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Original Research Article

Study of Cervical Cytology in Papanicolaou Smears in a Newly Established Tertiary Care Center in Eastern Region of Nepal

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ABSTRACT

Background: Cancer cervix is one of the leading causes of mortality in women worldwide as well as the leading cause of morbidity and mortality in developing countries like Nepal. It can be prevented if it is diagnosed in early stage. The aim of this study was to analyze cytological findings of cervical papanicolaou (pap) smear.
Methods: A retrospective study was conducted at Birat Medical College Teaching Hospital during one year period from 13 April 2016 to 12 April 2017. All the smears were reported as per the 2014 Bethesda system in conventional cervical Pap smear. All the cases were reviewed by all the pathologist of Birat Medical College Teaching Hospital.
Result: Total cases were 240 in one year period in which 225 cases (93%) were satisfactory for evaluation and 15 cases (6.25%) were unsatisfactory for evaluation which is due to thick neutrophilic exudates, mucous, degenerative cells and hemorrhage. Most common age group in this study was (31-40years) 97cases (40.4%). Negative for intraepithelial lesion or malignancy, 219 cases (91.2%) and only 6cases (2.5%) showed abnormality in squamous cells comprising atypical squamous cells of undetermined significance [ASCUS] (n=3, 1.24%), low grade squamous intraepithelial lesion [LSIL] (n=2,0.83%) and high grade squamous intraepithelial lesion [HSIL] (n=1, 0.4%).
Conclusion: Simple screening test like cervical papanicolaou smear (Pap) can detect the abnormality of epithelial lining of cervix.

Key word- Pap smear, Bethesda system, Cancer cervix

INTRODUCTION

Cancer cervix is one of the leading causes of mortality in women worldwide as well as the leading cause of morbidity and mortality in developing countries like Nepal. [1-3] Among the South Asian country, Nepal has the highest rate of carcinoma cervix. [4] It can be prevented if it is diagnosed in early stage by a simple test like cervical papanicolaou smear (Pap) which can screen and detect the abnormality of epithelial lining of cervix. Cervical pap smear test can detect precancerous lesion, cancerous lesion and can also identify non-specific and specific inflammations as well as the report can be obtained on the same day of investigation. All the responsible people of health system of the country should spread the awareness of the diseases like carcinoma cervix and encourage them for routine gynaecological checkup and routine cervical pap smear test.

The aim of this study was to analyze cytological findings of cervical pap smear in

newly established tertiary care center in eastern region of Nepal.

MATERIALS AND METHODS

A retrospective study was conducted at Birat Medical College Teaching Hospital which lies in eastern region of Nepal. Study was conducted from 13 April 2016 to 12 April 2017 for period of one year. The study was done after approval obtained from Birat Medical College and teaching hospital. Relevant clinical history of the patients was obtained from the requisition forms of the patient and the proforma was filled. The data was entered into Microsoft office excel and analyzed using statistical package for social sciences (SPSS 17.0). All the smears were reported as per the 2014 Bethesda system in conventional cervical Pap smear. Only the new cases of cervical pap smear were studied which were collected for period of one year. All the cases were reviewed by all the pathologist of Birat Medical College Teaching Hospital.

RESULT

Total new cases of 240 pap smear (2.56%) were received out of total cases of 9366 from outpatient department of gynaecological and obstetric department in period of one year. Out of 240 new cases of cervical pap smear of the study periodonly 225 cases (93%) were satisfactory for evaluation and 15 cases (6.25%) were unsatisfactory for evaluation which is due to thick neutrophilic exudates, mucous, degenerative cells, hemorrhage, drying artifacts and scant cellularity of squamous epithelial cells.

Most common age group in this study was 31-40years (97cases, 40.4%). Distribution of interpretation of cervical pap smear according to age group is given below in Table1.

Table 1. Distribution of interpretation of cervival pap smear according to age group

AGE (YEARS)	Unsatisfactory	Negative for intraepithelial lesion or malignancy	ASCUS	LSIL	HSIL
20 and Below	-	7	1	-	-
21-30	2	61	-	-	-
31-40	9	86	1	1	-
41-50	2	47	1	1	1
51-60	1	15	-	-	-
61-70	-	3	-	-	-
71 and Above	1	-	-	-	-
Total	15	219	3	2	1

Negative for intraepithelial lesion or malignancy comprises 219 cases (91.2%). Out of 219 cases of Negative for intraepithelial lesion or malignancy, 96 cases are associated with various findings like given below in Table 2

Table2. Distribution of NILM associated with various findings

NILM associated with various findings	Number
Negative for intraepithelial lesion or malignancy with shift in flora with bacterial vaginosis.	12 cases (5.47%)
Negative for intraepithelial lesion or malignancy with atrophic related changes.	15 cases (6.84%)
Negative for intraepithelial lesion or maliganancy with reactive and repairative changes associated with inflammation	69 cases (31.5%)
TOTAL	96

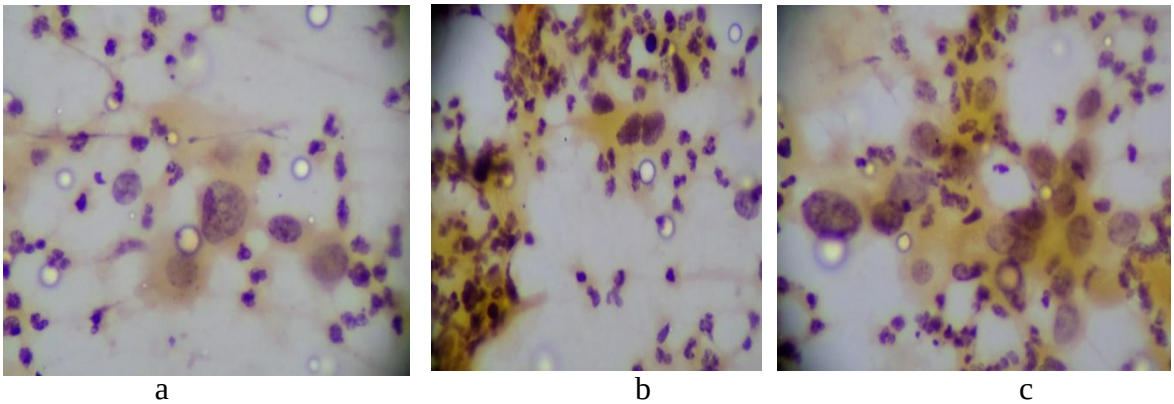
Out of 240 cases, only 6 cases (2.5%) showed squamous epithelial cells abnormality as following:

Atypical squamous cells of undetermined significance (ASCUS) **(**n=3, 1**.**24**%)**

Low grade squamous intraepithelial lesion (LSIL) **(**n=2, 0**.**83**%)**

High grade squamous intraepithelial lesion (HSIL) **(**n=1, 0**.**4**%).**

Microscopic picture of the case of HSIL is shown in Figure1(a, b,c).



a b c

Figure1. (a, b, c) Case of HSIL, cells with irregularly dispersed chromatin, irregular nuclear outlines and with high N:C ratio.

DISCUSSION

The incidence of carcinoma cervix is 24.2 per 100,000 and more than 2,100 cases of cancer cervix are reported in Nepal every year as revealed by the World Health Organization (WHO) Information Centre on HPV (Human Papilloma Virus) and Cervical Cancer. [2-5] Many research studies have shown that in the population screened with cervical pap test there is significant decrease in the rate of invasive carcinoma cervix. [6,7]

The American Cancer Society recommends that all women should do cervical cancer screening after 3 years of sexual contact. After 30 years of age, cervical pap test should be done in 1-2 years of interval, women who have had 3 consecutive normal Pap results may be screened after 2-3 years. The youngest age in our study was 17years and the eldest age was 73 years and most common age group in this study was 31-40years (97cases, 40.4%) and similar findings were noted in the study conducted by Bamanikar et al. [8]

In this study, total new cases of 240 cervical pap smear were received in one year period in which 225 cases (93%) were satisfactory for evaluation and 15 cases (6.25%) were unsatisfactory for evaluation. So the rate of unsatisfactory smear in this study is bit high (6.25%) in comparison to unsatisfactory rate reported by Paret et al (4.48%) and by Tailor Hj et al (2.59%). [9,10] Our study is not the only one with high unsatisfactory rate, Anjana Sharma et al, Bhhattacharya et al also reported unsatisfactory for evaluation of 7.3% and 8.3% respectively. [11,12] In our study all the smears were processed and examined, but unsatisfactory for evaluation of epithelial abnormality occurred because more than 90% of the smears showed thick neutrophilic exudates, mucus, degenerate cells, hemorrhages obscuring the morphology of squamous epithelial cells, some due to scant cellularity of squamous epithelial cells and some with drying artifact. Maximum number of cases of unsatisfactory smear in this study had clinical complain of lower abdomen pain, thick whitish discharge per vagina, backache and per speculum examination showed features of cervicitis. Repeat cervical pap smear was done within three months period considering the causes for unsatisfactory smear by gynaecologist. In all the unsatisfactory cases of our study showed normal findings in repeat pap smear. In future, burden of unsatisfactory smear can be minimized by implementing proper techniques of sample collection**.**

In our study negative for intraepithelial lesion or malignancy comprises 219 cases (91.2%) which is slightly higher than other similar type of study conducted in Nepal in which they found 87.9%. 79.4% and 68% respectively. [13-15]

In this study ASCUS comprises (n=3, 1.24%), LSIL (n=2, 0.83%) and HSIL (n=1, 0.4%) and almost similar findings were noted in the study conducted in

different Medical colleges and teaching hospital of Kathmandu, Nepal. [4,13,14]

In this study we didn't encountered the cases of invasive squamous cell carcinoma this may be due to small sample size collected in a period of one year or due to practice of sending cervical biopsy directly for histopathological examination in all the clinically suspicious cases of carcinoma cervix in this hospital.

One of the study conducted in Nepal by Ranabhat SK concluded that 80% of epithelial cell abnormality is reported in more than 40 years of age group and recommends the regular, thorough screening by pap smear in the women above 40 years of age. [15] Similarly in our study maximum cases of epithelial cell abnormality (5 cases out of 6 cases of epithelial abnormality) is revealed in women age group between 40years to 50 years.

CONCLUSION

During this study year, only 240 new cases came for cervical pap smear test in this newly established center with ASCUS (1.24%), LSIL (0.83%) and HSIL (0.4%). Moving forward, we hope that more number of women take the benefit of essential screening test like this every year, which can detect the abnormality of epithelial lining of cervix that helps patients for further treatment and management in right time.

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Conflict Of Interest

There are no conflicts of interest.

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