Cases - Prostatic abscess with rectoprostatic fistula in two young men with multiple sclerosis treated with ocrelizumab

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INTRODUCTION

A prostatic abscess can occur in people with bacterial prostatitis, often with additional risk factors such as diabetes mellitus, immunosuppression, voiding dysfunction, and genitourinary instrumentation.[1,2,3] It is a rare but serious urologic condition, occurring in ~6.0% of patients hospitalized for acute bacterial prostatitis.[2,4] The prevalence of prostatic abscesses has decreased since the introduction of antibiotics, and is now most commonly caused by E. coli.[5] Common symptoms of a prostatic abscess include fever, lower urinary tract symptoms (often dysuria), and urinary retention.[3,5] Pain is also commonly reported, but varies in location. Fistulization to the rectum is an extremely uncommon complication, only described in case reports.[6-9] Treatment of a prostatic abscess is broad-spectrum intravenous antibiotics, and drainage via transperineal/transrectal image-guided aspiration or transurethral deroofing if the abscess doesn't resolve with antibiotics or is large.[1,10]

Relapsing-remitting multiple sclerosis (RRMS) is a demyelinating autoimmune disease of the central nervous system. Disease-modifying therapies decrease the frequency and severity of MS relapses by reducing inflammation; one of these therapies is Ocrelizumab, a monoclonal antibody that selectively targets CD20-positive B cells. Ocrelizumab is generally well tolerated, with the most commonly reported infectious adverse event consisting of mild upper respiratory tract infections. [11,12]

In this report, we describe the presentation and treatment of two cases of prostatic abscesses fistulizing to the rectum in young men with RRMS on Ocrelizumab therapy.

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CASE REPORTS

Case 1

A 37-year-old male presented to hospital with a 3-month history of progressive dysuria, penile pain, and mucus discharge from his urethra. Prior workup including urine cultures and STI testing had been negative, and courses of nitrofurantoin and cephalexin yielded no improvement in symptoms. Past medical history was significant for RRMS diagnosed two years prior, for which he had been prescribed ocrelizumab. There was no history of urologic surgery/instrumentation.

On admission, urinalysis was positive for leukocytes and a large quantity of blood. A CT pelvis demonstrated bladder wall thickening with a 1.7x0.9cm posterior wall defect leading to a contained rupture into a 7.1x5.1x4cm abscess diffusely involving the prostate, bladder neck and extending into the mesorectal fat (Figure 1A).

The patient was started on IV antibiotics and underwent transperineal drain placement by interventional radiology (Figure 1A). There was no evidence of urethral stricture, with easy placement of a urethral catheter. Abscess, blood, and urine cultures were all negative. Additional testing including urine mycobacterial culture and fungal culture were negative. On day four, the patient underwent suprapubic catheter placement for maximal urinary diversion. A urine culture on the same day was positive for ureaplasma urealyticum; otherwise, repeated cultures and STI testing were negative throughout admission.

On day 12, repeat imaging demonstrated a fistula between the peri-prostatic abscess and the sigmoid colon (Figure 1B). The patient was discharged on day 20 with a transperineal drain that came out on day 30, a suprapubic (SP) catheter that was removed on day 119, and a 12-week course of doxycycline and moxifloxacin.

By day 47, the fistula was seen extending to the rectum, but overall appeared to be improving. Follow up imaging demonstrated resolution of the fistula by day 110 (Figure 1C) and of the periprostatic abscess by day 250.

Further complications included an E.Coli positive UTI 5 months after initial presentation and a 1cm penile phlegmon 11 months after initial presentation. Both were treated and resolved without further concerns. The patient developed a penile urethral stricture, ultimately requiring anterior urethroplasty 1.5 years after presentation.

Case 2

A 22-year-old male presented to hospital with a one-week history of fever, fatigue, and pain in his buttock after being hit with a ball. He previously developed right sided epididymo-orchitis with a right sided hydrocele 11 months prior, ultimately causing Systemic Inflammatory Response Syndrome (SIRS) and requiring piperacillin/tazobactam, azithromycin, and later ciprofloxacin for treatment. Otherwise, past medical history included RRMS diagnosed 3 years prior for which he was taking ocrelizumab. He had no history of urological procedures/instrumentation.

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At presentation, urinalysis was positive for leukocytes and bloodwork showed leukocytosis. A CT pelvis was completed and demonstrated a fluid collection from the base of the penis to the apex of the prostate measuring 3.7x1.4x2.5cm, as well as another fluid collection between the right obturator internus and the right border of the prostate measuring 3.9x1x2.4cm.

The patient was started on IV ceftriaxone and piperacillin/tazobactam. The collection increased in size, so a drain was inserted into the collection adjacent to the obturator internus by interventional radiology on day 5. STI testing as well as abscess, blood, and urine cultures were all negative throughout the admission. A wound culture was positive for Enterococcus faecium and Pseudomonas aeruginosa.

Between days 16-35, CT cystogram, retrograde urethrogram, CT abdomen/pelvis, and MR pelvis demonstrated a stellate fistula between the right lateral prostate, anterior rectum, ischial anal fat, medial right buttock, membranous urethra, and scrotum that measured 10.2x1.9x14.5cm (Figure 2). During this time the patient developed a large open wound in the right ischiorectal fossa that required intensive wound care and packing.

On day 39, there was decreased urine output from the foley catheter and increased drainage from the perineal wound. He had a bulbar false passage likely secondary to the abscess. He had a suprapubic catheter placed for urinary diversion on day 39. Continued drainage from the wound was noted, along with increasing purulent and feculent material. Another I&D was completed on day 62. General surgery conducted a flexible sigmoidoscopy that demonstrated a small opening in the anterior right distal rectum, consistent with a recto-cutaneous fistula. Patient refused to undergo a diverting loop colostomy. Cystoscopy on day 90 showed a reduction in the urethral fistula size, which continued to improve until discharge on day 143.

DISCUSSION

The most clinically relevant finding of our report is the occurrence of extensive, culture-negative prostatic abscesses complicated by rectoprostatic fistulization in young patients with RRMS receiving ocrelizumab. This suggest that ocrelizumab predisposes to atypical, invasive genitourinary infections with limited microbiological yield and delayed diagnosis. Both cases share similarities, including demographics (young males with RRMS) and immunosuppression exposure (ocrelizumab). Both patients developed a prostatic abscess complicated by fistulization to the rectum, an exceedingly rare complication that has not previously been described in patients on ocrelizumab therapy.[6-9] The patients presented with atypical symptoms and had negative abscess cultures; the ureaplasma in case 1 was likely a commensal organism, and the positive wound culture was likely impacted by rectal contamination. Classically gram-negative bacteria (such as E. coli), or more recently S. aureus, is easily isolated from prostatic abscesses.[5,13] Although causality cannot be established, the shared exposure to ocrelizumab, absence of traditional risk factors, and unusual microbiological findings raise concern for a therapy-associated infectious phenotype.

We hypothesize that anti-CD20–mediated immunosuppression may impair host response to genitourinary pathogens, facilitating abscess formation and local extension. To our

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knowledge, there are no guidelines on the treatment of infectious rectoprostatic fistulas, likely due to their rarity. Existing literature on rectoprostatic fistulas are in the setting of prostate cancer.[14] In these cases, surgical intervention is often required in addition to urinary and fecal diversion, and may consist of transperineal, transsphincteric, transanal, and transabdominal repair.[14,15] In the cases we present, the rectoprostatic fistulas were successfully treated with IV antibiotics, abscess drains, and urinary diversion with catheterization without the need for fecal diversion or surgical repair. The role of antibiotic therapy or Ocrelizumab cessation is currently unclear.

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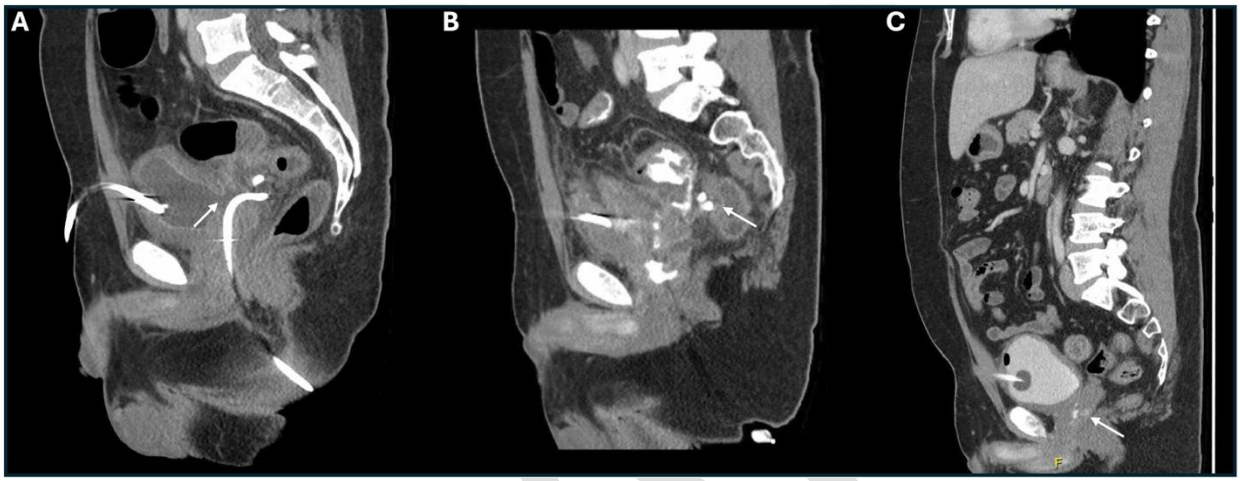
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FIGURES AND TABLES

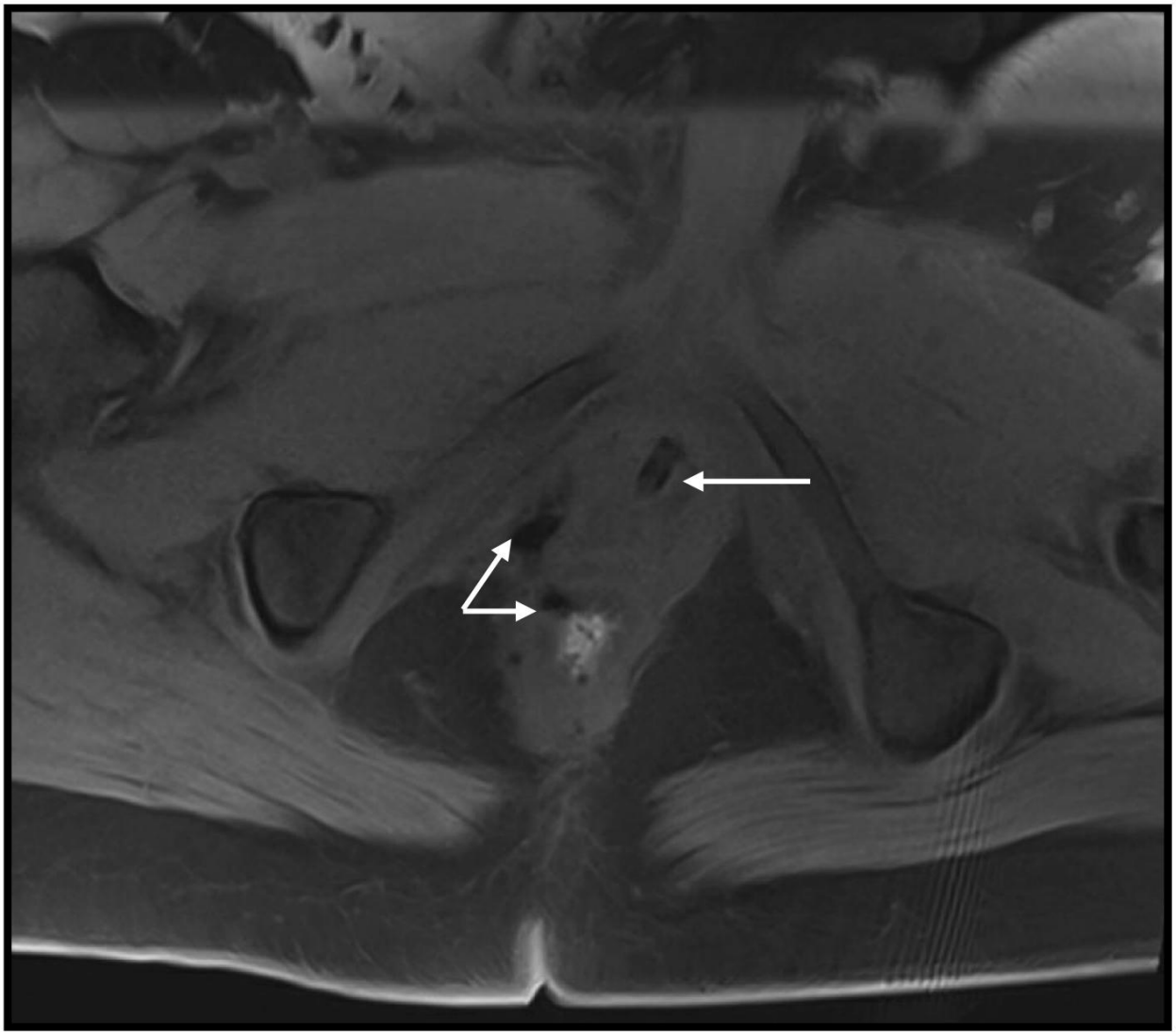
Figure 1. Sagittal images from Patient 1. Panel A shows the suprapubic catheter and transperineal drain, with the white arrow indicating the defect in the prostate/bladder neck. Panel B shows images after injection of contrast through the perineal drain, with the arrow indicating the defect in the wall of the colon with adjacent contrast. Panel C shows a CT cystogram 2 months later, with only a very small of contrast entering the prostatic abscess.



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Figure 2. T1 axial image from the MR fistulogram of Patient 2. Single arrow shows catheter in the prostatic urethra, and double arrow shows the fistula tracking towards the rectum.



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Table 1. Key details of each case are compared below. Dates are all relative to the primary hospital admission.

	Patient 1	**Patient 2**
Demographic	37M with RRMS	22M with RRMS
Ocrelizumab history	First dose: 20 months prior Most recent dose: 2 months prior Total: 4 doses of 600mg IV q6 months	First dose: 32 months prior Most recent dose: 2 months prior Total: 6 doses of 600mg IV q6 months
Presentation	3 months dysuria and penile pain	1 week fatigue, fever, buttock pain 1 year prior epididymo-orchitis + hydrocele
Microbiology	Negative aspirate & blood cultures Urine: + ureaplasma	Negative aspirate & blood cultures Wound: + Enterococcus faecium & Pseudomonas aeruginosa
Abscess	7.1 x 5.1 x 4 cm; posterior bladder wall defect involving prostate and mesorectal fat	3.7 x 1.4 x 2.5 cm; base of the penis extending into apex of prostate. 3.9 x 1 x 2.4 cm; between right obturator internus muscle and border of prostate.
Treatment	IV antibiotics, SP catheter, abscess drain	IV antibiotics, SP catheter, abscess drain, operative I&Ds
Complications	Fistula between sigmoid colon and peri-prostatic abscess Urethral stricture Penile phlegmon	Fistula between rectum, prostate, scrotum, and urethra False passage in bulbar urethra. Open wound in the right ischiorectal fossa

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Timeline	3 months of dysuria/penile pain Day 0: started on IV Antibiotics, Drain placed Day 5: SP catheter Day 12: replacement of drain, demonstration of fistula to rectum. Day 20: discharged Day 120: SP catheter removed 1.5 year: 1st stage penile urethroplasty	1 week fatigue + fever Day 0: started on IV Antibiotics Day 5: Drain placed Day 16: Fistula demonstrated Day 39: SP catheter Day 39: OR for EUA Day 62: OR for EUA Day 87: fistula improving Day 143: discharged

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