

Symptom Improvement and Transrectal Ultrasound-Documented Reduction of Prostate Size after Repetitive Prostatic Massage and Antimicrobial Therapy

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Précis

This case report documents clinical and TRUS documented reduction in prostate size after repetitive prostatic massage and antimicrobial therapy.

Abstract

A 78-year-old man with an enlarged prostate complaining of urinary symptoms was treated with 10 prostatic massages combined with antibiotics. The patient was asked to assign a global symptom score to his symptoms throughout the 16-day treatment period. A 10-point scoring system was used, with 10 representing the most severe symptoms. The patient's global symptom score fell from 5 before treatment to less than 1 after treatment. His prostate was markedly reduced in size per palpation, and his prostate volume decreased by 52%, from 63 g to 30 g, as measured by transrectal ultrasound. This case report demonstrates that repetitive prostatic massage plus antibiotic therapy was effective in alleviating one man's chronic pelvic symptoms, while decreasing the size of his prostate as measured by transrectal ultrasound.

Keywords

Prostate, prostatitis, prostatic hyperplasia, benign prostatic hyperplasia, prostatic hypertrophy, prostatic massage, infection, transrectal ultrasound, transurethral resection of the prostate, transurethral prostatectomy

Introduction

The Manila Genitourinary Clinic routinely sees patients whose prostates are reduced in size to palpation after repetitive prostatic massage and antibiotic therapy. This case report is the first attempt to document this clinical finding with transrectal ultrasound.

Case Study

A 78-year-old man presented with a chief complaint of nocturia 4 to 5 times per night for 16 years. He also complained of a sensation of incomplete voiding, urinary frequency, mild suprapubic pain, and urinary hesitancy, having to wait at least 30 seconds for urine to start to his flow. His only medication was an angiotensin converting enzyme (ACE) inhibitor to control hypertension for the past 19 years.

The patient was brought to the clinic at the insistence of his relatives, who were seeking non-surgical treatment for his prostate disorder. Three months prior to this consultation, his urologist diagnosed him as having BPH. A transrectal ultrasound ordered by his urologist revealed a prostate size of 63 grams. His urologist had advised him to undergo a transurethral resection of the prostate (TURP).

Methods

The patient started monitoring his symptoms during his first clinic visit by assigning them a global severity score from 0 (no symptoms) to 10 (worst symptoms). His baseline score was 5.

A Gram's stain of a urethral smear revealed Gram-positive cocci and Gram-negative bacilli with no leukocytes. A urethral smear examined under direct immunofluorescence for Chlamydia was negative. Physical examination revealed a smooth, soft, enlarged prostate with a 2-cm posterior bulge projecting into the rectum. Prostatic massage produced 8 drops of rust-colored prostatic fluid, which contained 5 to 8 white blood cells per oil immersion field (WBCs/OIF) and 20 to 30 red blood cells per oil immersion field (RBCs/OIF). All prostatic fluid samples collected during prostatic massage were examined at 1000 times magnification. No organisms were detected in the EPS by microscopy. A urinalysis after the prostatic massage revealed 3 to 5 WBCs/400x and 10 to 15 RBCs/400x. All urine samples were collected after prostatic massage and were examined at a magnification of 400 times.

Direct immunofluorescence of the EPS for *Mycobacterium tuberculosis* was negative.

The alpha-blocker alfuzosine hydrochloride (Xatral) 5 mg po bid was prescribed pending further test results.

The patient would have 10 clinic visits over a 16-day treatment period. Symptoms and laboratory test results are summarized in Table 2.

Results

Symptoms began to subside by the second clinic visit, when the patient reported a symptom severity score of 4 and that the nocturia had diminished to 3 episodes per night. The number of EPS WBCs had decreased to 0 to 2 per OIF, but the number of RBCs/OIF climbed to >60. The EPS Gram's stain was free of bacteria and remained so throughout the entire treatment period. By the third clinic visit, the patient reported a slight improvement in initial urinary flow.

By the fourth visit, the posterior bulge of the prostate was reduced to only 0.5 cm and its consistency was soft to firm. However, extracellular Gram-negative diplococci were seen in the urethral fluid, and previous cultures of the EPS for aerobes, anaerobes, Mycoplasma, and trichomania now revealed growth of *Staphylococcus intermedius* organisms that were resistant to a test panel of antibiotics, except ofloxacin, which was prescribed as 400 mg bid based on the sensitivity report. The α -blocker was discontinued and a single dose of cefixime 400 mg was administered to cover the Gram-negative diplococcus found in his urethra, which was presumed to be a *Neisseria* species, but not *Neisseria gonorrhoea*. At this point, G.V. was advised to return for clinic visits every 2 days instead of every day. By the sixth visit, the symptom score had decreased to 2. A Gram's stain of the anterior urethra revealed no leukocytes or organisms, and urethral testing was terminated. However, a single dose of metronidazole 2 g po was administered to cover the possibility of unculturable anaerobes.

By the seventh clinic visit, the patient's symptom severity score had dropped to 1, rising slightly to 1.5 by the eighth visit, where it remained through the ninth visit.

During the 10th visit, the patient reported that the sensation of incomplete voiding had resolved. Only one drop of prostatic fluid was obtained, and it contained 2 to 10 WBCs/OIF and 0 RBCs/OIF. The patient's prostate was palpably smaller in size compared to his initial visit, now feeling flat to palpation inside the rectum. The patient was sent for a repeat TRUS, which revealed that the prostate was only 30 grams in size, a 52% reduction from the initial TRUS evaluation.

During his last visit, the patient vacillated in his evaluation of symptoms, assessing himself a score between 0 (asymptomatic) to 1. He was asked to continue ofloxacin for another 7 days and to return to the clinic in 4 months for a repeat TRUS. However, the patient has been lost to follow-up.

Discussion

The goal of treating the enlarged prostate is to relieve symptoms without causing harmful side effects. Reducing the size of the prostate may be an important part

of achieving this goal. Studies by our group and others have suggested that treating infection is important even in patients who have been given a diagnosis of "nonbacterial" prostatitis or BPH. [4-7] We have routinely noticed a reduction of prostate size to palpation after antibiotics and repetitive massage in men with bacterial prostatitis, nonbacterial prostatitis, and BPH. [14,15,19] This is the first time that we have been able to measure the reduction with transrectal ultrasound in our patient population.

Remarkable progress has been made in recent years in the search for prostatic bacteria. Using polymerase chain reaction (PCR) techniques, University of Washington researchers identified bacteria in the prostatic fluid of 85% of patients with a diagnosis of "nonbacterial prostatitis," as defined by standard techniques, in the first study carried out to identify such organisms. [1] Additional studies have found further evidence of bacteria in "nonbacterial" prostatic conditions. In one study, a positive correlation was found between the rate of leukocytosis in expressed prostatic secretions (EPS) and the number of positive bacterial cultures of EPS and the number of bacteria in EPS samples taken from men with "nonbacterial" prostatitis. [2] In another study, significantly more bacteria were found by PCR in EPS samples taken from men with "nonbacterial" prostatitis and prostatodynia than in samples taken from controls. [3]

Evidence of infection in benign prostatic hyperplasia (BPH) has also been shown. In one study, investigators found the prostatitis lesion in 98% of patients with BPH. [4] In other studies, bacteria were isolated from tissue removed by transurethral resection of the prostate (TURP) [5-7] at rates of 70%[5] to 82%. [6] Our hypothesis that prostatitis and BPH may coexist [8] is based on the hypothesis that BPH may obstruct prostatic ducts, which may result in distended prostatic acini, within which stagnant prostatic fluid can easily become infected. Evidence of infection in the prostates of men with BPH is provided indirectly by the development of febrile illness after a transurethral resection of the prostate (TURP). Based on this finding, a controversial suggestion has been made that all patients should be given antibiotics prophylactically before undergoing TURP. [9-12]

Chronic nonbacterial prostatitis has been treated with repetitive massage and antibiotic prophylaxis. The efficacy of this approach has also been explored in BPH. [13-18] In one patient with BPH, this mode of therapy resulted in resolution of urinary symptoms and improvement in erectile function. As of 5 years after treatment, he has not required surgery. [19]

Only small reductions in size have been documented for many of the newer treatments for BPH, [20] including transurethral needle ablation, [21] laser

coagulation, [22, 23] and finasteride (Proscar) [24] (Table 1). In a study of 159 consecutive patients with BPH (mean prostate volume: 56 cm³) treated with TURP, the preoperative volume was reduced by 59% to 23 cm³ within 4 months after surgery as measured by transurethral ultrasound (TRUS). [25]

This case report has many flaws. It is only a case report and a case series study should be undertaken, followed by a randomized controlled trial. The patient was asked to provide a global symptom score, however, there now exists the National Institute of Health's Chronic Prostatitis Symptom Index, which should be used in future studies. [27] The α -blocker alfuzosine was prescribed twice per day through the first 4 days of the 16-day treatment period, which confuses the issue of symptom relief. Two different operators did the TRUS measurements. Ideally, the same operator should do TRUS measurements before and after treatment, and a third TRUS should be done later to look for a sustained decrease in prostatic size. We did not find references on intra-observer or inter-observer variability with TRUS for measuring prostate size. The standard method of counting prostatic fluid WBCs per microscopic field was used, however, researchers at the University of Washington are recommending that a hemocytometer be used to increase accuracy. [28] Finally, the symptom score should be reassessed in such patients for up to two years after treatment.

This case report provides evidence of the efficacy of prostatic massage plus antimicrobial therapy in reducing the size of the prostate, showing a reduction in prostate size for our patient of 52% which approaches the 59% reduction achieved by TURP in a study of 159 men. [25] Repetitive prostatic massage and antibiotics, however, does not carry the same serious morbidity as the TURP, which can cause sexual dysfunction, impotence, incontinence, intraoperative bleeding, TURP-syndrome, and urinary strictures. [26] Other alternatives including transurethral needle ablation²¹ and laser ablation, [22, 23] produce a reduction in prostate volume ranging from only 17 to 21%. (Table 1.)

One medical alternative, finasteride--which blocks the conversion of testosterone into 5 α -dihydroxytestosterone--reportedly reduces the prostate size by 20% to 25%, but accomplishes this reduction only after 6 months of therapy, [24] as opposed to 22 days between the TRUS reports in this study. In addition, finasteride has side effects including sexual dysfunction.

To our knowledge, this is the first study to document by transrectal ultrasound a reduction in prostate size after prostatic massage combined with antimicrobial therapy, occurring simultaneously with a reduction in size to palpation and a decrease in symptoms. Further work on treating the enlarged prostate by this method and on the microbiology of the diseased prostate is recommended. We

hope to proceed with a case series study followed by a randomized controlled study.

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