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Comparative Evaluation of Prostatic Smear and Semen Analysis in The Diagnosis of Chronic Prostatitis

Thesis

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List of Abbreviations

ABP	Acute bacterial prostatitis
AIP	Asymptomatic inflammatory prostatitis
ART	Assisted reproductive techniques
BPH	Benign prostatic hyperplasia
CBP	Chronic bacterial prostatitis
CD	Cluster of differentiation
CMV	Cytomegalovirus
CP	Chronic prostatitis
CPPS	Chronic Pelvic Pain Syndrome
CZ	Central zone
DRE	Digital rectal examination
EPS	Expressed prostatic secretion
HPF	High power field
HSV	Herpes simplex virus
NIH	National Institutes of Health
PAF	Prostate antibacterial factor
PAP	Prostatic acid phosphatase
PCa	Prostate cancer
PPL	Positive peroxidase leucocytes
PPMT	Pre- and Post-Massage Test
PSA	Prostatic specific antigen
PZ	Peripheral zone
SD	Standard deviation
TRUP	Transurethral resection

TRUS	Trans-rectal ultrasonography
TZ	Transition zone
UTI	Urinary tract infection
WBC	White blood cell
WHO	World Health Organization

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ABSTRACT

Background: Chronic prostatitis is one of the most common medical problems among andrology and urology patients. Besides being the primary problem in many cases, it seems to play an important contributing role "major or minor" in a significant proportion of patients whether at the level of fertility, sexology or venerology. Consequently, effective management of the prostatic pathology has a great impact on the overall successful management of such andrologic problem.

Aim of the Work: to provide an objective comparison between traditional prostatic discharge analysis and traditional semen analysis as regards detection of pus cells in cases of prostatitis as well as to assess the possible advantage(s) of applying some modifications to enhance the diagnostic value of the previous techniques. These would include preliminary centrifugation of expressed prostatic discharge and preliminary peroxidase staining of semen sample before microscopic examination.

Patients and Methods: This pilot study included 40 patients suffering from prostatitis except acute prostatitis. The patients were recruited from the outpatient clinic of Venerology and Andrology department of Ain Shams University Hospitals in the period from February 2021 to November 2021.

Results: The current study included 40 patients suffering from any kind of prostatitis except acute prostatitis. Their age ranged between 30 and 50 years old with a mean age of 39.60 ± 4.52 years. Duration of disease ranged from 4-18 months with a mean of 7 ± 3.1 months. Most of patients were married (38, 95%). Main symptoms presented among studied patients were groin pain (37.5%), groin pain and painful micturition (20%) and groin pain, painful micturition and sexual problems (42.5%)

Conclusion: prostatic smear examination revealed higher sensitivity in detection of infection compared to semen analysis especially if combined with centrifugation. In addition, peroxidase positive cell testing revealed a significant role in detection of infection if the diagnosis is made solely on semen analysis results.

Keywords: Comparative Evaluation, Prostatic Smear, Semen Analysis, Chronic Prostatitis.

Introduction

Chronic prostatitis is one of the most common medical problems among andrology and urology patients. Besides being the primary problem in many cases, it seems to play an important contributing role "major or minor" in a significant proportion of patients whether at the level of fertility, sexology or venerology ***(Pellati et al., 2008).***

Consequently, effective management of the prostatic pathology has a great impact on the overall successful management of such andrological problem. One of the main concerns in the management of prostatitis is the critical need for a sensitive method to evaluate the degree of prostatic inflammation (whether for initial diagnosis or during repeated follow-up). Till now, rectal prostatic massage with subsequent microscopic examination of the expressed prostatic secretion is considered the gold standard for the diagnosis (and for evaluating the severity) of prostatitis ***(Khan et al., 2017).***

Nevertheless, there are many inherent drawbacks and difficulties in the previous technique. Among these are the need to subject the patient to repeated somewhat painful massage, psychologically unacceptable nature of the technique, the

likelihood of missing some areas during massage, the high possibility of specimen contamination "making it unsuitable for culture", in addition to some instances of mechanical or technical difficulties as in extremely obese patients, those with anal fissure and cases with high grade inflammation ***(Zorman et al., 2015)***

Notorious for their weak sensitivity and/or specificity are the other alternative diagnostic techniques as semen analysis, serum prostatic specific antigen (PSA) and trans-rectal ultrasonography (TRUS) ***(Ludwig et al., 2003).***

Lack of specificity and sensitivity of traditional semen analysis in the diagnosis of prostatic inflammation has been reported. As regards specificity -and in the absence of special staining-, round cells may be either pus cell or spermatogenic cells**.** As regards sensitivity, usually there is unexpectedly striking lack of correlation between the density of pus cells as reported in seminogram and that detected on prostatic smear examination ***(Schaeffer et al., 2002).***

The exact cause of this discrepancy is poorly understood. Possible explanations include masking of pus cells by the huge number of sperms in the semen sample, compartmentalization of the cellular components in the somewhat viscid seminal sample,