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PROSTATIC DISORDERS
ORIGINAL ARTICLE

Outcome analysis of transrectal ultrasonography guided aspiration versus transurethral resection of prostatic abscess: 10 years' experience from a tertiary care hospital

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KEYWORDS

Prostatic abscess;
Transrectal aspiration;
Transurethral resection;
Transurethral deroofing

ABBREVIATIONS

CKD, chronic kidney disease;
TUR, transurethral resection

Abstract ***Objective:*** To compare the effectiveness and safety of two minimally invasive methods (transrectal aspiration vs transurethral resection (TUR)/deroofing) of treating prostatic abscess.

Patients and methods: A retrospective study was conducted, from 2007 to 2016, of patients with prostatic abscesses not responding to antibiotics and/or with large (> 2 cm) or multiple abscesses. Patients were divided into two groups depending on treatment received: Group A, transrectal aspiration; and Group B, TUR/deroofing of abscess.

Results: The most common clinical presentation was dysuria (81.8%), followed by urinary frequency (68.2%), and fever (36.4%). Acute urinary retention occurred in seven patients. The most common infective organism in both groups was *Escherichia coli* (43.9%). The mean (SD, range) prostate volume was 36 (6.4, 17–68) mL and 37 (7.3, 21–72) mL in Groups A and B, respectively. The mean (SD, range) volume of the abscess was 51.24 (12.6, 21–215) mL and 48.34 (15.4, 15–240) mL in Groups A and B, respectively. Overall, 37 (84.1%) patients responded to treatment (68.4% in Group A and 96.0% in Group B, $P < 0.23$) after the first treatment session. Six patients in Group A and one patient in Group B had recurrence of abscess

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($P < 0.03$). Of the six patients in Group A with recurrence, four patients had complete resolution after repeat aspiration (average 1–3 times). The mean (SD) follow-up duration was 17.25 (6.3) months.

Conclusion: TUR of prostatic abscess is more effective (96%) than transrectal aspiration with a lesser hospital stay. However, transrectal aspiration was successful in 89% of cases, is less invasive and can be performed under local anaesthesia and or sedation.

Introduction

Prostatic abscess is a rare presentation in the era of effective and widespread antibiotic therapy. However, it is not an uncommon finding in developing countries, especially in high-risk population groups, e.g. diabetics, chronic kidney disease (CKD), haemodialysis dependence, cirrhosis, and immune compromised patients [1–3]. Historically, mortality rates vary from 6% to 30% [4]. The diagnosis of prostatic abscess is challenging, because of the vague symptoms resembling other causes of LUTS. TRUS has revolutionised the diagnosis of the prostatic abscess [5]. With the aid of TRUS guidance, minimally invasive treatment methods are being used more frequently than open drainage of prostatic abscesses [6,7]. Minimally invasive treatment includes transrectal transperineal aspiration or drainage, transurethral resection (TUR)/deroofing of the prostatic abscess, and TURP [7]. In the present study, we have compared different prostatic abscess treatment methods for effectiveness and safety.

Patients and methods

A retrospective study was conducted in the Department of Urology, King George's Medical University, India from August 2007 to October 2016. Ethical approval was obtained from the Institutional Ethics Committee. Informed written consent was obtained from all the patients. Prostatic abscess not responding to initial antibiotics and/or large (>2 cm) or multiple abscesses were included for analysis (see Fig. 1). Patients who underwent initial TURP for prostatic abscess were excluded from the study. The remaining patients were divided into two groups as per treatment received: Group A, TRUS-guided transrectal aspiration; and Group B, TUR/deroofing of abscess. Data were evaluated regarding clinical presentation, DRE, complete blood counts, TRUS, serum PSA, AUA symptom score, urine analysis and culture report, treatment provided, intraoperative findings, outcomes, complications, and follow up.

Surgical technique

All the procedures were performed by experienced urologists. All patients received preoperative antibiotic (ceftriaxone 1 g, i.v.) 30 min before the procedure. TRUS-guided aspiration was done in left lateral decubitus under local anaesthesia and/or sedation. We used a linear array probe (7.5 MHz) wrapped in a condom to measure the abscess in both transverse and longitudinal directions, and the volume was calculated using the ellipsoid formula (which is already incorporated in the US software). Lignocaine jelly (2%) was instilled (using a nozzle) 5 min before the probe was introduced. An 18-G Chiba needle (20 cm; Cook, and Bloomington, IN, USA) was inserted along the track on the US screen and pus was aspirated manually. After aspiration, a rectal pack soaked with lignocaine jelly was inserted in the rectum for 1–2 h.

In Group B (TUR), the abscess cavity was localised by preoperative imaging, bulging prostatic mucosa and or prostatic massage under spinal anaesthesia. In patients who had BPH in association with prostatic abscess, TURP was performed at $\geq$4 weeks of resolution of abscess to prevent septic complications. All aspirated pus samples were sent for bacterial, fungal and acid-fast bacilli (AFB) culture. The total duration of antibiotic therapy was 6 weeks and was selected according to the pus culture and sensitivity report.

Postoperative follow-up included, daily clinical assessment, complete blood counts after 2 days and TRUS after 4 days. If residual abscess was found, re-aspiration was done using the same method. If patients did not respond to at least three re-aspirations and or had a worsening clinical response, then patients underwent TUR. Success was defined as clinical improvement and or no residual abscess on follow-up.

Statistical analysis

The unpaired *t*-test was used to compare continuous data and Fisher's exact test was used to analyse categorical data. The Student's paired *t*-test was used to assess improvement in variables in comparison to baseline data. Statistical analysis was performed using the