

## Prostatic abscess after transrectal ultrasound-guided prostate biopsy. Case report

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**SUMMARY:** Prostatic abscess after transrectal ultrasound-guided prostate biopsy. Case report.

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*Prostatic abscess (PA) is an uncommon complication after transrectal ultrasonography-guided prostate biopsy with possible heavy outcome too.*

*In this case report (a 68-year-old patient) prostatic abscess presents non specific symptoms: dysuria, supra-pubic pain, urinary frequency, fever 36.0°C (96.8°F). Full blood count, serum urea, electrolytes, liver*

*function test and serum amylase were all normal. There was no growth in his urine culture. Diagnosis is based on digital rectal examination and transrectal ultrasonography.*

*With transrectal ultrasonography (TRUS) we observed a hypochoic area that contained inhomogeneous material. Color and power Doppler sonography showed a hypovascular fluid collection surrounded by perilesional increased parenchymal flow. TRUS-guided aspiration was performed with an 18 Gauge Chiba needle and the pathogen identified was Escherichia Coli. TRUS of the prostate 1 month later showed complete resolution of the PA and patient remained free of any lower urinary tract symptoms.*

KEY WORDS: Prostatic abscess - Prostate biopsy - Complication - Sepsis.

### Introduction

Transrectal ultrasonography-guided prostate biopsy (TRUS-PB) is the gold standard method to obtain prostate specimen for histology and is therefore frequently used in clinical practice (1). TRUS-PB is a relatively safe method, usually well-tolerated by patients, though minor complications such as pain, hematuria, hematospermia, rectal hemorrhage or, rarely, major complications such sepsis, hematoma and urinary retention can be observed (2).

Prostatic abscess (PA) after TRUS-PB is an extremely rare complication. The diagnosis of PA is often difficult to confirm by physical examination, clinical symptoms and prostatic imaging: TRUS, Computed Tomography (CT) and Magnetic Resonance (MR). The signs and symptoms of PA include: acute urinary retention, fever, dysuria, urinary frequency, perineal pain, hematuria, urethral discharge and pain in the lower back.

Because signs, symptoms and physical findings of PA

are similar to those of acute bacterial prostatitis after prostate biopsy, the clinical diagnosis of PA often is difficult (3). From this point of view, prostatic imaging is important in the diagnosis and management of PA.

### Case report

A 68-year-old patient visited the Department of Urology with a history of dysuria, supra-pubic pain, urinary frequency associated with a stinging sensation and pain in his passage. For about two weeks prior to his admission he had been taking antibiotics prescribed by his general practitioner for a presumed diagnosis of recurrent urinary tract infection. He was put on Ciprofloxacin 500 mg orally twice a day for two weeks. Despite taking medications his symptoms persisted. His past history was remarkable for gastroesophageal reflux and hypertension. On physical examination, oral temperature was 36.0°C (96.8°F), blood pressure 135/90 mmHg, heart rate 88 beats/min and pulse oximetry 98% on room air. Rectal examination revealed a non particularly hard fluctuant prostatic mass of approximately 2cm in diameter. Full blood count, serum urea, electrolytes, liver function test and serum amylase were all normal. There was no growth in his urine culture; his urine cell count determined by flow cytometry revealed: white blood cells 8/uL, red blood cells 185 u/L, normal epithelial cells.

His recent medical history showed that three months before he underwent TRUS-PB because of his high serum prostate specific antigen levels (PSA: 8,3 ng/ml) detected on routine check-up. In addition to Ciprofloxacin 1000 mg, Co-amoxiclav (1 gr three times daily)

was given orally 1 day before and continuing for 5 days after TRUS-PB. TRUS findings consisted in benign prostatic hyperplasia (BPH) and the histopathological features of 16 biopsy specimens showed benign prostate tissue. TRUS was performed with a Logic 7 GE using a 9-4 MHz convex probe "end-fire".

TRUS showed an hypoechoic area that contained inhomogeneous material. The fluid had unlimited borders and the size was estimated by the formula:  $D1=1.5\text{cm} \times D2=1.3\text{cm} \times D3=2.5\text{cm}$  (D1, the transverse; D2, the anteroposterior; D3 cephalocaudal dimension of PA) (Figure 1). Color and power Doppler sonography showed a hypovascular fluid collection surrounded by perilesional increased parenchymal flow (Figure 2). Before TRUS-guided needle aspiration we tempt an antibiotic treatment for 10 days with Gentamicyn 160 mg intramuscular and Co-amoxiclav orally (1 gr three times daily), but nevertheless the symptoms persisted.

The patient had a cleansing enema prior to the procedure trying to eliminate as much fecal material as possible. He was placed on left lateral decubitus position with knee-chest position and TRUS-guided aspiration was performed with an 18 Gauge Chiba needle. The amount of drained pus was 12 ml and the pathogen identified was *Escherichia Coli*. After TRUS-guided needle aspiration intravenously antibiotics therapy was started with third generation cephalosporin and aminoglycoside for ten days.

Prostate TRUS one month later showed complete resolution of the PA. Our patient received regular follow-up for three months more without any lower urinary tract symptoms.

## Discussion and conclusion

Infective TRUS-PB complications are not so common but well documented, with the causative mechanism believed to be inoculation of the prostate, blood vessels and urine with bacterial flora from the rectal mucosa and subsequent systemic dissemination. The frequency of sepsis following TRUS-PB is rather low, ranging between 0.6-6.6% in various studies. Febrile complications occur in <5% of prostate biopsy procedures (4). The use of antibiotic prophylaxis for TRUS-PB significantly reduces the incidence of infective complications (5). Oral fluoroquinolones are recommended as first-line antimicrobial prophylaxis by the American Urological Association and European Association of Urology (Ciprofloxacin 500mg orally, as a single dose, 1 hour before the procedure) (6).

PA is an unusual complication of TRUS-PB. Delay in diagnosis can have grave sequelae, including a rupture of the abscess into the ischiorectal fossa or into the perivesical space with associated morbidity and death (7). The signs and symptoms of PA included, in order of frequency, acute urinary retention, fever, dysuria, urinary frequency, perineal pain, hematuria, urethral discharge and pain in the lower back, and the classical finding on digital rectal examination of a tender, fluctuant mass. Because signs and symptoms of PA are similar to those of acute bacterial prostatitis, the diagnosis of PA often is difficult only on clinical bases. From our point of view TRUS is important in the diagnosis and management of PA.

The sonographic pattern of prostatic abscess is cha-



Fig. 1 - Transrectal sonography shows prostate abscess as large inhomogeneous fluid collection surrounded by hypoechoic halo.

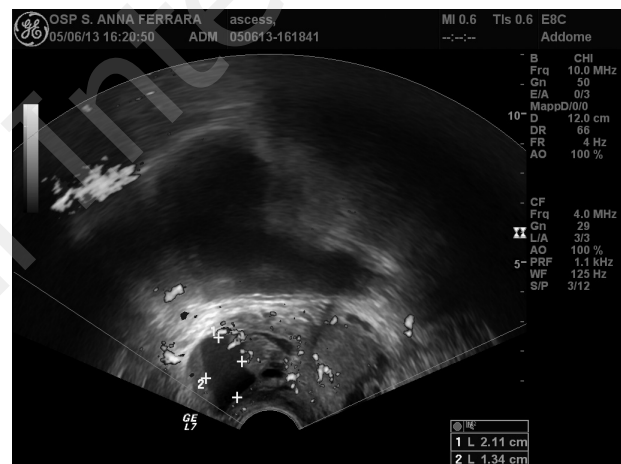


Fig. 2 - Power Doppler sonogram shows perilesional hypervascularity.

racteristic and is easily differentiated from other glandular lesions. In our case the abscess is located in the transitional zone of the gland and appears as a wider hypoechoic zone and is less easily definable during initial phases; color and power Doppler sonography show an high perilesional vascularity.

Furthemore TRUS is the most widely used technique in the guide of percutaneous aspiration and drainage and in evaluation of treatment response (8). The surgical approach is transurethral and transperineal. The aim of the treatment is the complete collapse of the cavity and sonographic guidance is particularly useful in therapeutic puncture and drain positioning (3). Currently, percutaneous treatment of prostatic abscess is preferred to surgery because of its lower risk of complications. Collado et al. (9) reported that 20 of 24 patients treated with TRUS-guided needle aspiration and adjuvant antibio-

tic therapy were successfully treated. Gan (10) suggested that TRUS-needle aspiration is a feasible alternative to transurethral drainage. Lim et al. (11) reported successful treatment of prostatic abscess in 12 of 14 patients with TRUS-guided needle aspiration. Aravantinos et al. reported that TRUS-guided placement of a transrectal drainage tube is a feasible, safe and effective alternative to standard treatment methods with good therapeutic results (12).

The frequency of a PA after TRUS-BP is low; in fact

only 3 cases are reported and all of them are associated with contemporary infection in other locations of the body (13, 14), unlike our clinical case. Although the risk of hospitalization after prostate biopsy has increased over time, the overall frequency was 0,8%, and no biopsy-related deaths were observed (4). Prostate biopsy may be associated with serious complications (as in our case report), this was a relatively rare event and should not by itself deter healthy young men who would benefit from early detection from pursuing a recommended biopsy.

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