underwent hypospadias repair and had recurrent urinary tract infections (UTIs) during his preschool years. The patient was a twin B with preterm labor who was born at 36 weeks of gestation and had developmental, language, and cognitive delays and repetitive and compulsive-like behaviors. According to his twin brother, the patient had a habit of squeezing water into his urethra through condoms almost every day for years.

Focused physical examination revealed sacral tenderness, high anal tone, and tender prostate without fluctuation. Transabdominal sonography (Fig. 1A) demonstrated a 5.4×5.9 cm heterogeneous septated mass over the pelvic region, which was confirmed by computed tomography (CT) scan (Fig. 1B). His uroflow curve revealed staccato pattern (Fig. 1C). Intravenous ertapenem was prescribed for two

weeks, and a followup abdominal CT scan after this treatment revealed resolution of the prostatic abscess (Fig. 2B). In addition, escitalopram was prescribed once daily for the repetitive behavior. At the one-month followup, his urinalysis was clean, transabdominal sonography revealed no signs of prostatic abscess (Fig. 2A), and the uroflow curve was bell-shaped (Fig. 2C). In addition, the patient also had fewer repetitive behaviors.

Discussion

To our knowledge, this is the first case of a large prostatic abscess in an adolescent successfully treated with antibiotics only. Prostatic abscess usually affects middle-aged men at an estimated rate of 0.2–0.5%;¹ however, it can occur at any age.² The common pathogens of prostatic abscess are *E. coli* and *Klebsiella pneumoniae*, whereas atypical pathogens are often presented in severely immunocompromized patients.³ The clinical symptoms of prostatic abscess include dysuria, urgency, frequency, sense of incomplete emptying, and suprapubic or perineal pain. Some patients only have systemic symptoms, such as fever or malaise.¹ Risk factors of prostatic abscess in adults include diabetes, chronic kidney disease, liver cirrhosis, liver abscess, human immunodeficiency virus infection, and acquired immune deficiency syndrome. Those who have undergone chemotherapy, organ transplant, or previous genitourinary procedures also have a higher risk of prostatic abscess.¹

Only three cases of prostatic abscess in adolescents have been reported to date (Table 1). Predisposing factors in these three patients were previous methicillin-resistant *Staphylococcus aureus* infection⁴ and chronic granulomatous disease.⁵ However, the most recent case had no identifiable risk factors.⁶

The possible risk factors of the currently presented case were the behavior of squeezing water into his urethra through condoms for masturbation and a history of recurrent UTIs. The repetitive forceful influx of contaminated water into the urethra may have caused prostate infection, which when not treated, led to the formation of multilocular abscess.

Currently, there is no standard treatment for prostatic abscess. In previous case reports of adolescents with pros-

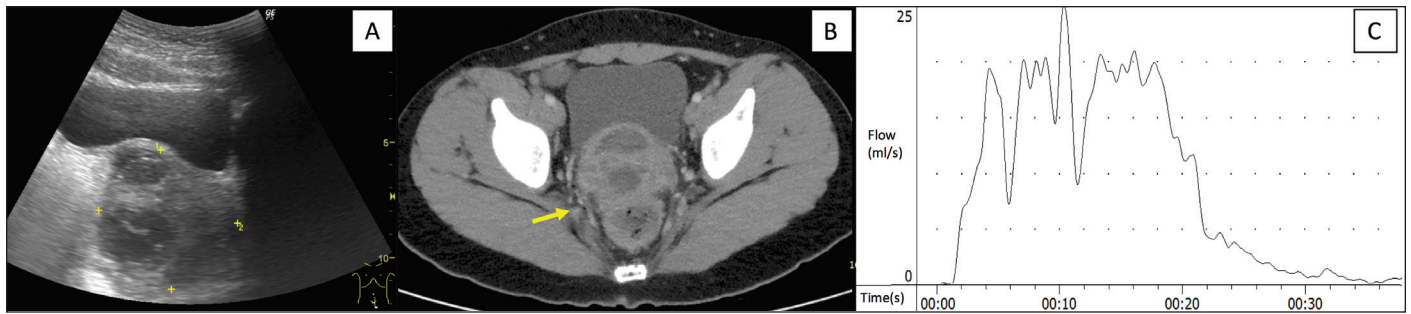


Fig. 1. (A) Abdominal sonography revealed a heterogeneous septated mass. (B) Contrast-enhanced computed tomography scan of the abdomen and pelvis revealed prostatic abscess with multiple loculations (arrow). (C) Uroflow revealed staccato pattern.

tatic abscess, all patients underwent drainage or transurethral unroofing of the prostatic abscess. The size of the abscess in the previous three cases was not >3 cm; the abscess in our patient was the largest reported to date (5.9 cm in the greatest dimension on abdominal CT scans) and the patient responded well to antibiotic treatment only. Reports suggest that surgical treatment is optimal when the patient has a slow response to antibiotics.^{2,7} According to previous reports, antibiotics alone should only be used in stable patients with a small prostatic abscess <1 cm.^{1,8} Oshinomi et al concluded that antibiotics should be used in patients with diffuse-type prostatic abscess, and drainage or transurethral resection of the prostate was more suitable in patients with focal- or multifocal-type prostatic abscess.⁹ However, our report demonstrated that antibiotics alone as the first-line treatment are curative in an adolescent patient with prostatic abscess. There are two possible reasons to explain why our patient could be conservatively treated. First, the patient was diagnosed and treated quite early. Second, he did not have comorbidities, such as diabetes mellitus or other factors contributing to immunocompromised status, which are common in adult cases with prostatic abscess. Therefore, it is questionable whether large prostatic abscesses should all be treated by aspiration or surgical drainage as the first-line treatment. We believe that with adequate antibiotics and optimal patient selection, adolescents with prostatic abscess can be conservatively treated.

Conclusions

A large prostatic abscess in an adolescent should first be treated with conservative treatments. The early diagnosis of the disease, its potential risk factors, and early antibiotic intervention are essential for successful outcome.

Competing interests: The authors report no competing personal or financial interests related to this work.

This paper has been peer-reviewed.

References

1. Ackerman AL, Parameshwar PS, Anger JT. Diagnosis and treatment of patients with prostatic abscess in the post-antibiotic era. *Int J Urol* 2018;25:103-10. <https://doi.org/10.1111/iju.13451>
2. Wein AJ, Kavoussi LR, Partin AW, et al. *Campbell-Walsh Urology*. 4. 11ed 2016. p. 304-29.
3. Abdelmoteleb H, Rashed F, Hawary A. Management of prostate abscess in the absence of guidelines. *Int Braz J Urol* 2017;43:835-40. <https://doi.org/10.1590/s1677-5538.iju.2016.0472>
4. Kiehl N, Kinsey S, Ramakrishnan V, et al. Pediatric prostatic abscess. *Urology* 2012;80:1364-5. <https://doi.org/10.1016/j.urology.2012.08.022>
5. Agochukwu NQ, Rastinehad AR, Richter LA, et al. Prostatic abscess in a pediatric patient with chronic granulomatous disease: report of a unique case and review of the literature. *J Pediatr Surg* 2012;47:400-3. <https://doi.org/10.1016/j.jpedsurg.2011.11.003>
6. Foster CE, Hulten KG, Janzen NK, et al. Pediatric prostatic abscess caused by methicillin-susceptible *Staphylococcus aureus*. *Pediatr Infect Dis J* 2017;36:426-7. <https://doi.org/10.1097/INF.0000000000001458>
7. Grabe M, Bartoletti R, Johansen TEB, et al. Guidelines on urological infections: European Association of Urology; 2015 Available at <http://www.uroweb.org>. Accessed June 10, 2019.

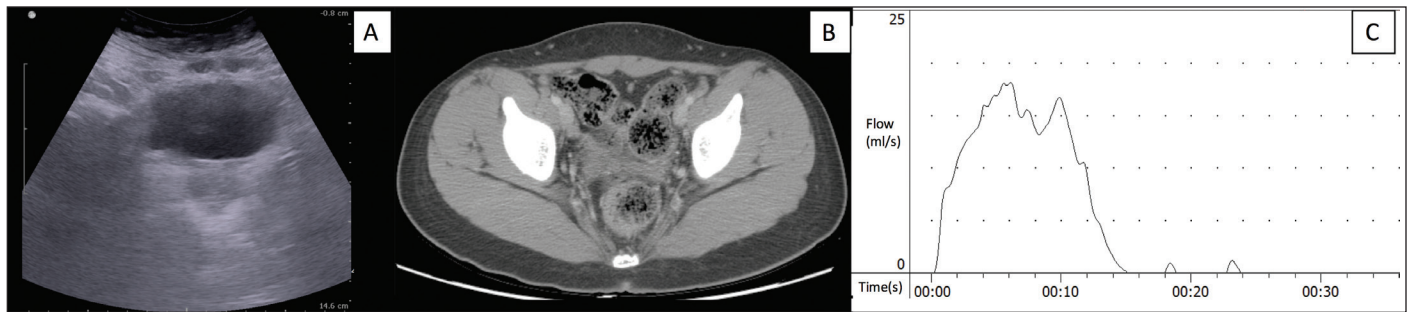


Fig. 2. (A & B) Abdominal sonography and contrast-enhanced computed tomography scan of the abdomen and pelvis revealed almost complete resolution of the disease. (C) Uroflow revealed bell-shaped curve.

Table 1. Prostatic abscess in an adolescent

Year	Age (years)	Risk factor	Size of prostatic abscess (cm)	Pathogen	Treatment	Outcome
2012 ⁴	15	Previous MRSA infection	N/A	MRSA	Transurethral unroofing of prostatic abscess	Cured
2012 ⁵	15	X-linked CGD	3	Not found	Transurethral resection and drainage of prostatic abscess	Cured
2017 ⁶	11	Nil	1.9 × 1.6	MSSA	Percutaneous drainage of abscess	Cured
2017	14	Repetitive forceful influx of contaminated water into urethra	5.4 × 5.9	<i>Escherichia coli</i>	14 days of antibiotics	Cured

CGD: chronic granulomatous disease; MSSA: methicillin-sensitive *Staphylococcus aureus*; MRSA: methicillin-resistant *Staphylococcus aureus*; N/A: not available.

8. Chou YH, Tiu CM, Liu JY, et al. Prostatic abscess: Transrectal color Doppler ultrasonic diagnosis and minimally invasive therapeutic management. *Ultrasound Med Biol* 2004;30:719-24. <https://doi.org/10.1016/j.ultrasmedbio.2004.03.014>
9. Oshinomi K, Matsui Y, Unoki T, et al. Treatment strategy for prostatic abscess: Eighteen cases' report and review of literature. *Urol Sci* 2018;29:206-9. https://doi.org/10.4103/UROS.UROS_59_18

Correspondence: Dr. Stephen Shei-Dei Yang, Division of Urology, Buddhist Tzu Chi General Hospital, Taipei Branch, Taipei County, Taiwan; urolyang@yahoo.com.tw