Original Research

Epithelial abnormalities on Pap smear in Postmenopausal Women: A two-year hospital-based study

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Abstract

Background: Cervical cancer is the commonest cancer causing death among women in developing countries. In India, the peak age for cervical cancer incidence is 55–59 years. However, older and poor women who are at the highest risk of developing cancer are least likely to undergo screening. Pap smear being the most cost-effective, non-invasive and a technically easy screening tool for cervical cancer detection should be carried out in the older population, at regular intervals, if the morbidity and mortality resulting from cervical cancer have to be brought down.

Objectives: To study the incidence of epithelial abnormalities on pap smear in postmenopausal women.

Materials and Methods: The study was carried out on pap smears of 700 postmenopausal women attending the department of Obstetrics and Gynecology, New Civil Hospital, Surat, during January 2014 to December 2015. The pap smears were reported in the Department of Pathology using The Bethesda System.

Results: The incidence of epithelial abnormalities was 5.36%. The age group of 51-60 years showed the highest incidence of epithelial abnormalities. The incidence of epithelial abnormalities in asymptomatic women was 6.46%.

Conclusion: The findings of our study indicate the need to increase awareness regarding the risk of cervical cancer in postmenopausal women, along with efforts to include even asymptomatic women in the screening for cervical cytology.

KEY WORDS: Postmenopausal, Pap smear, Cervical cancer

Introduction

Cervical cancer can be prevented in the vast majority of women.[1] It is the commonest cancer causing death among women in developing countries.[2] According to National Cancer Registry Program of India, cancers of the uterine cervix and of the breast are the leading malignancies seen in Indian women. In view of the well-defined natural history and long detectable preclinical phase, the cancer of uterine cervix gets priority in terms of control program through mass screening.[3]

Every year in India, 1,22,844 women are diagnosed with cervical cancer and 67,477 women die from the disease. In India, the peak age for cervical cancer incidence is 55–59 years. However, older and poor women who are at the highest risk of developing cancer are least likely to undergo screening. Opportunistic screening in various regions of India varies from 6.9% in Kerala to 0.006% and 0.002% in Maharashtra and Tamil Nadu, respectively. Most of the cases (85%) present in advanced and late stages, and more than half (63%–89%) have the regional disease at the time of presentation.[2]

Significantly, as women age, their rate of death from cervical cancer steadily increases. And elderly women are more likely to be diagnosed at a late stage.[4] The reason being that elderly women don't go for a pap smear at all, or go for it very infrequently. Older women may not understand the important relationship between pap smear and cervical cancer. They may mistakenly feel that once they stop having children or

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reach menopause, a pap smear is no longer necessary. But, the reality is that women during menopause or postmenopause, are still at risk of developing abnormal cervical cells that could ultimately result in cervical cancer.[5] Thus, it can be concluded that it is important to create widespread awareness about the necessity of regular screening, including the postmenopausal period.[6]

A primary factor associated with the development of abnormal cells in the cervix is the Human Papilloma Virus (HPV). Any woman who is or has ever been sexually active may have been exposed to it. Her chances increase with the number of sexual partners that she or her partner has had. Women who had first intercourse at an early age are also at an increased risk. There is no known way to effectively prevent transmission of this virus or treat it once it is acquired. Since HPV can remain dormant for many years, even if a woman is currently not sexually active, she may have the virus as a result of past sexual activity.

A regular pap smear, taken and interpreted by a qualified healthcare provider, is the only way that women can be certain that any abnormal cells they may develop can be dealt with appropriately. [5]

Materials and Methods

In the present study, 700 postmenopausal women, attending the Out-Patient Department of Obstetrics and Gynecology, New Civil Hospital, Surat were selected for cervical cytology screening. A detailed clinical history was taken which included age, presenting complaints, age at onset, duration, type of menopause and obstetric history, including parity. History of hysterectomy along with the indication was also noted. Their clinical examination was done which included per abdominal examination, per speculum examination and per vaginal examination. All these findings were noted down in a prepared proforma. Pap smear of these women was collected using an Ayre's spatula and endocervical brush, smeared on two separate slides, fixed and sent to the Department of Pathology, for staining and microscopic examination.

Statistics: Incidences of epithelial abnormalities were calculated and correlated with age, parity and presenting complaints/ symptoms.

Results

All the 700 cases had attained menopause for at least one year except those who had surgically induced menopause. Their ages ranged from 29 to 95 years, with a mean age of 52.1 years.

The smears were reported as per the guidelines specified in The Bethesda System (2001). Accordingly, satisfactory cervical smears for evaluation were obtained in 596 cases (85.14%). In 147 cases (21%), smears were satisfactory for evaluation but lacked the endocervical cell/ transformation zone component. The remaining 104 cases (14.85%) were unsatisfactory for evaluation due to low squamous cellularity and presence of obscuring blood, mucinous material or inflammation. (Table 1) The unsatisfactory smears were excluded from the study.

The age distribution of cases is presented in (Table 2). The majority of women were in the 41-50 years age group comprising of 218 cases (36.57%).

There were 523 cases (87.75%) with natural menopause and 73 cases (12.24%) with surgical menopause. Women with surgical menopause had been operated for various gynecologic complaints like fibroid uterus, carcinoma of the cervix, ovarian cancer, etc.

As shown in (Table 3), 160 cases (26.84%) had a parity of 3, forming the largest group, followed by 154 cases (25.83%) with parity of 2, forming the second largest group and 20 cases (3.35%) were nulliparous.

Out of 596 cases, 395 cases (66.27%) were symptomatic and 201 (33.72%) were asymptomatic. Amongst the symptomatic cases, something coming out per vaginum and lower abdominal pain were the most common presenting

Table 1: Distribution of cases according to adequacy of specimen

Adequacy of the specimen	No. of cases	Percentage (%)
Satisfactory for evaluation	449	64.14
Satisfactory for evaluation but transformation zone absent	147	21
Unsatisfactory smears	104	14.85
Grand total	**700**	

Table 2: Distribution of cases within various age groups

Age (in years)	No. of cases	Percentage (%)
21-30	6	1
31-40	97	16.27
41-50	218	36.57
51-60	155	26
61-70	92	15.43
71-80	24	4.02
81-90	3	0.50
91-100	1	0.16
Grand total	**596**	

Table 3: Distribution of cases according to parity

Parity	No. of cases	Percentage (%)
0	20	3.35
1	32	5.36
2	154	25.83
3	160	26.84
4	115	19.29
≥5	114	19.12
Unmarried	1	0.16
Grand total	**596**	

complaints, comprising 21.64% and 17.44%, respectively. (Table 4).

(Table 5) shows the spectrum of lesions observed on clinical examination of the cases. There were 297 cases (49.83%) which showed some form of lesions, whereas in 299 cases (50.16%), no significant abnormality could be detected.

There were 564 cases (94.63%) out of 596, which showed no significant epithelial abnormalities. Epithelial abnormalities like ASCUS, ASC-H, Atypical glandular cells: NOS, Atypical endocervical cells: NOS, Atypical endometrial cells: NOS, LSIL, HSIL, Squamous cell carcinoma and Adenocarcinoma were found in 32 cases (5.36%).

(Table 6) shows the incidence of various epithelial abnormalities. ASCUS was the most common abnormality noted (1.84%), followed by HSIL (1%) and ASC-H (0.83%). The incidence of LSIL was 0.16%. Amongst the glandular lesions, Atypical endocervical cells: NOS was the most common abnormality (0.50%), followed by Atypical glandular cells: NOS and Atypical endometrial cells: NOS (0.16% each). The incidence of adenocarcinoma and squamous cell carcinoma was found to be similar (0.33% each).

As shown in (Table 7), the age group of 51-60 years showed the highest incidence of various epithelial abnormalities (7.09%). The highest incidence of malignancies was also noted in 51-60 years age group i.e., 1.93%.

As shown in (Table 8), the majority of the women had a parity ranging from 2 to 4 (71.9%), and the highest incidence of cervical dysplasia/ cancer was also found in women with a parity of 2 to 4. The rate of ASCUS was found to be quite high in nulliparous women (10%).

(Table 9) shows the incidence of various epithelial abnormalities in relation to symptoms. Cases with malignancies presented most commonly with abdominal distension, postmenopausal bleeding, lower abdominal pain or a whitish discharge per vaginum.

Histopathological findings were available in 7 cases diagnosed with epithelial abnormalities on cytology (Table 10).

Table 4: Distribution of cases according to presenting complaints

Complaints	No. of cases	Percentage (%)
Something coming out p/v	129	21.64
Lower abdominal pain	104	17.44
Whitish discharge p/v	59	9.89
Swelling at vulva	3	0.50
Vesicles at vulva	1	0.16
Vaginal dryness	1	0.16
Urinary incontinence	3	0.50
Burning micturition, dysuria, increased frequency of micturition	44	7.38
Spotting p/v	2	0.33
Postmenopausal bleeding	28	4.69
Continuous bleeding p/v	1	0.16
Dyspareunia	2	0.33
Abdominal distension	3	0.50
Itching at perineal region	12	2.01
Post-coital bleeding	1	0.16
Pain at vulva	2	0.33
Grand total	**395/596**	

Table 5: Distribution of cases according to lesions on per speculum examination

P/S Findings	No. of cases	Percentage (%)
Bacterial vaginosis discharge	5	0.83
Candidial discharge	4	0.67
Cervical erosion	20	3.35
Uterine prolapse	134	22.48
Senile vaginitis	25	4.19
Mucoid discharge	1	0.16
Cervix hypertrophied	10	1.67
Cervix flushed with vagina	18	3.02
Cervix, vagina atrophic	2	0.33
Cervix not visualized properly	1	0.16
Lichen sclerosus	1	0.16
Mixed discharge	3	0.50
Mucopurulent discharge	1	0.16
Vault healthy	63	10.57
Vault erosion	1	0.16
Vault healing	1	0.16
Vault prolapse	5	0.83
Vault indurated, bleeds on touch	1	0.16
Spotting present	1	0.16
No abnormality detected	299	50.16
Grand total	**596**	

Table 6: Incidence of epithelial abnormalities

Epithelial abnormality	No. of cases	Percentage (%)
ASCUS	11	1.84
ASC-H	5	0.83
Atypical glandular cells: NOS	1	0.16
Atypical endocervical cells: NOS	3	0.50
Atypical endometrial cells: NOS	1	0.16
LSIL	1	0.16
HSIL	6	1
Squamous cell carcinoma	2	0.33
Adenocarcinoma	2	0.33
Total epithelial abnormalities	**32/596**	

Discussion

'Preventable but not prevented'. This is the reality of cervical cancer today, at least in developing countries like India, 80% of all the cases of cervical cancer occur in these developing countries. In India, cervical cancer is the leading

Table 7: Relation between epithelial abnormalities and age

Age groups	No. of cases	ASCUS	ASC-H	Atypical glandular cells: NOS	Atypical endocervical cells: NOS	Atypical endometrial cells: NOS	LSIL	HSIL	SCC	Adeno carcinoma	Overall incidence rate
21-30	6	-	-	-	-	-	-	-	-	-	0%
31-40	97	2 (2.06%)	-	-	-	-	-	2 (2.06%)	-	-	4.12%
41-50	218	5 (2.3%)	2 (0.9%)	-	2 (0.9%)	1 (0.45%)	1 (0.45%)	-	-	-	5.04%
51-60	155	1 (0.6%)	2(1.3%)	1 (0.6%)	1 (0.6%)	-	-	3 (1.9%)	1 (0.6%)	2 (1.3%)	7.09%
61-70	92	3(3.2%)	1 (1.08%)	-	-	-	-	-	1 (1.08%)	-	5.43%
71-80	24	-	-	-	-	-	-	-	-	-	0%
81-90	3	-	-	-	-	-	-	1 (33.3%)	-	-	33.3%
91-100	1	-	-	-	-	-	-	-	-	-	0%
Total	**596**	**11**	**5**	**1**	**3**	**1**	**1**	**6**	**2**	**2**	

Table 8: Relation between epithelial abnormalities and parity

Parity	No. of cases	ASCUS	ASC-H	Atypical glandular cells: NOS	Atypical endocervical cells: NOS	Atypical endometrial cells: NOS	LSIL	HSIL	SCC	Adeno carcinoma	Overall incidence rate
0	20	2 (10%)	-	-	-	-	-	-	-	-	10%
1	32	1 (3.1%)	-	-	-	-	-	-	-	1 (3.1%)	6.2%
2	154	4 (2.6%)	1 (0.6%)	-	2 (1.3%)	1 (0.6%)	-	1 (0.6%)	1 (0.6%)	-	6.3%
3	160	3(1.8%)	3 (1.8%)	-	-	-	1 (0.6%)	2 (1.2%)	1 (0.6%)	-	5.6%
4	115	-	-	-	1 (0.8%)	-	-	2 (1.6%)	-	1 (0.8%)	3.2%
5	62	1 (1.6%)	-	1 (1.6%)	-	-	-	-	-	-	3.2%
6	29	-	-	-	-	-	-	-	-	-	0%
7	15	-	1 (6.6%)	-	-	-	-	1 (6.6%)	-	-	13.3%
≥8	8	-	-	-	-	-	-	-	-	-	0%
Unmarried	1	-	-	-	-	-	-	-	-	-	0%
Total	**596**	**11**	**5**	**1**	**3**	**1**	**1**	**6**	**2**	**2**	

Table 9: Relation between epithelial abnormalities and symptoms

Symptoms	No. of cases	ASCUS	ASC-H	Atypical glandular cells: NOS	Atypical endocervical cells: NOS	Atypical endometrial cells: NOS	LSIL	HSIL	SCC	Adeno carcinoma	Overall incidence rate
Post menopausal bleeding	28	1 (3.5%)	-	1 (3.5%)	-	-	-	-	-	1 (3.5%)	10.7%
Lower abdominal pain	104	1 (0.9%)	-	-	-	-	-	-	1 (0.9%)	-	1.8%
Whitish discharge	59	2 (3.3%)	-	-	-	-	-	2 (3.3%)	1 (1.6%)	-	8.2%
Something coming out p/v	129	2 (1.5%)	1 (0.7%)	-	2 (1.5%)	-	-	-	-	-	3.7%
Burning micturition	44	-	-	-	1 (2.2%)	-	-	-	-	-	2.2%
Spotting p/v	2	-	-	-	-	1 (50%)	-	-	-	-	50%
Swelling at vulva	3	-	-	-	-	-	-	1 (33.3%)	-	-	33.3%
Abdominal distension	3	-	-	-	-	-	-	-	-	1 (33.3%)	33.3%
Other symptoms	23	-	-	-	-	-	-	-	-	-	0%
Total	**395**	**6**	**1**	**1**	**3**	**1**	**0**	**3**	**2**	**2**	

Table 10: Correlation with histopathological findings in cases diagnosed with epithelial abnormalities on cytology

Type of smear	Cytological Findings	Histopathological Findings
Vault smear	Adenocarcinoma of cervix	Adenocarcinoma of cervix
Cervical smear	HSIL	CIN III
Vault smear	HSIL with features of invasion	CIN III
Cervical smear	HSIL	CIN III
Cervical smear	ASCUS	CIN II
Cervical smear	Atypical glandular cells: NOS	Squamous cell carcinoma
Cervical smear	Squamous cell carcinoma	Squamous cell carcinoma

cause of cancer-related deaths in women. The goal of cervical cancer screening is to detect preinvasive lesions, which results in a reduction in incidence and mortality from invasive cervical cancer. This concept has been highly successful over last 50 years.[7] In our study, the age of women ranged from 29 to 95 years, with a mean age of 52.1 years. Satisfactory smears for evaluation were obtained in 596 cases (85.14%) with 104 cases (14.85%) being unsatisfactory for evaluation. The majority of women were in the 41-50 years age group comprising of 218 cases (36.57%), and 160 cases (26.84%) had a parity of 3, forming the largest group. Out of 596 cases, 395 cases (66.27%) were symptomatic and 201 (33.72%) were asymptomatic. Something coming out per vaginum and the lower abdominal pain were the two most common presenting complaints, comprising 21.64% and 17.44%, respectively. Epithelial abnormalities were found in 32 cases (5.36%) out of 596. ASCUS was the most common epithelial abnormality noted (1.84%). The incidence of adenocarcinoma and squamous cell carcinoma was found to be similar (0.33% each). The age group of 51-60 years showed the highest incidence of various epithelial abnormalities (7.09%). The highest incidence of cervical dysplasia/ cancer was found in women with a parity of 2 to 4. Histopathological findings were available in 7 cases diagnosed with epithelial abnormalities on cytology, which confirmed the cytology findings.

Comparison with other studies:

The percentage of smears reported as unsatisfactory for evaluation in various studies was 0.73% in Mulay et al,[8] 0.5% in Reddy et al[9] and 18.94% in Gupta et al[10] In our study, the percentage of unsatisfactory smears was 14.85%, which is comparable to the study done by Gupta et al[12], in Western Uttar Pradesh, where the majority of the cases were in 30-39 years age group. In contrast to our study which focussed only on postmenopausal women, all the other studies also included women in the reproductive age group. This could be the reason for a higher percentage of unsatisfactory smears in our study. A review by Mossa et al[11] on cervical intraepithelial neoplasia in postmenopausal women states that cervical smears taken from postmenopausal women are more likely to be inadequate and unsuitable for reliable assessment. Estrogen deficiency causes atrophy of tissue and a retraction of squamocolumnar junction. There is a greater incidence of unsatisfactory smear reports and unsatisfactory colposcopy. It is generally preferable to repeat smear after giving oral, transdermal or vaginal estradiol for a period of 7 to 10 days.[12]

The age range in the present study varied from 29-95 years with a mean age of 52.1 years. The age group of 51-60 years showed the highest incidence (7.09%) of various epithelial abnormalities. Similar findings were noted by Bukhari et al,[6] with the highest incidence (39.2%) of epithelial abnormalities in the age group of 50-59 years. The highest incidence of malignancies in the present study was also noted in 51-60 years age group (1.93%). Reddy et al[9] also found the highest incidence of malignancies in the age group of 51-60 years (4.6%). In India the peak age for cervical cancer incidence is 55–59 years, according to a study by Aswathy et al.[2] Ko et al[13] found that perimenopausal and postmenopausal women remain at increased risk for cervical cancer given that there is a secondary peak in prevalence of high-risk HPV subtypes in this older population, and that certain high-risk HPV subtypes persist to a greater extent in this population. Unfortunately, many of these older women have not had regular access to gynecologic care or cervical cancer screening. Another recent study carried out in the United States by Rositch et al[14] also noted a similar rise in the incidence of cervical cancer in women over the age of 60 to 65 years. This shift in the age distribution of cervical cancer towards older women, at a time when the efficacy of cervical cancer screening techniques has been well established the world over, suggests a need in refining the screening program to include older women.

Gupta et al[10] noted the highest incidence of cervical dysplasia/cancer in parity above 3, whereas Reddy et al[9] noted the same in parity of 2 or more. We noted the same in parity ranging from 2 to 4. In the present study, the rate of ASCUS was found to be quite high in nulliparous women (10%). Reddy et al[9] found SIL rate to be very high in nulliparous women (21.4%).

The incidence of cervical dysplasia and cervical cancer in women with presenting complaints of discharge per vaginum, post-menopausal bleeding, and the lower abdominal pain was 4.9%, 3.5%, and 0.9% respectively. We had 3 cases with a complaint of swelling at the vulva and 3 cases with abdominal distension, out of which 2 cases (1 in each group) were diagnosed with cervical cancer, accounting for the high incidence (33.3%) in both the groups. Studies by Bukhari et al[6] and

Reddy et al,[9] also state that epithelial abnormalities are more likely to be found in patients with abnormal bleeding per vaginum and vaginal discharge.

In the present study, there were 201 cases (33.72%) with no presenting complaints. Out of these, 13 cases (6.46%) were found to have significant epithelial abnormalities. ASCUS was the most common abnormality found. None of the cases were diagnosed with any malignancy. These findings are comparable to a study by Velu et al,[15] which was conducted on postmenopausal women attending a rural tertiary care center in Puducherry. The findings indicate the need to screen even asymptomatic women for cervical cytology, as many precursor lesions of cervical cancer remain silent for long.

We noted epithelial abnormalities in 5.36% cases, which is comparable to the same found by Mulay et al[8] (1.39%), Gupta et al[10] (3.2%) and Nikumbh et al[7] (5.8%). The incidence of epithelial abnormalities in India varies from 1.87 to 5.9%, as stated in a study by Mulay et al[8] ASCUS was the most commonly seen epithelial abnormality in the present study (1.84%), similar to the study by Mulay et al[8], who noted an incidence of 0.64%. In dry atrophic smears, the cytoplasm frequently becomes eosinophilic and nuclear pyknosis and karyorrhexis can assume significant proportions; this appearance, together with senile inflammatory changes, can lead to substantial difficulty in recognizing dyskaryotic cells in atrophic postmenopausal smears.[11] A study conducted by Abati et al[16] states that nuclear enlargement alone is not sufficient for diagnosing ASCUS or SIL in postmenopausal cervicovaginal smears. Nuclear enlargement in squamous cells is an expected normal reactive change that resolves with the application of local estrogen. Nuclear hyperchromasia and irregular nuclear contours remain the most reliable cellular characteristics for diagnosing SIL in atrophic cervicovaginal smears. Studies consistently have demonstrated a lower detection rate of dysplasia in follow-up cervical biopsies after a cytologic diagnosis of ASCUS in older postmenopausal women.[17] Due to loss of follow-up of such cases in the present study, the actual incidence of SIL on repeat smears or CIN on biopsy, for smears reported ASCUS on cytology could not be determined. Only one case of ASCUS was reported as CIN II on biopsy.

HSIL was the next most common abnormality noted with an incidence of 1%. A similar high incidence was noted in studies by Ranabhat et al[18] (0.68%) and Nikumbh et al[7] (1.98%). The recognition that HSIL is likely to progress to invasive cancer, whereas most low-grade lesions regress spontaneously, raises awareness that eradicating HSIL is critical for cancer prevention.[17] Hence the need to put greater efforts in detecting HSIL at an early stage, before it progresses to invasive cancer.

The incidence of ASC-H was 0.83% in the present study which is comparable to a study by Saad et al[17], which reported an incidence of 0.52% in perimenopausal and postmenopausal women. There have been few previous studies of the clinical significance of ASC-H in postmenopausal women; results have been contradictory, and various age cut-offs were used. Saad et al[17], based on the findings of their study, state that older women with an interpretation of ASC-H are less likely to have HSIL than younger women. In the present study, none of the 5 women diagnosed as ASC-H on cytology, returned for a subsequent follow-up. So, the actual occurrence of SIL on a repeat cytology or biopsy could not be determined.

The combined incidence of invasive cancers was also high (0.66%) in the present study, similar to the findings of Ranabhat et al[18] (0.23%) and Nikumbh et al[7] (1.60%). Squamous cell carcinoma and adenocarcinoma of the cervix were noted with an incidence of 0.33% each.

The incidence of Atypical glandular cells-Not otherwise specified in the present study was 0.16%, compared to studies by Nikumbh et al[7] (0.40%) and Mulay et al[8] (0.31%). Chhieng et al[19] conducted a study on the clinical significance of Atypical glandular cells in postmenopausal women. They found that the incidence of the same in postmenopausal women was 0.51%. The majority of such patients turned out to have either endometrial adenocarcinoma, endocervical adenocarcinoma or endometrial hyperplasia with atypia. A significant number of patients had a squamous lesion on follow-up: LSIL, HSIL or invasive squamous cell carcinoma. In the present study, there was a single case of Atypical glandular cells-Not otherwise specified, which was diagnosed as invasive squamous cell carcinoma on subsequent cervical biopsy. These findings suggest a close follow-up in postmenopausal patients with a cytologic diagnosis of Atypical glandular cells-Not otherwise specified.

The incidence of Atypical endocervical cells: Not otherwise specified and Atypical endometrial cells: Not otherwise specified was 0.50% and 0.16% respectively. Chen et al[20] found that 20.3% patients with Atypical endometrial cells: Not otherwise specified on cytology had neoplastic/preneoplastic uterine lesions on follow-up histology. Also, 96.3% of these patients were over 40 years old. The 2012 ASCCP Guideline recommends endometrial and endocervical sampling for all women with a diagnosis of atypical endometrial cells. If no endometrial pathology is revealed, then a subsequent colposcopy should follow.

Histopathological findings were available in 7 out of 32 cases with epithelial abnormalities, which confirmed the cytology findings.

Strength and limitations of our study: Few previous studies have focussed on epithelial abnormalities on pap smear solely in postmenopausal women, who refrain from routine screening due to various reasons. The findings of our study (conducted on a large sample size of 700 cases) stress the importance of continued screening even after menopause and will help guide the clinicians in including as many postmenopausal women in screening as possible. The greatest problem that we faced was a lack of follow-up of patients diagnosed with epithelial abnormalities. Biopsies were done only in 7/32 cases. So we could not determine the actual incidence of cervical intraepithelial neoplasia (CIN)/ invasive cancer on histopathological examination.

Conclusion

In today's era when the incidence and mortality rates of cervical cancer in countries with well-organized screening programs have decreased significantly since the introduction of screening, we belong to a developing world where the scenario is far from ideal. The 5.36% incidence of epithelial abnormalities noted in our study indicate the need to increase awareness regarding the risk of cervical cancer in older women along with a challenge to cover those populations who have never been screened during their lifetimes. Any woman with a cytologic diagnosis of Atypical Glandular cells: NOS or Atypical Endometrial cells: NOS should be closely followed, as a significant proportion of such cases are found to have neoplastic cervical and uterine pathology subsequently. We noted a 6.46% incidence of epithelial abnormalities in asymptomatic women. These findings indicate the need to screen even asymptomatic women for cervical cytology, as many precursor lesions of cervical cancer remain silent for long. Detection of such lesions by routine screening can facilitate timely management and thereby reduce the morbidity associated with the development of invasive cancer.

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