

Asymptomatic Prostatic Abscess: A Case Report and Review of the Literature

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Abstract

Prostatic abscesses typically present with characteristic symptoms, such as dysuria, fever, and pelvic pain. Additional manifestations may include painful ejaculation, haematospermia, or urinary retention. Prostatic abscesses are an uncommon subtype of urinary tract infections and may occasionally present without symptoms, rendering the diagnosis and consequently the management process more challenging. Asymptomatic cases pose diagnostic challenges and may be mistaken for malignancy or other non-infective pathology. In this review, we describe a case of an asymptomatic prostatic abscess in an 80-year-old male patient that was incidentally discovered, then successfully diagnosed, and drained afterwards. We also review the existing literature on asymptomatic presentations of prostatic abscesses, highlighting common risk factors, diagnostic challenges, and therapeutic approaches, with the goal of improving recognition and optimising management strategies in such atypical cases.

Categories: Urology, Geriatrics, Infectious Disease

Keywords: asymptomatic prostate abscess, diabetes, diagnosis, imaging, prostate abscesses, transperineal drainage, treatment

Introduction

Prostatic abscess is an uncommon but well recognised complication of prostatic and urinary tract infection, with the classical clinical picture comprising dysuria, fever, perineal or pelvic pain, and urinary retention; however, a subset of patients present with minimal or no symptoms attributable to the abscess itself, which can result in diagnostic delay or misattribution to alternative pathology, given overlapping findings on digital rectal examination and cross-sectional or magnetic resonance imaging (MRI) [1,2]. It is thought to complicate a small minority of urinary tract infections seen in urological practice, with the reported incidence having declined since the introduction of effective antibiotic therapy [3,4]. It most frequently arises from ascending urethral or bladder infection, haematogenous seeding, or as a complication of instrumentation such as transrectal prostate biopsy or urethral catheterisation. Gram-negative organisms, particularly *Escherichia coli* and *Klebsiella* species, remain the most frequently isolated pathogens, although an increasing number of cases involving *Staphylococcus aureus*, including methicillin-resistant strains, have been reported in recent years [3]. Recognised risk factors include diabetes mellitus, immunosuppression, indwelling or intermittent catheterisation, recent prostatic instrumentation, and chronic bladder outlet obstruction, with diabetes remaining the single most consistently reported association [4]. We present a case of a large, asymptomatic prostatic abscess in an elderly man with a longstanding history of lower urinary tract symptoms treated as benign prostatic hyperplasia and use this case as a basis to review the existing literature, including risk factors, diagnostic pitfalls, and current management approaches.

Case Presentation

We report the case of an 80-year-old patient with a medical history of atrial fibrillation, hypertension, and benign prostatic hyperplasia, who had longstanding lower urinary tract symptoms despite treatment with doxazosin and finasteride. He presented during his follow-up for persistence of his known lower urinary tract symptoms, especially reduced urinary stream and dribbling. He was afebrile, with no reported history of fever or chills. Laboratory investigations revealed normal inflammatory markers, with a C-reactive protein (CRP) less than 5 mg/L, and his prostate-specific antigen (PSA) level was 1.23 ng/mL. Digital rectal examination identified a benign-feeling right prostatic lobe and a suspicious nodule on the left lobe; the overall examination was non-tender, and the patient did not report any discomfort. Due to the concerning rectal examination findings, an urgent non-contrast, multiplanar MRI of the prostate was scheduled and performed approximately three weeks later to further assess the left-sided prostatic abnormality. Imaging demonstrated a markedly enlarged prostate measuring approximately 200 cc in volume, with the enlargement primarily attributed to a 7.0 × 5.5 × 5.0 cm liquefied collection located in the posterior aspect of the gland, and no additional suspicious lesions were identified within the central or peripheral zones (Figures 1-2).

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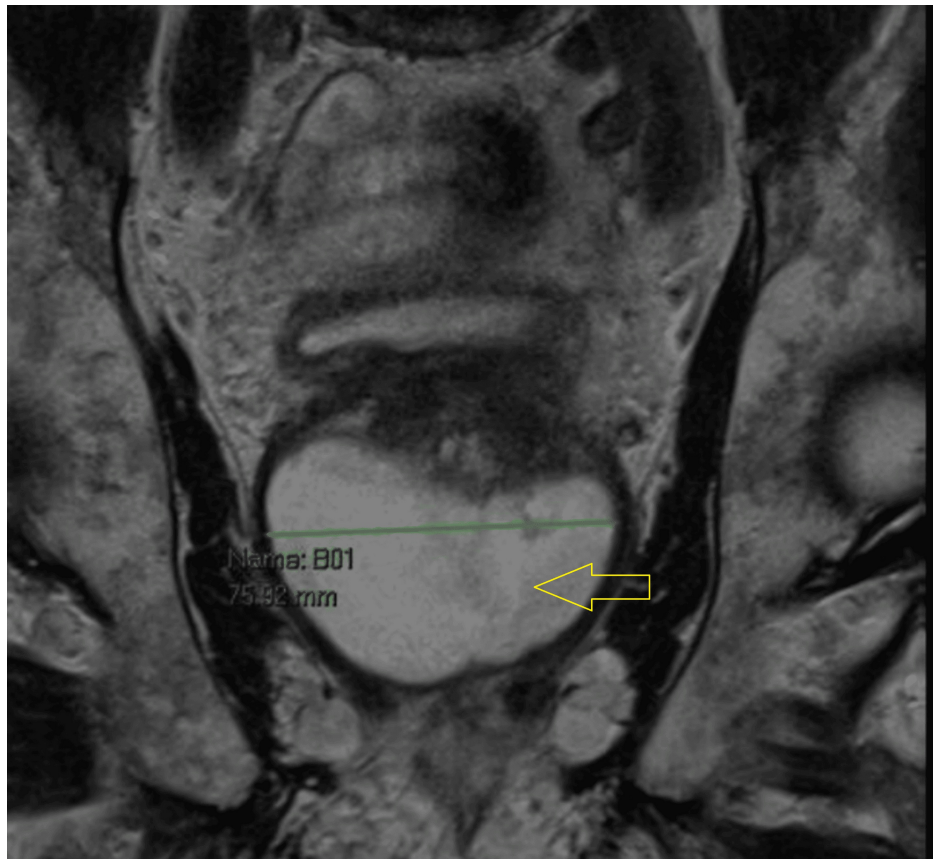


FIGURE 1: Coronal T2 non-contrast multiplanar magnetic resonance image of the prostatic lesion with maximum diameter of 7 cm, delineated by the yellow arrow.

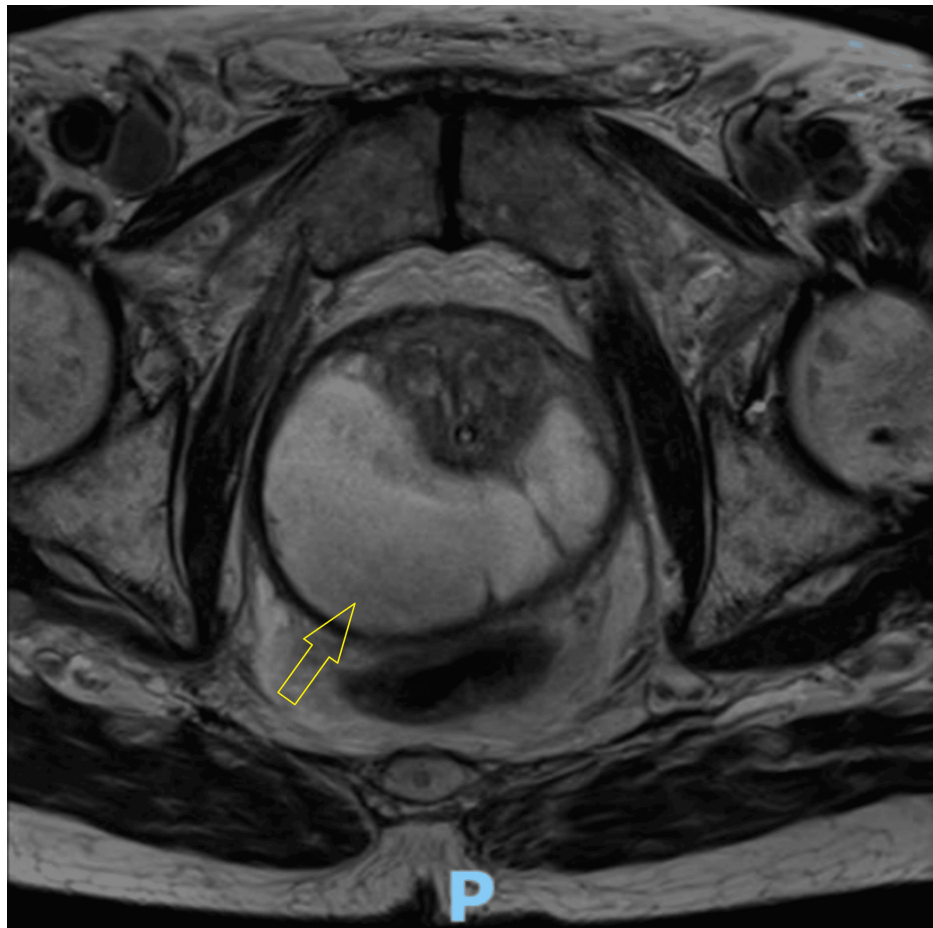


FIGURE 2: Transverse T2 non-contrast multiplanar magnetic resonance image of the prostatic lesion.

The yellow arrow indicates the large liquefied collection occupying the posterior aspect of the gland.

The case was reviewed at the local multidisciplinary team (MDT) meeting, which included input from both urology and uro-radiology specialists. Given the absence of clinical or biochemical signs of infection, the differential diagnosis was indefinite and included suspicion for a prostatic malignancy with central necrosis. It was therefore decided to proceed with a transrectal biopsy with or without aspiration of the collection for cytological analysis. The patient remained asymptomatic at the time of the scheduled procedure, and repeat digital rectal examination revealed a smooth, benign-feeling, non-tender prostate. Under transrectal ultrasound guidance and local anaesthesia, the lesion was accessed via a transperineal approach using an 18-gauge needle in our urology unit. Immediate aspiration yielded approximately 150 mL of yellowish purulent fluid, which was sent for cytological analysis, microbiological culture, and tuberculosis testing. Given the significant volume of the collection, a 10 French pigtail catheter was inserted using the Seldinger technique under ultrasound guidance to facilitate ongoing drainage of any residual abscess, as well as a 14 French Foley's catheter. In order to minimise the risk of a septic shower, the decision was made to defer biopsy. Although the imaging and aspirate characteristics were consistent with a prostatic abscess, the atypical clinical presentation prompted consideration of a tuberculous etiology. The drain and urethral catheter were both removed five days post-procedure, following which the patient successfully resumed spontaneous voiding. A six-week course of ciprofloxacin was initiated. The patient was reviewed in clinic two months following the drainage procedure. He continued to report longstanding lower urinary tract symptoms, including urinary frequency and nocturia. Cytological analysis of the aspirated fluid confirmed the presence of pus, while microbiological culture identified *Proteus mirabilis* with susceptibility to ciprofloxacin, amoxicillin-clavulanate, and gentamicin, as well as negative tuberculosis testing. A transrectal ultrasound was performed in clinic with the patient's consent and demonstrated no residual collection. In light of persistent symptoms, a plan was made to proceed with transurethral resection of the prostate (TURP). A repeat MRI scan showed satisfactory resolution of the previously identified abscess, with no evidence of significant residual or drainable collection (Figures 3-4).

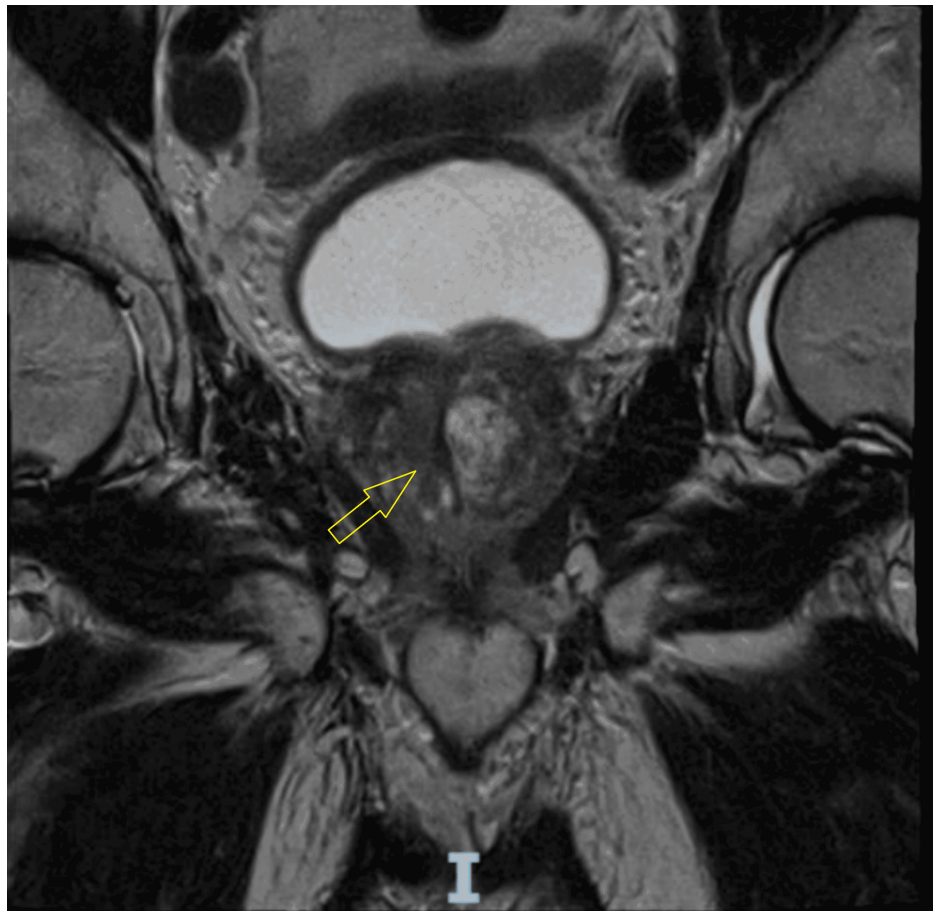


FIGURE 3: Coronal T2 non-contrast multiplanar magnetic resonance image showing resolution of the prostatic lesion, delineated by the arrow.

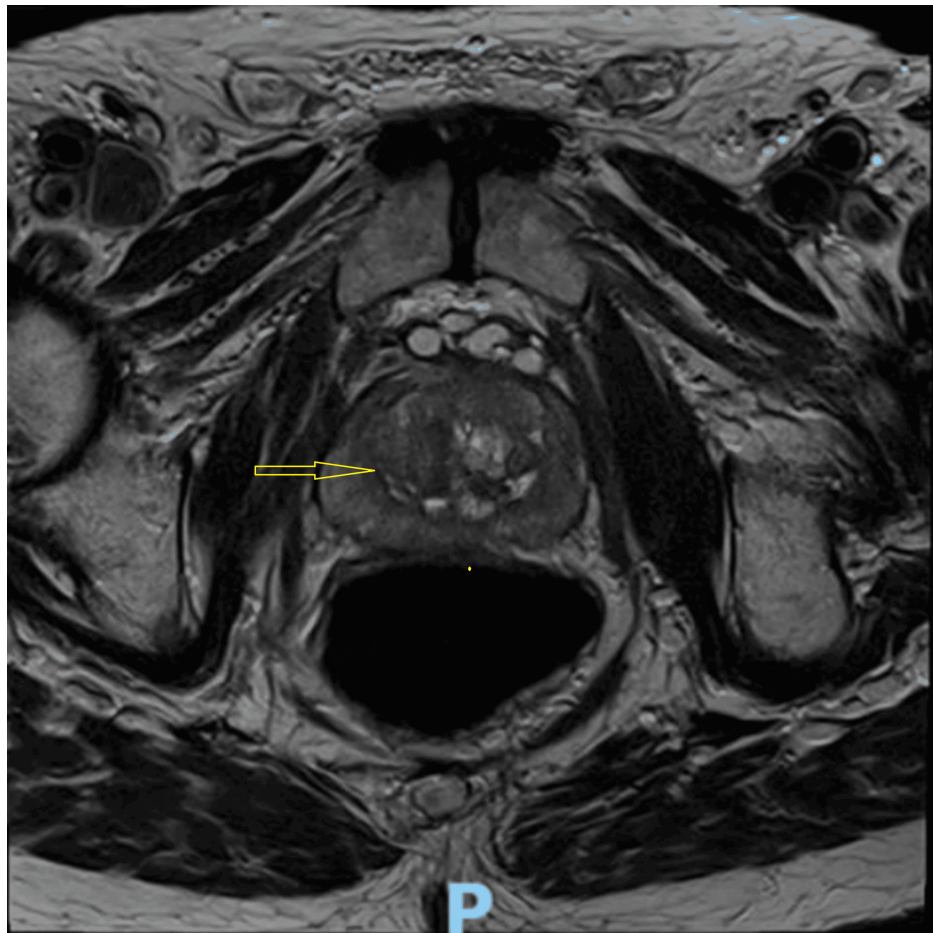


FIGURE 4: Transverse T2 non-contrast multiplanar magnetic resonance image showing resolution of the prostatic lesion, delineated by the yellow arrow.

PSA measured six weeks post-drainage was 0.54 ng/mL. The patient successfully underwent TURP six months later. Histopathological analysis of the resected tissue confirmed benign prostatic hyperplasia with features of mild chronic inflammation.

Discussion

Two cases with asymptomatic prostate abscess were identified incidentally in one study in 2013. Both of these cases were uncontrolled diabetics, and both presented with bacteremia of *S. aureus*. In contrast to our case, these two cases were diagnosed with computed tomography (CT scan) and were managed with intravenous antibiotics alone, with no need for surgical drainage [1].

Another case was reported in 2025 involving a 72-year-old diabetic male, in whom multiple asymptomatic prostatic abscesses were incidentally discovered during TURP. Preoperatively, CT revealed prostatic hyperplasia, and the patient presented with typical symptoms of benign prostatic obstruction. Digital rectal examination revealed a smooth, soft, and non-tender prostate. Postoperatively, the patient was started on empirical intravenous antibiotics, followed by a one-month oral antibiotic course. Microbiological analysis of the drained fluid showed no bacterial growth [2].

Prostatic abscesses are relatively rare and often present diagnostic challenges due to their variable and frequently nonspecific clinical presentation. They are most commonly caused by gram-negative bacterial infections; however, there has been a growing number of reported cases involving *S. aureus*, including methicillin-resistant strains [3].

Diabetes mellitus is one of the most well-established risk factors for prostatic abscess formation, particularly in cases of poor glycaemic control. The immunocompromised state associated with uncontrolled diabetes significantly increases susceptibility to bacterial infections, with over half of reported prostatic abscess cases occurring in diabetic patients [4]. Nonetheless, as illustrated in our case, the absence of diabetes or

hyperglycaemia does not preclude the development of a prostatic abscess, indicating that this condition may occasionally arise in otherwise immunocompetent individuals without traditional risk factors.

The diagnosis and management of prostatic abscesses, particularly when asymptomatic, are highly individualized. Management strategies range from conservative treatment with antibiotics to more invasive approaches, such as transrectal aspiration or transurethral drainage, which are typically reserved for larger or multiloculated abscesses [5].

Transrectal ultrasound remains the mainstay of both diagnosis and treatment of prostatic abscess in most published series, permitting real-time visualisation of the collection, as well as image-guided needle aspiration or pigtail catheter drainage. Series using transrectal ultrasound-guided aspiration or drainage report high rates of resolution, and this approach is favoured by many units as it is inexpensive, avoids radiation, and is familiar to most urologists [6-9]. MRI proves to give a clear impression of the underlying issue, as proved in our case, despite only being able to attain T2 imaging, which is a clear limitation to our study, and further imaging including diffusion-weighted imaging (DWI)/apparent diffusion coefficient (ADC) could have proved to be even more enlightening.

A systematic review of the published literature identified a comparatively small number of reported cases, reflecting both the rarity of the condition and marked inconsistency in diagnostic and treatment approaches between centres, and highlighted an ongoing need for larger comparative studies and consensus guidelines [5,10,11].

As urologists become increasingly proficient with the transperineal approach - largely due to the rising adoption of transperineal prostate biopsy - this technique presents a valuable, safe, and familiar alternative for the drainage and management of prostatic abscesses, and warrants further comparative study against the traditional transrectal route [5]. Further research into optimal diagnosis and treatment modalities and concise guidelines remains to be explored.

Conclusions

The diagnosis and management of prostatic abscesses remain particularly challenging when patients are asymptomatic. While certain risk factors and clinical signs are commonly associated with the condition, their absence does not exclude the diagnosis. This case emphasizes the importance of maintaining a high index of suspicion, especially in patients with persistent lower urinary tract symptoms or abnormal imaging findings. Increasing clinical awareness and adopting a lower threshold for investigation may help reduce the incidence of missed or misdiagnosed cases, ultimately improving patient outcomes.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Ahmed Badr, Pavlo Somov

Acquisition, analysis, or interpretation of data: Ahmed Badr, Ahmed Galal

Drafting of the manuscript: Ahmed Badr, Ahmed Galal

Critical review of the manuscript for important intellectual content: Ahmed Badr, Pavlo Somov

Supervision: Ahmed Badr, Pavlo Somov

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