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A STUDY OF CAUSATIVE MICRO-ORGANISMS FOR VAGINITIS IN RURAL AREA OF ENATHUR, KANCHEEPURAM WITH PAP SMEAR

Pathology

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ABSTRACT

Vaginitis is the most common problem in adult women. The objective of this study is to determine the prevalence of microorganism and common coinfections from pap smear in rural area of Enathur, Kancheepuram. A study was conducted in the Department of pathology, Meenakshi Medical College and Research Institute, Kancheepuram. Samples of Pap smear from patients with symptoms of vaginitis were studied from June 2016 to May 2017. All the smears were stained with papanicoulou and hematoxylin+eosin stain. A total number of 625 cases are collected and statistically analyzed.

The microorganisms noted in this area are coccobacilli, candida and trichomonas. The most common cause for vaginitis is bacterial vaginosis, and the frequent mixed infection is Bacterial vaginosis with candidiasis. Simple conventional pap smear test is helpful to identify the causative organism for vaginitis.

KEYWORDS

Bacterial vaginosis,Vaginal candidiasis, Trichomonas vaginalis, Atypical squamous cells of undetermined significance (ASCUS), High grade squamous intraepithelial lesions (HSIL) and Papanicolaou smear.

Introduction:

Vaginitis and vaginal discharge are one of the most common problems among reproductive women. Bacterial vaginosis, Candidiasis and Trichomoniasis are responsible for 90 % of the cases associated with abnormal vaginal discharge and vaginitis (3,4). Vaginal infection can produce a number of clinical symptoms like increased vaginal secretions along with sloughed vaginal epithelial cells and inflammatory cell, pain abdomen, itching, low backache and menstrual disturbances (2,3).

Bacterial vaginosis is a complex vaginal infection that results from loss of vaginal bacterial flora, affects millions of women annually (5). Most of the women with bacterial vaginosis have a malodorous vaginal discharge and is associated with several adverse health effects including preterm labour, pelvic inflammatory disease and low birth weight. Cytomorphology includes “clue cells”, absence of lactobacilli and scant neutrophils(10).

A large proportion (about 40 %) of women with detectable Candida organisms may be asymptomatic. Clinically, the infection produces a white, cheesy, thick discharge with a burning sensation and intense itching. Pruritus is a common symptom of Candida infection involving the vulvar region, attimes there may be minimal vaginal discharge (3,8).

In Papanicolaou stained smears, cytomorphology of candida appear as pseudo, true hyphae and yeast form. In most of asymptomatic women only yeast budding forms were observed. Sometimes the organisms cause a peculiar shish-kebab arrangement of epithelial cells (6,10). With Candida infections, squamous cells often show increased evidence of maturation, with parakeratosis and hyperkeratosis. Occasional groups of mature squamous cells can show prominent perinuclear degenerative vacuolar change which can be mistaken for koilocytosis. In addition, some intact squamous cells may show nuclear enlargement that can prompt an interpretation of atypical squamous cells of undetermined significance (8).

Trichomonas vaginalis is the most common parasitic infection of female genital tract. It is small, round to oval shaped organisms with an indistinct eccentric nucleus and red cytoplasmic granules. Generally, fuzzy background with aggregates of neutrophils also called cannon balls is present. Leptothrix is associated with TV in approximately 80% of cases (7).

Nearly 50 % of the women who have this infection harbor this parasite in the latent phase and are asymptomatic. During the symptomatic phase, the organisms occur in the vagina and occasionally in the secretions of the Skene and Bartholin glands. Approximately 10–20 % of the women, lower urinary tract infection may occur and present as dysuria and urethral discharge (1).

Material and Methods

The study of causes for vaginitis was conducted in the Department of Pathology, Meenakshi Medical College and Research Institute, Enathur, Kancheepuram, over a period of one year from June 2016 to May 2017. This study involves data of 625 patients referred for cytological evaluation of Pap smear. All pap smear were collected by Department of Gynaecology and sent to Pathology laboratory in a coplin jar containing 95% ethanol. All the smears were stained with routine Papanicolaou stain and hematoxylin+Eosin stain. All the smears were examined carefully for various cytological lesions and causative organisms. The reports were given as per Bethedsa 2001 and obtained data has been analysed.

Inclusion criteria: All the patients who attended Gynaecology Out-Patient Department with the symptoms of vaginitis were included in the study.

Exclusion criteria: Patient who received antibiotics previously, prolapse uterus, diagnosed clinically as Intraepithelial lesion / malignancy and routine cervical screening samples were excluded from the study.

Result:

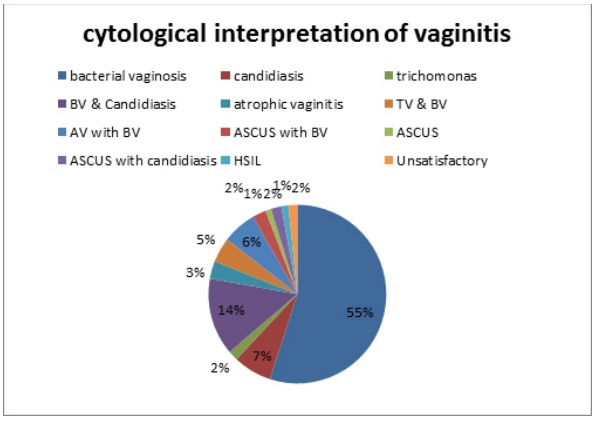
In our present study, totally 625 Pap smear samples from patients ranged from 20 to 70 years were evaluated. Majority of patients were in the age between 25 to 45years.

Table -1 : Age distribution

S. NO	Age	Number of cases	Percentage of cases
1.	20 – 30	136	22%
2.	31- 40	188	30%
3.	41-50	178	28%
4.	51-60	93	15%
5.	61 and above	32	5%
	Total	625	

Out of total 625 cases, 348 cases are Bacterial vaginosis, 41 cases are candidiasis, 20 cases are atrophic vaginitis, 11 cases are Trichomonas Vaginalis, 6 cases are Atypical squamous cells of undetermined significance (ASCUS), 8 cases are HSIL, 10 cases are unsatisfactory, 86 cases are Bacterial Vaginosis with candidiasis, 28 cases were Trichomonas Vaginalis with Bacterial vaginosis, 39 cases were atrophic vaginitis with Bacterial vaginosis, 16 cases were ASCUS with Bacterial vaginosis and 12 cases were ASCUS with candidiasis (Refer Fig 1)

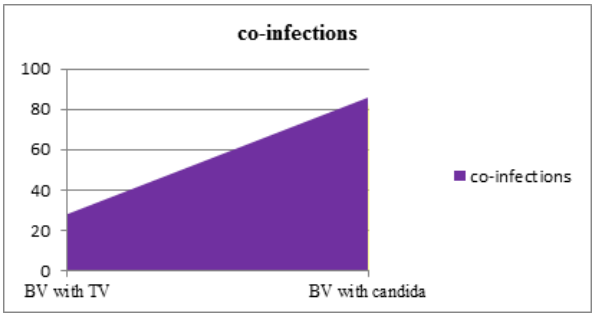
Figure : 1 Cytological interpretation of vaginitis



The most common pathogenic microorganism diagnosed in this area is Bacterial vaginosis and most common coinfection is Bacterial vaginosis with candida. Mixed infection, microorganism associated inflammation, micro-organism associated intraepithelial lesions are also noted in this study.In this present study, Bacterial vaginosis and Trichomonas Vaginalis are common in reproductive age ranging from 25 to 45 years whereas candidiasis was seen in all the age groups.

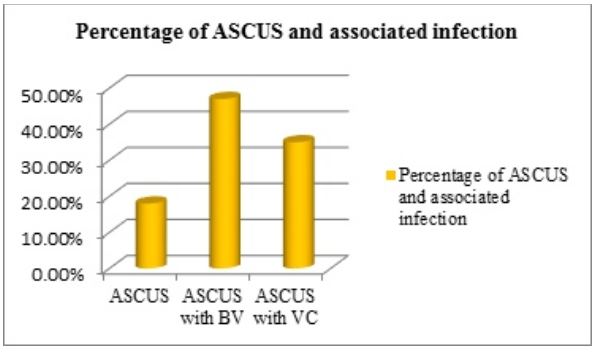
Most common clinical manifestations of vaginitis in this study was history of thick and thin whitish discharge, blood mixed discharge, foul smelling discharge, Burning micturation,vaginal itching, abdominal pain, and low backache.Other symptoms like dyspareunia, menstrual disturbances and greenish yellow discharge are also presented. Coinfection, i.e. two infections occurring simultaneously in the same case is common in the study. It includes combination of Bacterial vaginosis with candidiasis (75%) and Bacterial vaginosis with Trichomonas Vaginalis (25%). (Refer Fig2)

Fig 2: Common coinfection reported in the study



In this study 34 cases of ASCUS were reported .In that 16 cases were ASCUS associated bacterial vaginosis and 12 cases were ASCUS associated candida(Ref Fig3)

Fig 3:Report of ASCUS in the study



Discussion

Vulvo-vaginitis is a common infection that affects healthy women of all ages. One or more infections will develop once in women's lifetime, during reproductive age and postmenopausal period. In our study, the prevalent microorganism among the population of rural area, Enathur is Bacterial Vaginosis with an incidence of 55 %. Most common coinfection in the present study is, Bacterial Vaginosis with candiaisis at 14%. Atrophic Vaginitis with Bacterial Vaginosis around 6.2 % is mostly reported in post menopausal age group. In this study, 2.5 % cases of ASCUS associated Bacterial Vaginosis, 1.9% cases of ASCUS associated candidiasis and 4.5% cases of Bacterial vaginosis with Trichomonas Vaginalis is also reported.

Barouti et al (3), reported prevalence of Bacterial vaginosis among 17% women of reproductive age group with no significant association between Bacterial Vaginosis and Trichomonas Vaginalis, which is in contrast to this study. Madivanan et al (10), reported 96 % of bacterial vaginosis and coinfection with Trichomonas Vaginalis as similar to the present study. Some of studies showed that, significant relationship between Trichomonas Vaginalis and BV infection might be due to increase in vaginal pH by phagocytic action of Trichomonas Vaginalis which provides an anaerobic environment, condition for the growth of bacterial microorganisms.

Renuka et al (2), in their study on 700 cases of pap smear from married women found an evidence that reproductive tract infection is one of the risk factor for cervical cancer, which is also exacerbated by poor genital hygiene. Some of the studies (6,7,9) has also reported coinfection of Bacterial Vaginosis associated with Trichomonas Vaginalis, candida, gonorrhoea and Chlamydia trachomatis.

In the present study, frequency of microorganism next to Bacterial Vaginosis is candida (14%) followed by Trichomonas Vaginalis (1.8%), also 1% cases were reported as ASCUS, 1.3% cases were reported as HSIL, and 1.6 % of cases was considered unsatisfactory.

Barouti et al (3), in his study reported 17 % cases of Bacterial vaginosis, 10.6 % cases of candida and 0.4% of Trichomonas vaginalis. The frequency of organism reported in this study is similar to our results. In our current study 60 to 70 % cases of microorganisms was reported in reproductive age group, similar to the available literature (5,6,7,10).

Conclusion:

Vaginal infection is an important public health problem of women and its prevalence was consistent with many studies. Infection of lower genital tract was one of risk factor for cervical cancer, more attention and awareness should be created among public regarding proper personal hygiene. Pap smear is helpful to differentiate infective vaginitis from non infective vaginitis for proper management.

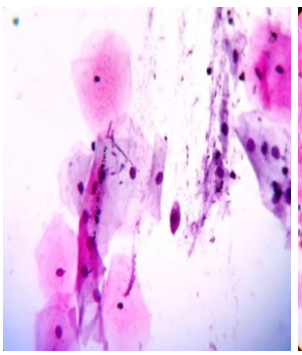


Fig4:Picture showing hyphae and yeast form of candida (40x, pap stain)

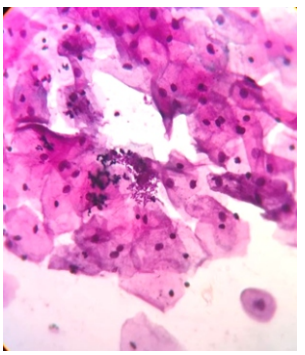


Fig5:Picture showing clusters of yeast form of candida(40x,pap stain)

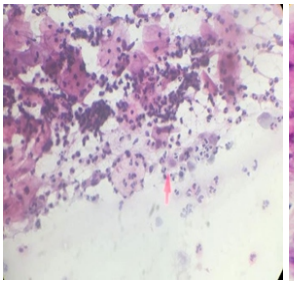


Fig6:Picture (40x,pap stain) showing Trichomonas

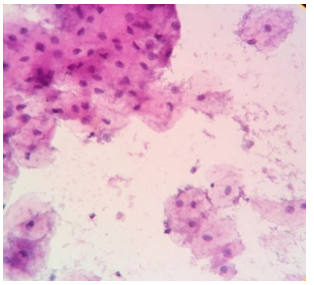


Fig7:Picture showing clue cells in Bacterial vaginosis(40x,pap stain)

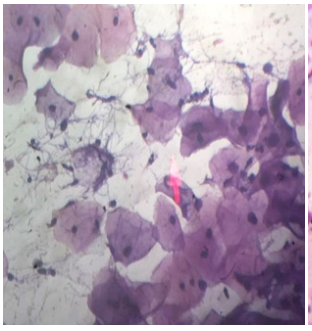


Fig8:Picture showing leptothrix in Trichomonas (40x, pap stain)

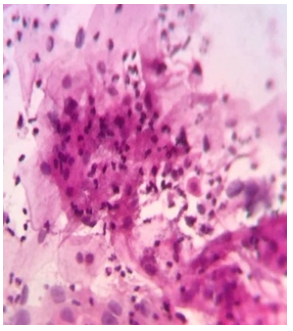


Fig9:Picture showing features of ASCUS (40x,pap stain)

REFERENCE

1. Anuradha, B., Joanna, M. C. K., & Praveena, M. (2015). Prevalence of Trichomonas vaginalis Infection in Women of Reproductive Age Group. Int. J. Curr. Microbiol. App. Sci, 4(12), 42-49.
2. Sultana, A., & Renuka, B. N. (2014). cytopathological study of cervical Smear: A Hospital Based retrospective Study. Medical Journal of Islamic World Academy of Sciences, 22(1), 42-49.
3. Barouti, E., Farzaneh, F., Sene, A. A., Tajik, Z., & Jafari, B. (2013). The pathogenic microorganisms in papanicolaou vaginal smears and correlation with inflammation. Journal of family & reproductive health, 7(1), 23.
4. Maria, C., Zahra, R., & Sara, P. (2014). Prevalence of cervical-vaginal infections in the pap-smear samples in Iran. Global journal of health science, 6(1), 201.
5. Bautista, C. T., Wurapa, E., Sateren, W. B., Morris, S., Hollingsworth, B., & Sanchez, J. L. (2016). Bacterial vaginosis: a synthesis of the literature on etiology, prevalence, risk factors, and relationship with chlamydia and gonorrhea infections. Military Medical Research, 3(1), 4.
6. Morris, M. C., Rogers, P. A., & Kinghorn, G. R. (2001). Is bacterial vaginosis a sexually transmitted infection?. Sexually Transmitted Infections, 77(1), 63-68.
7. Swygard, H., Sena, A. C., Hobbs, M. M., & Cohen, M. S. (2004). Trichomoniasis: clinical manifestations, diagnosis and management. Sexually transmitted infections, 80(2), 91-95
8. Vermitsky, J. P., Self, M. J., Chadwick, S. G., Trama, J. P., Adelson, M. E., Mordechai, E., & Gygax, S. E. (2008). Survey of vaginal-flora Candida species isolates from women of different age groups by use of species-specific PCR detection. Journal of clinical Microbiology, 46(4), 1501-1503.
9. Madhivanan, P., Bartman, M. T., Pasutti, L., Krupp, K., Arun, A., Reingold, A. L., & Klausner, J. D. (2009). Prevalence of Trichomonas vaginalis infection among young reproductive age women in India: implications for treatment and prevention. Sexual health, 6(4), 339-344
10. Madhivanan, P., Krupp, K., Chandrasekaran, V., Karat, C., Arun, A., Cohen, C. R., ... & Klausner, J. D. (2008). Prevalence and correlates of bacterial vaginosis among young women of reproductive age in Mysore, India. Indian journal of medical microbiology, 26(2), 132.