

Cytological pattern of pelvic inflammatory disease (PID) cases with its histopathological correlation in premalignant lesion

Shanmugasamy K^{1,*}, Anandraj Vaithy², Dhananjay S. Kotasthane³

¹Associate Professor, ²Assistant Professor, ³Professor & HOD, Dept. of Pathology, Mahatma Gandhi Medical College & Research Institute, Sri Balaji Vidhyapeeth University, Puducherry

*Corresponding Author:

Email: samypatho@gmail.com

Abstract

Introduction: Pelvic Inflammatory Disease (PID) is the most prevalent in Indian women associated with Non specific inflammation predominantly. It is more common in developing countries due to improper hygiene. So the present study was aimed to study the cervical cytology associated with PID.

Materials and Method: This study was carried out in the department of pathology, Mahatma Gandhi Medical College and Research Institute, Sri Balaji Vidhyapeeth University. All the Pap smear done for PID cases during the period of January 2014 to December 2015 were collected and analysed.

Results: Out of 330 pap smear, higher incidence of PID were observed in third and fourth decades of life. Out of 330 smears, nearly 80% of the cases show non-specific inflammation. The most common presenting complaints are vaginal discharge (82%) followed by pelvic pain (61%) and bleeding per vagina(24%). Out of 330 pap smear, 7.5% cases accounts for Candidial infection, Trichomonas and Bacterial vaginosis accounts for 3% each and Low Grade Squamous Intraepithelial Lesion(LGSIL) accounts for 3.5% of cases.

Conclusion: This study reveals the incidence of infections and pre-malignant lesions associated with PID. So it implies the significance of the cervical cancer screening among the rural women to detect the early lesions in cervical cancer.

Keywords: PID, Pap smear, Squamous intraepithelial lesion.

Introduction

Pelvic Inflammatory Disease (PID) is one of the most common conditions treated by gynaecologist and also most commonly occurs in Indian women. Pelvic inflammatory disease is an infection that begins in the vulva or vagina and spreads upwards to involve most of the structures in the female genital systems, resulting in pelvic pain, adnexal structures, fever and vaginal discharge. Apart from other infections, puerperal infections occur after normal or abnormal deliveries are also important causes of PID.

In most of the rural areas of India, PID is most common with the women due to improper hygiene. The long standing cervical infection can leads to the persistent inflammation, which further leads to cellular changes. These cellular changes are at risk for malignant transformation. So periodic cervical screening of rural women and also proper follow up of the persistent inflammation cases should be done.^(1,2) So the novel aim of the study is to know the cytological pattern of PID cases in rural women of India and to study the prevalence of premalignant conditions in women with PID. Histo-pathological correlation of pre-malignant lesions are also done in this study.

Materials and Method

The study was a retrospective study, undertaken to study the cytological pattern of pelvic inflammatory disease (PID) and to know the incidence of various infection in PID.

This study was conducted by department of pathology, Mahatma Gandhi Medical College and Research Institute, Sri Balaji Vidhyapeeth University. All the Pap smear done for PID cases during the period of January 2014 to December 2015 were collected and analysed.

For all cases cervical smears were stained by PAP stain. Out of 4580 PAP smears 330 cases were clinically diagnosed to have PID. Cytological pattern of these 330 Pap smears are studied and the Low Grade Squamous Intraepithelial Lesion in Pap smear were correlated with histopathology.

Results

Table 1: Cytological distribution of cases in PID

S No	Diagnosis	Number of cases (%)
1	NILM	274 (83%)
2	Candida	24 (7.5%)
3	Trichomonas	10 (3%)
4	Bacterial vaginosis	10(3%)
5	LGSIL	12 (3.5%)
	Total	330 (100%)

Table 2: Common symptoms of PID cases

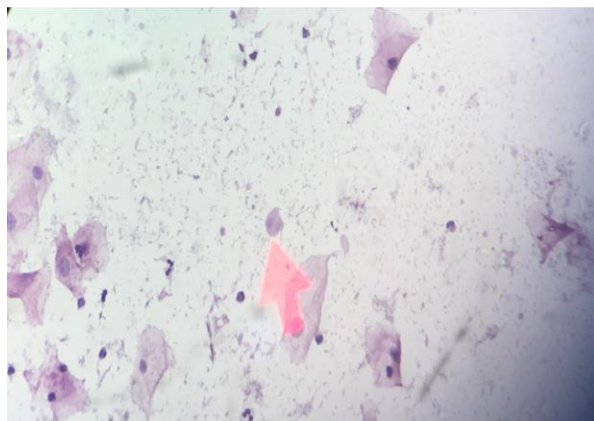
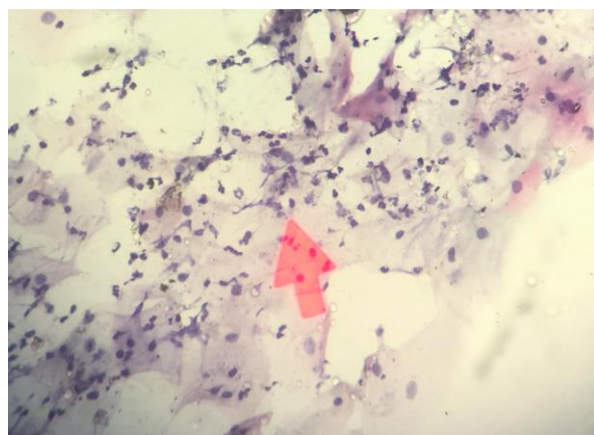
S No	Symptoms	Number of cases (%)
1	Vaginal discharge	82%
2	Pelvic pain	61%

3	Bleeding Per Vagina	24%
4	Dyspareunia	10%

5	Fever with chills	15%
---	-------------------	-----

Table 3: Incidence of disease in different age groups

Age of the patient	Number of cases	Number of cases showing Candida	Number of cases showing Trichomonas	Number of cases showing Bacterial Vaginosis	Number of cases showing LGSIL
< 20 years	10	4 (40%)	2 (20%)	4 (40%)	-
20 -40 years	256	16 (6%)	8 (3%)	6 (2%)	8 (3%)
>40 years	64	4 (6%)	-	-	4 (6%)

**Fig. 1: Pap smear showing Trichomonas (40x)****Fig. 2: Pap smear showing budding forms of Candida(40x)**

The present study includes 330 Pap smear for the period of two years, the patient were clinically diagnosed to have PID.

Among 330 Pap smear, higher incidence of PID were observed in third and fourth decades of life. Out of 330 smears, nearly 80% of the cases show non-specific inflammation.

The most common presenting complaints are vaginal discharge (82%) followed by pelvic pain (61%) and bleeding per vagina(24%).

Out of 330 pap smear, 7.5% cases accounts for Candidial infection, Trichomonas and Bacterial vaginoses accounts for 3% each and Low Grade

Squamous Intraepithelial Lesion (LGSIL) accounts for 3.5% of cases.

Among 330 cases 256 cases fall under 21 to 40 years of age, out of that LGSIL accounts for 3% and candidiasis accounts for 6% of cases.

Discussion

Out of 4580 Pap smear cases, 330(7%) Pap smear done for PID cases. Among these PID cases commonest symptoms were vaginal discharge(82%) followed by pelvic pain(61%). This observation is in concordance with similar study conducted by Papa Dasari et al⁽³⁾ & Anuja B et al.⁽⁴⁾ Also other symptoms like bleeding per vagina, dyspareunia and fever with chills are documented minimally by these patients.

In the present study, majority of the smears are Non-specific Inflammatory smear (NILM) accounting to 83%. Candida accounts for 7.5%, Trichomonas and Bacterial vaginoses accounts for 10% each. Similar findings were observed in study conducted by Archana Sharma et al,⁽⁵⁾ Maruthi DK et al⁽⁶⁾ & Eram U et al.⁽⁷⁾

Regarding the premalignant lesion in our study LGSIL accounts for 3.5%. This findings were in discordance with the study conducted by Misra JS et al⁽⁸⁾ and Abdul MA et al.⁽⁹⁾ This discordance is mainly due to sampling the women who are attending the hospital OPD. It is not the direct community based study.

Most of the cases with premalignant lesion (LGSIL) were found under the age group of 20-40 years in this study. This finding is similar to the study conducted Misra et al.⁽⁸⁾

Out of 12 cases of LGSIL, 8 cases where under the age group of 20 -40 years and 4 cases are under the age group of 40-50 years. This information depicts us the importance of cervical cancer screening in the reproductive age group.

The main cause for the cervical cancer is Human Papilloma Virus (HPV) infection. It is one of the most powerful human carcinogen and also been implicated not only to cervical cancer but also to cancer at other sites.⁽¹⁰⁾

Also among the premalignant lesion, about 1% of LGSIL and 12% of HGSIL will progress to Invasive carcinoma.^(11,12) So it is necessary to screen for premalignant lesions in PID cases.

Out of the 12 cases of LGSIL in Pap smear, all 12 cases turned out to be LGSIL in histopathology also. 7 cases predominantly showed HPV associated changes like koilocytic atypia. These findings are in concordance with the study conducted by Anuja B et al.⁽⁴⁾

Conclusion

Cervical cancer screening was proved to be an important part of preventive health care of women. This study highlights that there is a large proportion of females who suffered from Nonspecific inflammation. This study also identified the premalignant lesions in patient presents with PID. So it is necessary to create a cervical cancer screening awareness among the rural population. Proper and periodic screening programme helps in decreasing the morbidity and mortality due to cervical cancer.

References

1. ACOG practice bulletin. Clinical management guidelines for Obstetrician and Gynecologist Cervical Cytology Screening *Obstet Gynecol* 2003;102:417-27.
2. Denisa B, Odeta H. PAP smear and colposcopic evaluation of uterine cervix. *International Journal of Science and Research*.2016 May: 5(5).
3. Papa Desari, S Rajathi, Surendra V Kumar. Colposcopic evaluation of cervix with persistent inflammatory pap smear: A prospective analytical study. *CytoJournal* 2010;7:16.
4. Anuja B, Sayali K, Sunita G, Anjali K, Sulabha J. Correlation of Pap smear, Colposcopy and Histopathology in women with Unhealthy cervix. *JSAFOG*
5. Archana Sharma, YS Marfatia, Megha Modi. Reproductive tract infections in HIV positive women: A case control study. *Indian Journal of Sexually Transmitted Disease*,2009: 30(1).
6. Maruthi DK, Sudhakar G, Padmavathi DC, Sailabala G. A study of cervical cytological changes in HIV positive patients. *Journal of Dental and Medical Sciences*. 2017 June;16(6):39-48.
7. Eram U, Khaliq N, Shah MS, Ahmad A. Cervical dysplasia in patients of PID: A study from Aligarh, Uttar Pradesh. *National Journal of medical and Allied Sciences* 2015,4(1).
8. Misra JS, Srivastava AN, Shariq A, Srivastava KR. Cervical cytology associated with Pelvic Inflammatory Disease. *J Cytol Histol* 6:343.
9. Abdul MA, Shittu SO, Randawa JA, Shehu MS. The cervical smear pattern in patients with chronic pelvic inflammatory disease. *Niger J Clin pract*. 2009 Sep;12(3):289-93.
10. Cristina Aparecida TS. Cervical cancer screening: from Pap smear to future strategies. *J Bras Patol Med Lab*. 2016 Aug; 52(4): 238-245.
11. Tota JE, Chevarie-Davis M, Richardson LA, Devries M, Franco EL. Epidemiology and burden of HPV infection and related disease: implication for prevention strategies. *Prev Med*. 2011;53:S12-21.
12. Bhutia K, Puri M, Gami N, Aggarwal K, Trivedi SS. Persistent inflammation on PAP smear: does it warrant evaluation? *Indian J Cancer*. 2011 Apr-Jun; 48(2): 220-2.