

Screening of cervical smears at a tertiary care Centre - A prospective study

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Abstract

Introduction: Cervical cancer is one of the most common malignancies in the females next to breast which is preventable but has high mortality rate in developing countries (18/100000)

It is a preventable disease due to the long preinvasive stage. Early detection and appropriate treatment are possible if robust screening is implemented.

Pap smear testing is a very useful, simple, economical, and safe tool for detecting precancerous cervical epithelial lesions as well as neoplastic and non-neoplastic lesions

Hence we took this study to profile various cervical lesions in our institution, to detect and correlate with the clinical features of precancerous, potentially cancerous, neoplastic and non-neoplastic lesions at the earliest.

Objectives: To profile the cytomorphological spectrum of cervical lesions and to detect the potentially cancerous, precancerous and neoplastic lesions at the earliest.

Material and Methods: The present study was conducted on 185 cases of pap smears received from Department of Gynaecology to Department of Pathology, RIMS, Raichur during a period of January 2022 – December 2022.

Results: Majority of the patients were in third decade of life and the commonest clinical presentation was white discharge. The most common lesion reported were NILM as per the Bethesda System 2014. Under the NILM category majority of them were nonspecific inflammatory smears followed by Bacterial vaginosis, atrophic smears (2.2%) and Tricho monas vaginalis (1.1%). Among the epithelial lesions 3 were ASCUS (1.6%), 2 LSIL (1.08%) and 1 case of HSIL (0.5%) was reported. Only 2 cases were inadequate in 185 cases which were due to scant cellularity where opinion could not be given.

Conclusion: Pap smear is a safe screening test for evaluation of cervical lesions if it is combined with the HPV DNA test it will enhance the diagnostic utility, as well as helps in appropriate and timely management which will further aid in decline in morbidity and mortality due to cervical cancer.

The screening programmes has to be widely implemented and should be made aware through various educational programmes and media to the community which will aid in detecting the precancerous, potentially cancerous, neoplastic and non-neoplastic lesions at the earliest.

Keywords: Pap smear, screening test, cervical lesions, Bethesda system, cervical cytology.

Introduction

Cervical cancer is one of the most common malignancies in the females next to breast which is preventable but has high mortality rate in developing countries.

The incidence of cervical cancer (18/100000) is quite high still which may be due to poor implementation of screening programmes as well as awareness in the community are very low.

Pap smear has a sensitivity of 70-80% in detecting HSIL (1) and are done every 3 years in the women age group of 21-65 years or if it is combined with HPV test it can be done every 5 years. If individual has risk factors for cervical cancer it has to be done more frequently regardless of the age.

Pap smear is one of the simple, cost effective, minimally invasive screening procedure which can be done on OPD basis to evaluate various cervical lesions, particularly it plays a vital role in detecting precancerous, non-neoplastic and neoplastic lesions, thereby reducing the morbidity and mortality due to cervical cancer.

Pap smear also helps in identifying the causative organism in inflammatory lesions as well as helps in classifying the hormonal pattern. Hence, we took this study to profile various cervical lesions in our institution as well as to detect and correlate with the clinical features of precancerous, potentially cancerous, neoplastic and non-neoplastic lesions at the earliest.

Materials and Methods

A 1-year prospective study was conducted on all the cervical smears received in the central laboratory, pathology section. The smears were fixed in isopropyl alcohol following which it was stained by rapid pap and H&E. A detailed clinical history and examination of all the cases were documented as per the proforma.

The reporting was done by pathologist based on Bethesda system 2014 to have a uniform system of terminology in reporting which will aid in better management.

Poorly prepared and preserved smears were excluded from the study.

Results

185 cases were analysed during the study period. The age ranged from 16-60 years and maximum were in the age group of 36-40 years (18.9%) of the total cases as depicted in Table 1 followed by 26-30 years (16.7%). The minimum number of cases were found in the age group of 16-20 years (2.16%)

The most common clinical presentation for the pap smear was White discharge which constituted 79 cases (42.7%) out of 185 followed by AUB 52 cases (33.5%) and the least was found in routine screening which was only 2 cases (1.08%) as are depicted in Table 2. Only one case was for routine screening as the individual was a high-risk case with family history of cervical cancer.

On per speculum examination, though the most common clinical presentation for pap smear was white discharge, but on per speculum examination the most common finding was no gross pathology that is 67 cases (36.22%), followed by white discharge 60 cases (32.4%) and remaining were cervical erosions, hypertrophied cervix and mass per vagina as shown in Table 3.

In present study among 185 cases 78 were Satisfactory for evaluation and 21 cases were satisfactory but limited for evaluation due to absence of transformation zone, air drying artefacts, thick smear, cells obscured by hemorrhage at places. Only 2 cases were inadequate for evaluation due to very scant cellularity, in which no opinion could be given.

According to Bethesda system 2014 (Table 4) in present study only 6 cases of epithelial lesions were reported of which 01 HSIL (%), 2 LSIL, 2 ASCUS.

177 cases (94%) of Non epithelial lesions out of 185 cases are reported which constituted the major group, out of which 165 were non-specific inflammatory smear, 6 were bacterial vaginosis, 2 case was trichomonas vaginalis and 4 cases were atrophic smear respectively as shown in Table5.

Discussion

The incidence of cervical cancer is quite high because prevention programs are poorly implemented or the awareness regarding the programmes are very poor especially in rural areas. The Pap smear test used as a screening method to detect cervical cancer is an effective way to prevent the development of cervical cancer, but awareness within the community about the Pap smear test is very low. The Pap smear test is a routine cancer screening method that should be done every 3 years, and a Pap smear with an HPV DNA test is recommended as a screening method every 5 years.

In the present study the majority of pap smears were received from the age group ranging from 31-35 years which was also observed in other studies done by Pradhan B et al (2) and Ranabhat SK et al (3)

The commonest presenting complaint was vaginal discharge which was 42.7% in our study. Similar observations were found in the studies done by Verma et al, (4) Sunita et al (5), Sanchan et al (6) and Rani et al (7). On per speculum examination the majority of the cases did not had any gross pathology (36.22%), similar observations were made in the studies done by Nikumbh et al (8) and Uma rani. M. K et al (9) followed by white discharge (32.4%), cervical erosion, hypertrophy of the cervix and mass per vagina were the remaining findings. As per the Bethesda system 2014, NILM (94%) constituted the maximum number of cases in present study as observed in other studies conducted by Sharma H.B et al (91.3%) (10), Singh K et al (83.9%) (11),

Verma et al, (4) Sunita et al (5), Sanchan et al (6) and Rani et al (7) and Laxmi et al (12)

Among the NILM, the inflammatory smear was seen in majority of cases (93.2%) which was also seen in other study done by Jain et al (80%). In present study bacterial vaginosis (3.3%), and atrophic smear (4 cases, 2.2%) which was similar to rate of study conducted by Pudasaini et al (5.3%), (13)

In our study, only 8 cases were of epithelial cell abnormalities among 185 cases of which 3 were ASCUS (1.6%), 2 LSIL (1.08%) and 1 HSIL (0.5%) respectively comparable to those in a study done by Verma et al., who found ASCUS in 1%, LSIL in 5.5%. Bindroo et al (14) also noted ASCUS (15.6%), LSIL (14.8%) , HSIL (7.6%) but higher numbers of LSIL (8.6%) and HSIL (3.8%) lesions were found in a study done by Nayani and Hendre (15).

Cervical cancer commonly develops in women between the ages of 40 and 50 years and its precursor lesion usually occur 5–10 years earlier. Therefore, it is recommended that women should have at least one Pap smear test before the age of 45 years.

Tables

Table 1: Age wise distribution of cases

Age in years	Number of cases	Percentage %
16-20	04	2.16%
21-25	13	07%
26-30	31	16.7%
31-35	37	20%
36-40	35	18.9%
41-45	24	12.9%
46-50	16	8.64%
51-55	08	4.3%
56-60	07	3.7%
Total	185	100%

Table 2: Clinical presentation.

Clinical presentation	Number of cases	Percentage%
Routine screening	02	1.08%
White discharge	79	42.7%
PID	24	12.9%
AUB	52	33.5%
Pain abdomen	28	15.1%
Total	185	100%

Table 3: Per speculum findings

Per speculum examination	No of cases	Percentage%
Cervical erosions	14	7.5%
White discharge	60	32.4%
Hypertrophied cervix	09	4.8%
Cervical erosions+ White discharge+ hypertrophied cervix	21	11.3%
Mass per vagina/prolapse	14	7.5%
No gross pathology	67	36.22%
Total	185	100%

Table 4: Pap smear report by Bethesda system 2014

PAP smear report by Bethesda 2014	No. of cases	Percentage%
NILM	177	94%
ASCUS	03	1.6%
LSIL	02	1.08%
HSIL	01	0.5%
Inadequate	02	1.08%
Total	185	100%

Table 5: Distribution of NILM cases

NILM	No. of cases	Percentage%
Nonspecific inflammatory smear	165	93.2%

Bacterial vaginosis	06	3.3%
Trichomonas	02	1.1%
Vaginalis		
Atrophic smear	04	2.2%
Total	177	100%

Figures

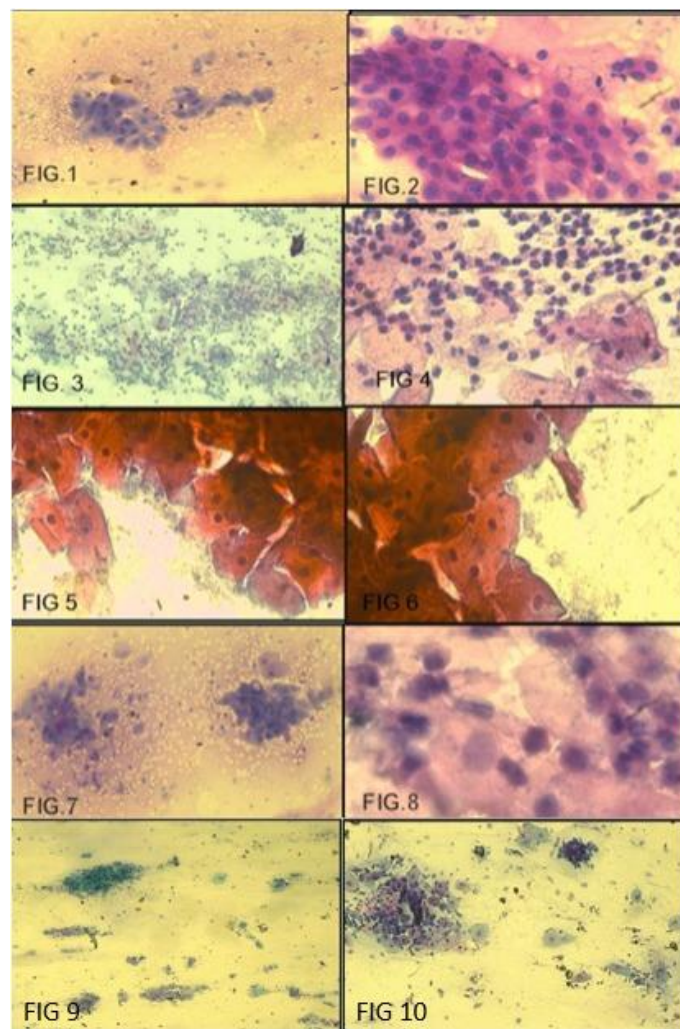


Fig. 1: LSIL 10X

Fig 2: LSIL 40X

Fig 3: Inflammatory Smear 10x

Fig 4: Inflammatory Smear 40x

Fig 5, 6: Bacterial Vaginosis 40x

Fig 7: ASCUS 10X

Fig 8: ASCUS 40X

Fig 9: Atrophic smear 10x

Fig 10: Atrophic smear 40x

Abbreviations

NILM: Negative for Intraepithelial Lesion or Malignancy

LSIL: Low Grade Squamous Intraepithelial Lesion

HSIL: High Grade Intraepithelial Lesion

ASCUS: Atypical Squamous Cells of Undetermined Significance

Conclusion

Pap smear is a safe screening test for evaluation of cervical lesions if it is combined with the HPV DNA test which will enhance the diagnostic utility, thereby helping in appropriate and timely management will aid in declining in morbidity and mortality due to cervical cancer.

The screening programmes have to be widely implemented and should be made aware through various educational programmes and media to the community which will help in detecting the precancerous, potentially cancerous, neoplastic and non-neoplastic lesions at the earliest even when they are not evident clinically.

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