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Prostatic abscess caused by *Escherichia coli* in a diabetic patient (case report)

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Abstract

Since the advent of potent antibiotics, prostatic abscess has become increasingly uncommon. Effective treatment of gonorrhea, a major cause of prostatic abscess in the past, has contributed significantly to this phenomenon. Prostatic abscess mainly affects diabetic and immunocompromise patients. Prostatic abscess is difficult to diagnose because clinical presentations may mimic several other diseases of the lower urinary tract, such as dysuria, urgency, and frequency. Prostatic abscess is a rare complication of acute bacterial prostatitis, described in 0.5 to 2.5% of patients presenting with inflammatory prostatitis. Patients with prostatic abscess typically present with difficulty urinating or with acute urinary retention. In particular, differential diagnosis between acute bacterial prostatitis and prostatic abscess is difficult on the basis of clinical symptoms and examinations. It may result in severe complications and even urosepsis and death. More recent data suggests a mortality rate from 3% to 16%.

We report a case of prostatic abscess in a 57-year-old known diabetic male patient who was admitted in the First University Clinic of TSMU urology department in 2017 of 24 July. Clinical diagnosis was done by clinical presentation and CT-scan and transrectal ultrasonography (TRUS). The causative agent *Escherichia coli* were isolated from the aspirate and surgical intervention was required under spinal anesthesia. The patient responded to intravenous Piperacillin and Tazobactam therapy.

Keywords: Prostatic abscess, diabetes, diagnoses, treatment

Introduction

Prostatic abscess is an uncommon urologic disease but has a high mortality rate if not treated properly. Furthermore, diagnosis and proper treatment of prostatic abscesses remains a challenge for physicians. Prostatic abscess is a rare clinical occurrence in the antibiotic era and is difficult to diagnose because clinical presentations may mimic several other diseases of the lower urinary tract, such as dysuria, urgency, and frequency. In particular, differential diagnosis between acute bacterial prostatitis and prostatic abscess is difficult on the basis of clinical symptoms and examinations (1, 2). It may result in severe complications and even urosepsis and death. It results from focal accumulation of pus within the prostate gland. Historically, the common infecting organisms were *Neisseria gonorrhoeae*, *Staphylococcus aureus* and *Mycobacterium tuberculosis*. However, more recently, gram negative bacteria, such as *Escherichia coli*, are causative species. The pathogenesis of the disease has been thought to involve two distinct mechanisms: The first mechanism occurs in older individuals with pre-existing bladder outlet obstruction, in whom a prostatic abscess develops secondary to a lower urinary tract infection. The abscess is caused by *E. coli* or other coliform bacteria in this group. The second mechanism involves a much smaller group of patients with a wide age distribution. The causative organism is usually *staphylococcus*, as a result of metastatic abscess in the prostate from a focus of infection elsewhere. Predisposing factors for the development of a prostatic abscess are diabetes mellitus, urethral catheterisation/instrumentation and chronic bacterial prostatitis. Chronic dialysis patients with prostatic inflammation have frequent abscess collections. A relatively new group of patients at risk are those with suppressed immune system, caused by AIDS, chemotherapy. In the transperineal or transrectal drainage under transrectal sonography is the first choice for

therapy because of the low risk of complication. In the forties, mortality ranged from 6% to 30%, and major microorganism involved was *Neisseria gonorrhea*. More recent data suggests a mortality rate from 3% to 16% (3, 4), Enterobacteriaceae family being the most common agents. Among these, *Escherichia coli* has the highest prevalence, in about 70% of the cases. An accurate diagnostic and an efficient treatment are both required. Most published data about prostatic abscess are case reports, and there is no standardization of the diagnostic and therapeutic routine. Some authors suggest that prostatic abscess is a complication of bacterial prostatitis, acute or chronic, but the actual incidence and frequency of these events is not known (5, 6). Bacterial haematogenous spread from distant foci was also described, such as from respiratory (bronchitis, otitis), digestive (appendicitis, diverticulitis), and urinary tracts (perirenal abscess), and from the skin (furuncles, abrasions). In these cases, germs like *S. aureus*, *M. tuberculosis*, *E. coli* e *Candida sp.* may be found. The most common finding is presence of one or more hypoechogenic areas, of several sizes, containing thick liquid primarily in the transition zone and in central zone of the prostate, permeated by hyperechogenic areas and distortion of the anatomy of the gland (7). Differential diagnosis should include prostatic cysts and neoplasia (7,8). Computed tomography adds few benefits to transrectal ultrasonography for the diagnosis of prostatic abscess, especially when there are extraprostatic collections Sending material to culture (pus, urine, blood, and/or a fragment of the prostate) is important in identifying the etiologic agent, especially for immunosuppressed patients(9,10,11). The diagnosis of prostatic abscess should be proposed for patients presenting fever and persistent irritative voiding symptoms despite antimicrobials use, for diabetics with protracted symptoms, for those with lower urinary tract symptoms and fever progressing to urinary retention, and after the performance of prostatic biopsy. Sending material to culture (pus, urine, blood, and/or a fragment of the prostate) is important in identifying the etiologic agent, especially for immunosuppressed patients, considering that they usually present uncommon germs (12, 13, 14). In this clinical case we present patient diagnosed with prostatic abscess, discussing clinical findings, diagnostic criteria, and treatment results.

Case report

This is a case history of 57-year old male patient who was admitted in the First University Clinic, urology department of TSMU in 2017 of 24 July due to prostatic abscess. On admission general health condition was heavy. His past history included diabetes mellitus and urinary tract infection. He complained of severe dysuria, severe pain in perineal area, pain and burning during urination. Despite of the conservative therapy with combination of ceftriaxone and levofloxacin for urinary tract infection high fever lasting 3 days. On digital- rectal examination the prostate was enlarged and very tender. Both the Computed Tomography (CT)-scan and Transrectal Ultrasound (TRUS) revealed well defined fluid collection areas compatible with an abscess in the right lobe of the prostate (Figure-1)

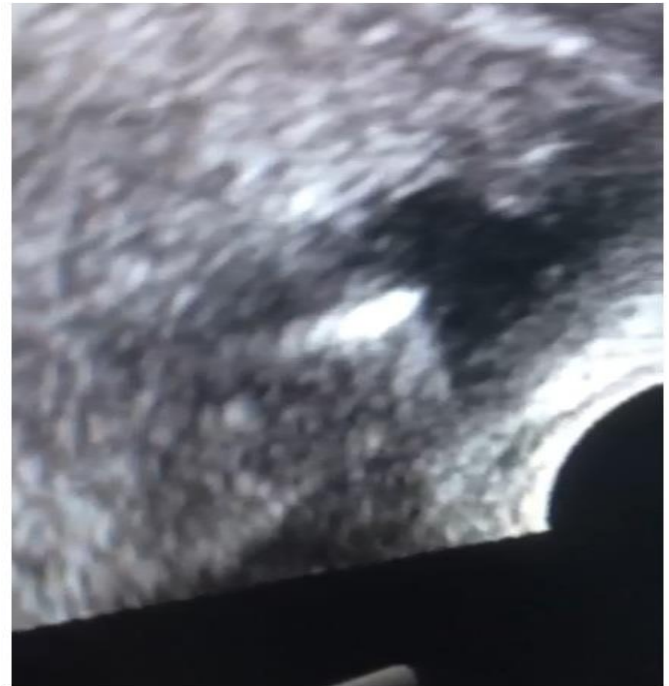


Fig. 1: Prostatic transrectal ultrasonography showing prostatic abscess

Diagnosis of prostatic abscess was conformed. Under spinal anesthesia and transrectal ultrasound guidance the abscess was aspirated transperineally. Trocar cystostomy was made on prostate and testicle. Laboratory tests on admission showed a total leukocyte count $15,4 \times 10^9/L$ (neutrophil count, $8,7 \times 10^9/L$) and CRP of 23 mg/L (reference range 0.0–5.0 mg/L). RBC- $4,38 \times 10^6/mcL$, HGB-13,6g/dl.HCT-39,1%,PLT- $423 \times 10^3/mcL$. General urinalysis reveal 6-8 leukocytes, erythrocytes 20-30, creatinine were 0,8mg/dl. Urine and operative samples from abscess was taken and sent under compliance with the appropriate protocol for culture and sensitivity test. The research included: isolation of a pure culture, Gram staining, use of the rapid identification systems (api20E, api Staph, api 20 Strep, api A, api20Caux, biomerieux) and Antimicrobial Susceptibility Testing (AST) determination through Kirby-Bauer method by using of standard discs (EUCAST guidelines2017). Abscess fluid was cultured in aerobic and anaerobic atmosphere (Gen-Bag biomerieux) on the enrichment and differential-diagnostic medium. After 18-24 hours of incubation at 37 ° C, appeared colony growth on the bloody agar (TSA 5% with sheep blood) and on Endo agar (for Enterobacteriaceae family) which were stained by use of Gram procedure and bacteria were identified by the amplification profile index special panel (api20E), identification of the bacteria was determined by Apiweb. The isoaited was a Gram-negative, facultatively anaerobic,rod-shaped, motile(peritrichous) *Escherichia coli* $10^8/ml$. Urine culture were negative. Postoperative treatment was started with combination Piperacilline and Tazobactam along with metronidazole, which based on the local susceptibility testing was continued. The patient responded to intravenous Piperacillin and Tazobactam therapy very well (Figure-2) and was discharge after 4 days of admission in hospital with improve condition and proper recommendations.



Fig.2: Prostatic transrectal ultrasonography after treatment.

Conclusion

When not adequately treated, the prostatic abscess may progress to sepsis and death. Thus, an accurate diagnostic and an efficient treatment are both required. This clinical case is interesting because prostatic abscess is an uncommon urologic disease and is difficult to diagnose because clinical presentations may mimic several other diseases of the lower urinary tract. Diagnosis of prostatic abscess in our case was confirmed by use of CT-scanning and Transrectal Ultrasound (TRUS), which is the most sensitive investigation to diagnose the condition. Operative material from abscess bacteriologically grew *Escherichia coli* as etiological agent.

This case illustrates successful diagnosis and treatment of prostate abscess which was aspirated transperineally and appropriate antibiotic in our case intravenous Piperacillin and Tazobactam was started and continued based on the local susceptibility tests.

References

1. Langer JE, Cornud F. Inflammatory disorders of the prostate and the distal genital tract. *Radiol Clin.* 2006; 44(5):665–677. doi: 10.1016/j.rcl.2006.07.004.
2. Lipsky BA, Byren I, Hoey CT. Treatment of bacterial prostatitis. *Clin Infect Dis.* 2010
3. Elshal AM, Abdelhalim A, Barakat TS, Shaaban AA, Nabeeh A, Ibrahim E-H. Prostatic abscess: objective assessment of the treatment approach in the absence of guidelines. *Arab J Urol.* 2014
4. Charalabopoulos K, Karachalios G, Baltogiannis D, Charalabopoulos A, Giannakopoulos X, Sofikitis N. Penetration of antimicrobial agents into the prostate. *Chemotherapy.* 2003
5. Deshpande A, Halebian G, Rapose A. Prostate abscess: MRSA spreading its influence into gram-negative territory: case report and literature review. *BMJ Case Rep.* 2013
6. Kiehl N, Kinsey S, Ramakrishnan V, Dajusta DG. Pediatric prostatic abscess. *Urology.* 2012
7. Dattilo WR, Shiber J. Prostatitis or prostatic abscess. *J Emerg Med.* 2013; 44(1):e121–e122. doi: 10.1016/j.jemermed.2012
8. Sheahan G, Vega Vega A. Dramatic complications of prostatitis: a prostatic abscess and scrotal abscess. *ANZ*

J Surg. 2013;

9. Sukhal S, Zamora JG, Herrera P. An unusual cause of prostatic abscess: a case report and review of literature. *Infect Dis Clin Pract.* 2013
10. Hoffman MA, Steele G, Yalla S. Acute bacterial endocarditis secondary to prostatic abscess. *J Urol.* 2000;
11. Granados EA, Riley G, Salvador J, Vincente J. Prostatic abscess: diagnosis and treatment. *J. Urol.* 1992
12. Weinberger M, Cytron S, Servadio C, Block C, Rosenfield JB, Pitlik SD. Prostatic abscess in the antibiotic era. *Rev. Infect. Dis.* 1988