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Case Report

***Candida albicans* in Urinary Tract or in Seminal Sac**

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Introduction

The urinary tract consists of the kidneys, the bladder and accessory structures. Urinary tract infections (UTIs) occur more frequently in females than males because the female urethra is short (about 1.5 inches, compared 8 inches in the male) and is adjacent to the genital and intestinal tract.(1)

UTIs are primarily of two types: cystitis, which is infection of the bladder and pyelonephritis which is infection of the renal parenchyma. Urethritis which occurs often is generally discussed as a sexually transmitted disease, although the acute urethral syndrome is not placed in the sexually transmitted category, strictly speaking. Among the bacteria most frequently isolated in UTIs are *Escherichia coli*, *Klebsiella* sp, *Staphylococcus saprophyticus*, *Proteus mirabilis*, *Pseudomonas aeruginosa* etc. Most infections involving the kidneys are acquired by the ascending route. However, yeast (usually *Candida albicans*), *Mycobacterium tuberculosis*, *Salmonella* sp, or *Staphylococcus aureus* in the urine often indicates pyelonephritis acquired via hematogenous spread.(2)

Report

A 27 years old medical student from Ambrose Alli University reported to the University Health center in January 2003 with a history of painful micturition. Urinary tract infection was suspected and consequently Pefloxacin was

prescribed. On completion of the course, no meaningful improvement was observed. In July 2003, during a practical class where processing of urine specimens was discussed, the student informed the scientist of his condition who picked interest in the student's case. On interviewing the student, it was gathered that the painful urination was sporadic and sometimes accompanied with a slimy discharge. The student also complained of frequent wet dreams since the beginning of the disorder. He also complained of pain during and after urination around the pubic area.

A sterile, screw capped, wide mouthed, container was given to the student and was instructed to collect a mid-stream early morning urine the next day. After processing the sample using standard bacteriological techniques as described by Mackie and McCartney,(3) one to two pus cells per high power field were counted and no growth on both Cystine Lactose Electrolyte Deficiency Agar (CLED) and Blood Agar (BA) was obtained after over night incubation of the specimen.

Another sterile urine sample and blood was collected. Syphilis antibodies screening (VDRL) was negative. The microscopic examination of the centrifuged urine deposit revealed a yeast cell and overnight incubation of the urine sample showed a colony which was suspected to be a contaminant. All attempt made to explain the presence of the yeast cell in the urine specimen

proved abortive as the student denied indulging in any form of sexual intercourse with a female counterpart since the onset of the discomfort. A third bottle was again given to the student who this time around produced a very turbid and slimy urine the next day. After processing, it was found out that, although the pus cells counted in the centrifuged deposit of the urine sample were 2-3/HPF, a lot of sluggish spermatozoa were seen along side many yeast cells. The overnight culture of the specimen yielded a moderate growth of organisms. The Gram Staining of the colonies showed large Gram positive organisms suspected to be yeasts cells. Germ Tube Test (GTT) was then used to identify the organism as *Candida albicans*. Blood was subsequently collected for HIV test which was negative. Fluconazole was prescribed to the student and a repeat test was done two weeks after. No yeast cell was seen in the deposit of the centrifuged urine specimen and an over night culture of the repeat specimen revealed no growth. At the time of writing this report, 4 months after, the student has not reported of painful urination and turbid urine production.

Discussion

Even though *Candida albicans* is incriminated in the causation of UTI, the case of this student raises many questions. If this was a case of pyelonephritis, cystitis or urethritis, why couldn't we isolate the pathogen each time the specimen was collected? Why the inconsistent production of turbid urine containing spermatozoa? The presence of spermatozoa in the urine with yeast cells (*Candida albicans*) could be an indication of seminal sac infection.

Further more, the examination of the high vagina swab of the patient's sex partner revealed a moderate growth of *Candida albicans* which was treated with Fluconazole.

References

1. Nesrter E.W., Roberts C.E., Pearsall N.N., et al: Microbiology: A human perspective, (1995) Mc Graw – Hill 6th Edition
2. Ellen J.B, Lange R.P, Sydney M.F. Diagnostic microbiology: Mosby, 9th edition (1994) page 384-385.
3. Mackie T.J. and McCartney J.E. Practical Medical Microbiology Churchill Livingstone, Longman Group UK, 13th edition (1989) page 601-649

Reviewer's Comments:

The exact cause of non-bacterial chronic prostatitis/chronic pelvic pain syndrome is a matter of controversy and organisms presumably responsible viz. Chlamydia, U. urealyticum and rarely Candida are often difficult to isolate. Even when isolated, the exact cause and effect relationship is difficult to ascertain. In the present case study, there is no doubt that the yeast cells originated from the lower urinary tract. Unlike vesical infections, organisms responsible for seminal and prostatic infections remain sequestered and may not necessarily be isolated in all samples of urine. Comparing examination of EPS (expressed prostatic secretions) with mid stream specimen of urine would probably have confirmed the prostatic or seminal vesicular origin of the organism. In literature, documented cases of Candidiasis are rare. (Indudhara et al. Isolated invasive Candidal prostatitis. Urol Int. 1992;48:362-364). Satisfactory clinical response to Fluconazole in this patient indicates a probable Candidal etiology, though clinical follow-up along with repeated examination of EPS for Candida over a longer term is suggested for confirmation.