Research Article

Profile of utero-cervical lesions in peri- & post-menopausal women in Kumaon Region of Uttarakhand: An Institutional study

Ajay Pratap[1], Usha Joshi[2], N. Thapliyal[3], Prabhat Pant[4]*

[1]PG 3rd Year Resident, Department of Pathology, Government Medical College & Hospital ,Haldwani, Distt: Nainital (Uttarakhand) India.

[2]Associate Professor, Department of Pathology,Government Medical College & Hospital ,Haldwani, Distt: Nainital (Uttarakhand) India.

[3]Professor & Head, Department of Pathology, Government Medical College & Hospital ,Haldwani, Distt: Nainital (Uttarakhand) India.

[4]Assistant Professor Department of Pathology, Government Medical College & Hospital ,Haldwani, Distt: Nainital (Uttarakhand) India.

Correspondence Author: Usha Joshi

Associate Professor, Department of Pathology, Government Medical College & Hospital ,Haldwani, Distt: Nainital (Uttarakhand) India

ABSTRACT:

INTRODUCTION PAP smear is an important tool which compliment histopathology in detection of various cervical lesions. Since last few decades, it is becoming easy and cost-effective way for early detection of pre-cancerous and cancerous cervical lesions.

AIMS/OBJECTIVES: The objective of this study is to evaluate the utero-cervical lesions in peri- & post-menopausal age group by Pap smear method; to study the distribution of cervical lesions and to correlate cytology with histopathology wherever available.

MATERIALS AND METHODS: The study was conducted at pathology department of GMC, HALDWANI. It comprised of 324 cases of PAP smear of women with complaints pertaining to cervix over a period of two years. . PAP smear results were reported according to 'The Bethesda system' (TBS), followed by cervical biopsy and surgically resected specimens, wherever available.

RESULTS: Total 324 cases were evaluated on pap smear cytology. The most of the cases comprised of peri and post menopausal age group (141women,43.52%) while only 16 women (4.96%) are over 65 years. Most common symptom was lower abdominal pain (100 cases; 30.87%). The cervical lesions were categorized as: 14 (4.32%) cases unsatisfactory, 231 (71.30%) cases benign /inflammatory, 60 (18.52%) cases normal, 15 (4.63%) cases of pre-malignant and 4 (1.23%) cases of malignant category. On histopathological examination, maximum 59 (68.61%) cases were inflammatory, 7 (8.14%) cases were pre-malignant and 20 (23.25%) cases were malignant.

CONCLUSION: Our study concluded that the pap smear examination is a useful technique to find the cause of cervical lesions. It is easy to perform, minimally invasive, outdoor procedure that gives quick results and should be followed at all the centers.

Key Words: The pap smear examination, cervical lesions, unhealthy cervix.

INTRODUCTION

The cervical cancer is the second most common cancer in women worldwide, and represents 12% of all female malignancies[1] . According to Indian Council of Medical Research (IMCR) the incidence of cervical cancer in India varies from 20 to 35 per 1,00,000 women between 35 to 64 years while in developing countries it is as low as 1 to 8 per 1,00,000 women. There are about 1,32,000 new cases reported annually with 74,000 death occuring each year in India. [2]

Cervical cancer is the third largest cause of cancer mortality in a developing country like India and accounts for 26% of all cancer deaths[3].

The uterine cervix, being the most exposed part of the female reproductive system, is more vulnerable to get diseased, particularly in peri- & post-menopausal age group women. The lesion may be inflammatory, pre-neoplastic and neoplastic. Neoplastic as well as preneoplastic lesions if

detected in time, can be treated. The treatment is effective in reducing the chance of progression to malignant disease.[4]

The present prospective study was aimed to study the profile of utero-cervical lesions particularly the precancerous and cancerous lesions in women of Kumaon Region of Uttarakhand.

MATERIALS AND METHODS

This study was carried out in the department of Pathology, Government Medical College, Haldwani over a period of two year, from August 2014-July 2016. A total of 324 patients of peri- & post-menopausal age group(40 to 84 years) presenting with symptoms of bleeding per vaginum, foul discharge, white discharge per vaginum, lower abdominal pain, backache and frequency of micturition etc., were studied. In each case, sample were collected with the help of Ayer's spatula. Three pap smear slides were prepared from the material obtained and fixed in 95% alcohol. These smears were stained with PAP stain and evaluated according to

'The Bethesda System'(TBS). Cervical biopsy from suspected area was taken wherever necessary, stained with H&E stain and correlated.
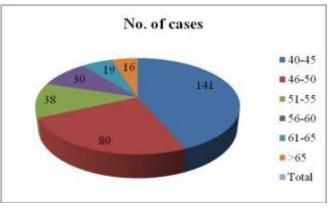
RESULT AND OBSERVATIONS-

The present study was conducted over a period of two year, from August 2014-July 2016 in Government Medical College, Haldwani. Out of 324 cases, maximum number of cases (141;43.52%) were seen in 40-45 years age group, followed by 46-50 years age group (80;24.70%). The least number of cases (16;4.94%) were seen in women above 65 years of age group.[Table 1 & Plate 1].

TABLE NO. 1: AGE WISE DISTRIBUTION (n=324)

S. NO.	AGE IN YEAR	NO. OF CASES	PERCENTAGE
1	40-45	141	(43.52%)
2	46-50	80	(24.70%)
3	51-55	38	(11.72%)
4	56-60	30	(9.26%)
5	61-65	19	(5.86%)
6	>65	16	(4.94%)
Total		324	100%

PLATE NO. 1: PIE CHART SHOWING AGE WISE DISTRIBUTION

Among 324 cases screened, the most common symptom was lower abdominal pain (100;30.87%) followed by complaint of foul discharge per vaginum (76;23.46%). The least common complaint was frequency of micturition which included 11(3.40%) cases [Table 2].

TABLE NO. 2: CLINICAL PRESENTATION WISE DISTRIBUTION (n=324)

S NO.	COMPLAIN	NO. OF CASES	PERCENTAGE
1	BLEEDING PV	16	4.93%
2	FOUL DISCHARGE PV	76	23.46%
3	WHITE DISCHARGE PV	54	16.67%
4	LOWER ABDOMEN PAIN	100	30.87%
5	PAIN ABDOMEN WITH BACK PAIN	41	12.65%
6	FREQUENCY OF MICTURATION	11	3.40%
7	FOLLOW UP	14	4.32%
8	FOLLOW UP POST RADIO THERAPY	12	3.70%
TOTAL		324	100%

(PV- Per Vagina)

Of the total 324 cases, 14(4.32%) cases were unsatisfactory, 231(71.30%) cases were Benign /Inflammatory category, 60(18.52%) cases were Normal category, 15(4.63%) cases were Pre-malignant [AGC-US in 2(0.62%), ASC-US in 7(2.16%), LSIL in 2(0.62%), HSIL in 4(1.23%)] and 4(1.23%) cases of Malignant category. The most common lesion was Benign /Inflammatory. [Table 3]

TABLE NO. 3: CYTOLOGICAL CATEGORY WISE DISTRIBUTION

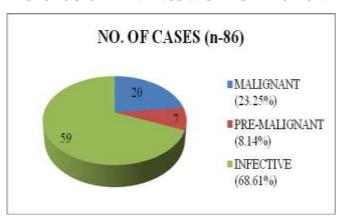| S NO	CATEGORY OF CASES	NO OF CASES	PERCENTAGE
1	UNSATISFACTORY	14	4.32%
2	NORMAL	60	18.52%
3	INFLAMMATORY/BENIGN	231	71.30%
4	PRE-MALIGNANT	15	4.63%
5	MALIGNANT	4	1.23%
TOTAL		324	100%

Out of 86 cases that were available for histopathological examination, 59(68.61%) cases were inflammatory, 7 (8.14%) cases were pre-malignant and 20 (23.25%) cases were

malignant.[Table 4 & Plate 2]

TABLE NO. 4: HISTOLOGICAL DIAGNOSIS (n=86)

S NO.	HISTOLOGICAL DIAGNOSIS	NO OF CASES (n-86)	PERCENTAGE
1	MALIGNANT	20	(23.25%)
2	PRE-MALIGNANT	7	(8.14%)
3	INFLAMMATORY	59	(68.61%)
TOTAL		86	100%

PLATE NO. 2: PIE CHART SHOWING HISTOLOGICAL FINDINGS WISE DISTRIBUTION

NO. OF CASES (n-86)
- MALIGNANT (23.25%) — 20
- PRE-MALIGNANT (8.14%) — 7
- INFECTIVE (68.61%) — 59

The histopathological examination was not done in 238 cases due to various reasons like normal/ inflammatory /atrophic /granulomatous lesions etc. in which case biopsy is not required.

On cyto-histopathological correlation, out of 52 cytologically diagnosed inflammatory cases, 44 cases were inflammatory, 2 were LSIL, 1was HSIL and 5 were malignant on histopathology. Out of 15 cytologically diagnosed premalignant cases, 1was inflammatory, 1was LSIL, 3 were HSIL and 10 were malignant on histopathology. 4 cases cytologically diagnosed as malignant came out to be malignant on histology. Of the 10 cytologically diagnosed normal cases, 9 were infective and 1 was malignant on histology. 5 unsatisfactory cases were diagnosed infective histopathologically [Table 5].

TABLE NO: 5: CYTO-HISTOLOGICAL CORRELATION (n=86)

S.No.	CYTOLOGICAL DIAGNOSIS		HISTO- DIAGNOSIS			
	TYPE OF CASE	NO.0F CASES	INF	PM		M
				LSIL	HSIL	
1	INF	52	44	2	1	5
2	PM	15	1	1	3	10
3	M	4	0	0	0	4
4	N	10	9	0	0	1
5	US	5	5	0	0	0
TOTAL		86	59	7		20

INF-Inflammatory, PM-Premalignant, M-Malignant, N-Normal, US-Unsatisfactory

TABLE NO. 6: Comparison of cytological diagnosis with other studies

S. No.	Study series	Inflammatory/benign lesion	Premalignant & malignant
1	Mandakini et al[9] (n-995)	940(94.5%)	55 (5.5%)
2	Vaddatti T. et al[8] (n-210)	198(94.3%)	12 (5.7%)
3	Present study (n-324)	305(94.14%)	19 (5.86%)

TABLE NO. 7: Comparison of cytological diagnosis with other studies

S NO.	PAP smear findings	K Chaithanya et al [10]	Faten Hasem Al-Mosawi[7]	Vaddatti Tejeswini et al [8]	Present study
1	AGC-US	7(5.69%)	0	1(0.48%)	2(0.62%)
2	ASC-US	59(47.96%)	4(4%)	5(2.38%)	7(2.16%)
3	LSIL	20(16.2%)	5(5%)	2(0.95%)	2(0.62%)
4	HSIL	14(12.18%)	24(24%)	3(1.43%)	4(1.23%)
5	MALIGNANT	22(17.80%)	9(9%)	1(0.48%)	4(1.23%)
TOTAL		123(100%)	100(100%)	210(100%)	324(100%)

DISCUSSION

Cervical lesions are commonly encountered clinical problem involved in wide array of disease processes. PAP smear, as a cytological examination, is a reliable, safe, easy and short

procedure that can be used for categorizing cervical lesions into normal, infective/ benign, pre-malignant and malignant categories and making correct diagnosis in most of the cases.

In our study, a total of 324 women of peri- & post-menopausal age with clinically suspected unhealthy cervix were referred to the department of pathology for Pap smear examination. Results obtained from these cases were correlated histopathologically. The histopathological examination was possible only in 86 cases, received as biopsy or hysterectomy specimen. In rest of the cases, histopathological examination was not done, either due to benign nature of the lesions or loss of follow up.

In the present study, youngest patient was 40 year old as we excluded women less than 40 years and oldest patient was 84 years old. The maximum number of cases (68.22%) are seen in 40-50 years of age group in our study which is in contrast to the study of Gunvanti B. Rathod at el[5] and Dr.Kawser Parveen at el[6] (42.4% and 40% respectively). This may be due to the large sample size and inclusion of the patients of age 20 years or less.

The most common symptom was lower abdominal pain (100;30.87%) followed by complaint of foul discharge per vaginum (76;23.46%). The least common complaint was frequency of micturation (11;3.40%) cases. In contrast Gunvanti B. Rathod at el[5] reported (50.48%) cases of vaginal discharge, followed by abnormal menstruation (22.86%) and Faten Hasem Al-Mosawi[7] reported (46%) cases of vaginal discharge, 28(28%) cases of bleeding.This may be due to the fact that our study included peri and postmenopausal age group, where as the latter studies included the patient of all age group.

In our study 18.52% cases were normal, 71.30% were inflammatory/benign, 5.86% were of epithelial abnormalities (premalignant & malignant) and 4.32% were unsatisfactory smears which was comparable to the study of Vaddatti Tejeswini at el[8], as they found 17.14% cases as normal, 76.19% as inflammatory/benign, 5.71% as epithelial abnormalities (premalignant & malignant) and 0.95% as unsatisfactory smears. Premalignant and malignant lesions in our study correlated well with Vaddatti T.at el[8] and Mandakini et al[9] [Table 6].

Amongst all the neoplastic lesions in cytological examinations, we reported AGC-US in 2 cases (0.62%), ASC-US in 7(2.16%), LSIL in 2(0.62%), HSIL in 4(1.23%) and malignancy in 4(1.23%) which are in accordance with the study by Vaddatti Tejeswini et al[8] as they also reported AGC-US in 1(0.48%) case, ASC-US in 5(2.38%), LSIL in 2(0.95%), HSIL in 3(1.43%) and malignancy in 1(0.48%). However our study was not in accordance with K Chaithanya et al [10] and Faten Hasem Al-Mosawi[7]. This may be due to the fact that they included only abnormal smear findings in their studies, in contrast to inclusion of all normal and abnormal smear findings in our study. [Table 7]

Out of 324 cases, only 86(26.54%) cases were available for histopathological examination. Amongst 86 cases, 59 (68.61%) were inflammatory/benign, 7(8.14%) were premalignant and 20(23.25%) were malignant cases, which is closely related with the study conducted by K Chaithanya et al [10] and Nasheen Fathima Ket al[11] [Table 5].

On cyto-histopathological correlation, all cases diagnosed as malignant in cytology were came out to be malignant on histopathology as well which is accordance with the study conducted by K Chaithanya et al [10][Table 5]

Thus, the present study showed 98.14% Specificity, 66.67% sensitivity, 87.65% Diagnostic accuracy, 94.73% Positive predictive value and 85.48% Negative predictive value. The "p" value of our study was 0.119 (by chi square test). The difference in the proportion of benign and malignant cervical lesions found on PAP smear and histopathological study is not found to be statistically significant. The reason for this difference can be attributed to the fact that since ours being a teaching hospital, budding residents lack experience resulting in faulty technique of Pap smear collection and smear preparation.

CONCLUSION

PAP smear technique is used as a triage to distinguish between cases of cervical lesions so that appropriate treatment and investigations can be done and the patients with malignancies can be diagnosed and referred early without delay. So in the developing country like India, with large population and limited resources, cheap and simple procedure like PAP smear examination should be used for diagnosis of cervical lesions which are one of the commonest clinical presentation in women of reproductive and above age group.

Our study demonstrated the spectrum of cervical lesions in Kumaon region which is an underdeveloped area and more prone to cervical lesions due to low socio economic status and lack of awareness in the region. We, therefore, conclude that pap smears is an important tool for early detection and proper treatment of premalignant lesions, thus preventing morbidity and mortality due to cancer.

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