TITLE OF CASE

Acute Bacterial Prostatitis: A Physiological and Psychological Case Study

AUTHORS OF CASE Please indicate corresponding author by *

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SUMMARY Up to 150 words summarising the case presentation and outcome

Patient is a 45 year-old male who came into family practice as a follow-up from two consecutive urgent care visits. He reported a three day history of fever, chills, constipation, urinary frequency, narrow urinary stream, and low back pain. Urgent care had treated and released based on lab results, with WBC count 18,000, and clinical correlation.

Upon follow-up he was still experiencing the same symptoms and only one bowel movement with suppository. WBC down to 7.1, but PSA significantly high 25.2 (0-3.9). Medication change was made.

In the following two days the WBC count had dropped to normal and symptoms had improved. However at this point the patient showed psychological signs of insomnia and anxiety. Patient stated that his dad has passed from prostate cancer. Patient was given a sleep aid.

Two week PSA was 8.9 and four week PSA was 4.3. Patient was referred to urologist for further prostate studies.

BACKGROUND Why you think this case is important – why you decided to write it up

Prostatitis in its acute form is a medical emergency. Although it is relatively easy to diagnose it can be difficult to treat. Per protocol the first line of treatment is antibiotics but it can be difficult to find the most effective antimicrobial. In this particular case the organism *Escherichia coli* was isolated. Even with the organism identified the initial medication was not the most effective.

The other important point of this case is the value of a PSA. At this point the USPSTF has insufficient evidence to recommend for or against routine screening. The reason for this is due to both high false negatives and false positives. Although in this case the PSA value is not being used for screening but as a diagnostic tool, the psychological effects are still present. This patient was in the appropriate age range and had a positive family history of prostate cancer in his father. The patient began experiencing fatigue and insomnia in addition to all other symptoms.

CASE PRESENTATION Presenting features, medical/social/family history

HPI:
- ML is a 45 yo male complaining of fever, constipation, urinary frequency, narrow urinary stream, and low back pain
- Per urgent care
  - 9/6/08 UC CBC: WBC 18,400; start Keflex, TYL w/codeine
  - 9/7/08 UC CBC: WBC 18,800; f/u w/family provider
- Symptoms have remained unchanged for the last two days

PMH/PSH:
- OSA
- Gout
- Bariatric Surgery, total weight loss 115 lbs
Meds:
- Ambien CR
- Vitamin B
- Multivitamin
- Calcium
- Iron
- Potassium

Allergies: NKDA

Family Hx:
- + ASHD, DM, HTN
- + CA:
  - Paternal grandmother: lymphoma
  - Father: colon, prostate (deceased age 67)

Social Hx:
- Smoked 1ppd from 1983-2003
- Denies ETOH, illicit drug use
- Married with two children

ROS:
- Constitutional: + fatigue/malaise/weakness, - wt loss, 102 fever two days prior, chills/night sweats
- Cardiopulmonary: - CP, SOB, lightheadedness/dizziness
- GI:
  - No bowel movements three days
  - One bowel movement previous day with suppository
- GU:
  - Urinary frequency ~ q45 min
  - Urinary stream narrow
  - Never feels emptied
- Musculoskeletal: + low back pain
- Otherwise unremarkable

PE:
- Constitutional: Vitals: T 98.9, HR 80, BP 120/78, RR 20, Wt 188lbs, no acute distress
- HEENT: unremarkable
- Neck: without masses, supple
- Lymph: - cervical lymphadenopathy
- Respiratory: good effort, CTA bilaterally
- Cardiac: RRR, - murmur/gallop
- GI: +bowel sounds, - masses/organomegaly/hernia, + TTP all quadrants, + rebound
- Extremities: - cyanosis/edema
- Psych: + judgement/insight, decreased mood/affect

INVESTIGATIONS If relevant

Laboratory Studies
- Day 1:
  - WBC 7.1
  - PSA 25.2 (0-3.9)
- Day 3:
  - WBC: 6.2
  - UA: negative
- Week 3:
  - PSA: 8.9
- Week 6:
  - PSA: 4.3

Radiological Studies:
- 2 View AXR: unremarkable
• PA CXR: unremarkable

DIFFERENTIAL DIAGNOSIS *If relevant*
Chronic bacterial prostatitis
Chronic pelvic pain syndrome
Urinary tract infection
Interstitial cystitis
Urethritis
Pyelonephritis
Malignancy
Obstructive calculus
Foreign body
Acute urinary retention

TREATMENT *If relevant*
• In urgent care three days prior: Keflex 500mg 1PO q6hr, Tylenol w/codeine
• Day 1: d/c Keflex, start Cipro 500mg 1PO bid x 7d
• Day 3: add Klonopin 1PO hs, advised to avoid motorcycle
• Week 3: Bactrim DS 1PO bid x 10d

OUTCOME AND FOLLOW-UP
• The patient returned in week 6 for a PSA. It had already been decided that if his PSA was still elevated he would be referred to urology. His PSA was raised and care was transferred to a specialist. He continued the use of Klonopin.

DISCUSSION *including very brief review of similar published cases (how many similar cases have been published?)*

1. Is there an algorithm that exists for the treatment of ABP?
2. What are the causes and incidence of ABP?
3. Is there a screening process to differentiate prostatitis form prostate cancer?
4. How long should it take for a PSA level to normalize?
5. What is the psychological impact of an elevated PSA?
6. What are the pros and cons of getting a PSA test?

1. Conservative measures include bed rest, analgesics, stool softeners, and hydration. Initial therapy with a fluoroquinolone twice daily is usually effective and can be given until culture and sensitivity test results are known. If the clinical response is satisfactory, treatment is continued for about 30 days to prevent chronic bacterial prostatitis. If sepsis is suspected, broad-spectrum antibiotics covering gram-positive and gram-negative organisms (eg, a combination of ampicillin and gentamicin) should be given IV until the bacterial sensitivity is known. If the clinical response is adequate, the patient continues IV therapy until afebrile for 24 to 48 h and then is switched to oral therapy. If complete urinary retention occurs, bladder drainage by suprapubic cystostomy is preferred over a urethral catheter (which may lead to bacteremia). Rarely, prostate abscess develops and should usually be treated surgically.

2. About 80% of bacterial prostatitis cases result from infection by *Escherichia coli*; the rest are due to infection by *Klebsiella, Enterobacter, Proteus, Pseudomonas, Streptococcus, or Staphylococcus*. These organisms probably spread to the prostate by the bloodstream or from ascending urethral infection, invasion of rectal bacteria via lymphatics, reflux of infected bladder urine into the prostate ducts or, less commonly, infrequent or excessive sexual intercourse or such procedures as cystoscopy or catheterization. Chronic prostatitis usually results from bacterial invasion from the urethra.

It’s estimated that 2 of every 10,000 people who seek outpatient care do so because of prostatitis. As many as 35% of males older than age 50 have chronic prostatitis;
about 50% of males will be diagnosed with prostatitis at some point in their lives.

3. There is one screening process that has been developed and, according to some research, is safe and effective in a population with asymptomatic elevated PSA values and may decrease the number of potentially unnecessary biopsies. The screening protocol for prostatitis consists of two tests: expressed prostatic secretion and post-prostate massage urine, also known as the voiding bottle 3, or VB3 test. In one study, the screening protocol reduced the number of biopsies performed by 18%, and increased the positive predictive value of PSA for prostate cancer significantly from 37% to 51%.

4. With appropriate treatment the PSA level should normalize (3.9 or less) within six weeks. Experts recommend avoiding caffeine, alcohol or spicy foods several days prior to getting a PSA test as those can falsely raise a PSA level. In addition, bicycle riding, weight lifting, horse back riding, or any activity that can put a strain in the prostate area should be avoided for at least 48 hours before the blood draw. Stress is also thought to be a contributing factor.

5. According to the ACS, men with PSA value greater than 10.0 ng/mL are at a 67% risk of developing prostate cancer. This still leaves one-third of the men to go through all the psychological torment of testing for cancer. Furthermore, the incidence of prostate cancer increases with age, but so does the PSA value naturally. Since a PSA can be elevated for a variety of reasons, practitioners should wait several weeks and test PSA again to determine if the PSA if truly elevated and treatment should be rendered. During this waiting period men can experience many psychological effects such as depression, anxiety, and sleep insomnia.

6. Pros:
   - At this point it is the best early detection tool we have
   - PSA levels over months or years is a very strong sign of aggressive prostate cancer.
   - North America has seen a 25% decline in prostate cancer-related deaths, no doubt testing has contributed to this trend

Cons:
   - Sometimes the PSA test finds clinically insignificant prostate cancers – tumours that are smaller than 0.5cc in volume – which may never become life threatening
   - The PSA test is not perfect. Sometimes PSA levels are normal even when cancer is present
   - Side effects of biopsies include bleeding and infection. Side effects of treatment, such as surgery, radiation and hormonal therapy, include incontinence and erectile dysfunction

LEARNING POINTS/TAKE HOME MESSAGES 3 to 5 bullet points

- ABP is a common infection occurring in men. It is important to diagnose quickly and correctly.
- ABP is most commonly caused be the bacteria *Escherichia coli* and is best treated for several weeks with a fluoroquinolone.
- PSA can be a good value for tracking the progress of treatment, or lack thereof. Be sure not to let all your judgement be based on one laboratory value.
- Keep in mind the psychological implications of a high PSA value for a man. Be sure to have evidence for advanced testing before going through with it.

REFERENCES

5. Prostatitis screening reduces unnecessary biopsies in men with elevated PSA. J Urol