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Histomorphological and sociodemographic profile of lesions of uterine cervix: A study of 279 cases

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Abstract
Background: The major bulk of histopathological specimens are the gynecological specimens consisting of hysterectomies or biopsies of cervix. Routine histopathological evaluation of suspicious lesions can lead to early detection of cancerous lesions.
Objective: All specimens were studied histologically and a diagnosis was made. Sociodemographic profile of neoplastic and non-neoplastic lesions was compared using chi-square test.
Material and Methods: The study consisted of 279 cases of uterine cervix that were submitted for histopathological evaluation.
Result: Benign lesions constituted the major bulk (75.6%) followed by malignant lesions (21.5%) and premalignant lesions (2.87%). The most common benign lesion was chronic cervicitis (33.69%) and most common malignant lesion was keratinizing squamous cell carcinoma (10.39%). Chi square test revealed significant association of malignancy with tobacco use, multiparity and marriage before 18 years.
Conclusion: Screening of sexually active females along with awareness against causal factors might help in reducing cervical malignancies.

Keywords: Chronic cervicitis, keratinizing squamous cell carcinoma, premalignant lesions, uterine cervix

Introduction
The uterine cervix is amenable to variety of benign and malignant lesions. These lesions are most commonly seen in sexually active females. The majority of the non-neoplastic lesions are inflammatory in nature [1].
Worldwide cervical carcinoma is the most common malignancy of the female genital tract and it represents the second most common malignancy in females following breast cancer (excluding skin cancer) [2]. Every year in India, 122844 females are diagnosed with cervical cancer and 67477 die from the disease. India has a female population of 432.2 million aged 15yrs and older who are at a risk of developing cancer. It is the second most common cancer in women aged 15-44yrs [3].
The majority of non-neoplastic lesions of the cervix are inflammatory in nature but they can mimic carcinoma clinically, so complete and precise assessment of these lesions is required which can be done by 3 methods: colposcopic examination, cervical cytology and histopathology of biopsy specimen [4].
This study was undertaken to study histomorphological features of all neoplastic and non-neoplastic lesions of cervix along with comparison of their sociodemographic profile.

Material and Methods
This study was conducted in the department of Pathology, S.N Medical College, Agra, Uttar Pradesh, India, during a span of one and a half yrs from January 2017 to June 2018.
All lesions arising from or involving ectocervix and endocervix were included and lesions arising from uterus, vulva, vagina and parametrium or lesions arising from neighbouring organs extending in cervical canal but not involving cervical tissues were excluded.
A total of 279 cases were studied which included cervical biopsies, conization and hysterectomy specimens. After 24hrs fixation, cervical biopsy was passed as such and hysterectomy and conization specimens were examined grossly and necessary sections were

obtained including two bits from endocervix and ectocervix. The tissues were fixed in 10% formalin solution and paraffin blocks were prepared that were cut in thin section of 2-3 micrometer thickness and were subsequently stained with haematoxylin and eosin. All the sections were studied microscopically and a histological diagnosis was rendered.

Result

Maximum patients were encountered in sexually active age group i.e. 30-50 years, most common age group affected being41-50 years comprising 41.57% of all cases. Mean age for benign lesions was 43.49 years. Mean age for malignant lesions was 44.85 years. Mean age for premalignant lesions was 36.5 years. Chi square test was done to see significance between the mean age of benign and malignant lesions. p value was = 0.72. So, mean age did not show any significant correlation with benign and malignant lesions.

Most benign lesions presented with white discharge seen in 119 cases (56.39%) followed by bleed per vaginum in 34 cases (16.11%). Most malignant lesions presented also with white discharge seen in 29 cases (48.3%) followed by bleed per vaginum in 17 cases (28.3%) cases. Amongst 8 premalignant cases, 6 cases (75%) presented with white discharge and 1 case (25%) each with pain in abdomen and foul-smelling discharge.

Most common type of specimen in our study was biopsy specimens -137cases (49.1%). This was closely followed by hysterectomy specimens -129 cases (46.23%). Only 13cases (4.65%) of polypectomy specimens were registered.

Table 1: Age distribution of cases in our study

Age Group	Benign Lesions	Malignant Lesions	Premalignant lesions	Total	% of cases
21-30	10	2	1	13	4.65
31-40	75	19		94	33.69
41-50	87	23	6	116	41.57
51-60	31	13	1	45	16.12
61-70	5	3	-	8	2.86
71-80	3	-	-	3	1.75
Grand Total	211	60	8	279	

Most common lesion was benign lesions constituting 211 cases (75.6%). Next most common were malignant lesions constituting 60 cases (21.5%). Least common were premalignant lesions, constituting only 8 cases.

Table 2: Distribution of Benign Lesions in our study-

Diagnosis	No of Cases	%
Chronic cervicitis	94	44.54
Squamous Metaplasia	61	28.9
Normal histology	26	12.32
Nabothian cyst	17	8.06
Endocervical polyp	8	3.79
Microglandular Hyperplasia	2	0.94
Leiomyoma	2	0.94
Tunnel clusters	1	0.47
Total	211	100.0

Most common benign lesions in our study were chronic cervicitis seen in 94 cases (33.69%) and squamous metaplasia (21.86%). Chronic cervicitis was reported as the most common lesion overall (Fig.-1) Most common malignant lesion in our study was keratinizing squamous cell carcinoma seen in 29 cases (10.39%) (Fig.-2). Least common benign lesion was tunnel clusters seen in 1 case only. Least common malignant lesion was spindle cell sarcoma that was vimentin positive seen in 1 case only. In our study only 8 cases (2.87%, 8/279) were of premalignant lesions.5 cases (62.5%) of LSIL and 3 cases (37.5%) of HSIL were reported (Fig.-3).

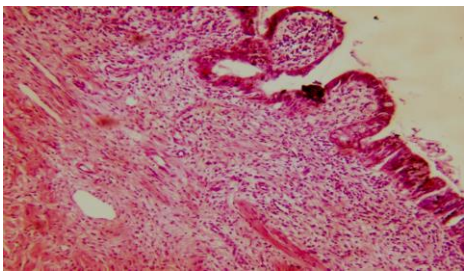

Fig 1: Chronic Cervicitis (H&E 10x)

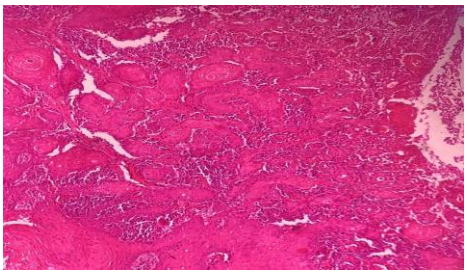

Fig 2: Keratinizing squamouscell carcinoma (H&E 10X)

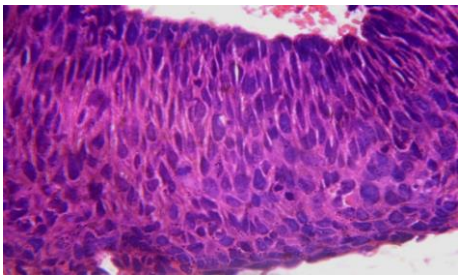

Fig 3: Cervical Intraepithelial Neoplasia 3 (H&E 40X)

In benign group, 84 cases (39.8%) were tobacco users and 7 cases (3.31%) were smokers. In malignant group, 43 cases (71.6%) were tobacco users and 5cases (8%) were smokers. So, tobacco use and smoking were more prevalent in malignant cases. Chi square test was done to see the significance with malignancy. Association of smoking and tobacco use with malignancy was significant (p <.00001).

Table 3: Relation of Socioeconomic class status according to Kuppuswamy's socioeconomic scale[27] with lesions in our study

Socioeconomic Class	Benign lesions	Malignant Lesions	Premalignant Lesions	Total no cases	%
UPPER	2	2	1	5	1.79
Upper Middle	40	9		49	17.5
Lower Middle	77	17	3	97	34.76
Upper lower	75	24	3	102	36.5
LOWER	17	8	1	26	9.31
Grand Total	211	60	8	279	

Most common socioeconomic class affected with cervical lesions in our study was upper lower -102 cases (36.5%), of which maximum no of cases 75(73.5%) were having benign lesions while 24 cases (23.5%) were of malignant lesions and only 3 cases (2.9%) were having premalignant lesions.2nd most common socioeconomic class affected was lower middle of which maximum number of participants were having benign lesions 77 cases (79.38%), 17 cases (17.52%) were having malignant lesions and only 3 cases (3.09%) having premalignant lesions. Chi square test did not show any significant association of socioeconomic class with benign and malignant lesions (p=0.311).

Table 4: Relation of Parity with Study group

Parity	Benign lesions	Malignant lesions	Premalignant lesions	Total cases	%
Multiparous	190	59	7	256	91.75
Nulliparous	4	1		5	1.79
Primigravida	17		1	18	6.45
Total	211	60	8	279	

Most patients in our study were multiparous constituting 256 cases (91.75%), 18 cases (6.45%) being primigravida and only 5 cases (1.8%) were nulliparous. 90% patients of benign lesion were multiparous while 98.33% patients of malignancy were multiparous. 87.5% premalignant lesion were multiparous. When parity was compared between benign and malignant lesions using chi- square test, malignancy had a strong association with multiparity (p = .038).

Malignancy was associated in higher proportion with marriage before 18 years age as compared to benign lesions. 22/60(36.66%) cases diagnosed malignant were married before 18 years age and 50/211 cases (23.6%) diagnosed with benign lesion were married before18. 3/8 cases (37.5%) of premalignant lesions were married before 18 years of age. Thus, earlier age at marriage was associated with malignant lesions in our study. Age at marriage was compared between patients of benign and malignant lesions using chi square tests which came out to be significant (p = 0.047). So our study revealed that malignancy was common in patients married before 18 years.

Maximum malignant cases reported were keratinizing squamous cell carcinoma seen in 48.3% cases (29/60). Non keratinizing squamous cell carcinoma was seen in 26.6% cases (16/60). 1 case each of verrucous carcinoma and papillary squamous cell carcinoma was seen.11 cases (18%) of adenocarcinoma were seen in our study. This included 1 case of villoglandular adenocarcinoma. 3 case of adenosquamous carcinoma were seen. Only 1 case of spindle cell sarcoma that was vimentin positive was reported.

Discussion

A total no of 279 cases were received in histopathology laboratory, department of Pathology, Sarojini Naidu Medical College, Agra during study period.

In our study most common specimen was biopsy specimens (49.1%). This was closely followed by hysterectomy specimens (46.2%). Similar results were seen by Ameya G *et al.*, [5] they also reported biopsy as the most common specimen type (76.2%). Hysterectomies were more common in cases reported malignant in our study. No study of specimen's type was made in other studies.

Maximum no. of patients encountered in our study were of sexually active age group i.e.30-50 years, most common age group affected being 41-50 years (41.57%). Similar results were seen by PallipadyA *et al.* [6] and Ameya G *et al.* [5]

In our study nonsmokers and non-tobacco users accounted for 135 cases (48%) followed closely by tobacco users comprising 47.3% of total cases. Smokers were only 3.94%. Premalignant lesions (75%) and malignancy (71%) showed a significant statistical assocition with tobacco use in our study (p< .00001).

In our study most common socioeconomic class encountered was upper lower (36.5%) and lower middle (34.6%) class. Benign Lesions were most prevalent in lower middle socioeconomic class (36.4%) closely followed by upper lower class (35.5%), while malignant lesions were more common in upper lower (40%) and lower middle class (28.3%). Thus, malignancy and premalignant lesions were more prevalent in lower social classes.

In our study most patients were multiparous (92%). Similar result was seen by Pallipady A *et al.* (85%). [6] Only 2% cases reported were nulliparous and 6%cases were primigravida in our study. 98.3% of patients with malignancy were multiparous as opposed to 90% of benign and 87.5% of premalignant lesions. Thus multiparity was strongly associated with malignancy as compared to benign and premalignant cases (p = .038). No consideration of parity was taken in other studies.

In our study patient married after 18 years of age formed the major bulk (72.5%) as compared to patients married before 18 years age (26.8%). 37.5% of patients with premalignant lesions and 36.6% of patients with malignancy had a history of marriage before 18 years while only 23% patients with benign lesions gave history of marriage before 18 years. Thus malignancy was found to be associated in higher proportion with early marriage as compared to benign lesions in our study (p= .047). Age at marriage was not included in any study.

In our study, most common complains of patients were white discharge (55.19%) followed by bleed per vaginum (18.27%). White discharge was also the most common complain seen by Pallipady A *et al.* (26.6%), [6] Garewal J *et al.* [7] and Dubey K *et al*. [8] In study Poste P *et al*. [9] most common complaint in benign lesions, CIN and malignant lesions was bleed per vaginum.

In our study the most common lesions were benign lesions constituting 211 cases (75.6%) and malignant lesions constituted 60 cases (21.5%) in a ratio of 3.5:1. Least common was premalignant lesions, constituting only 8 cases. This data shows that benign lesions were more common than their malignant counterpart in our study population. Similar results were seen by Poste P *et al*. [9] Naveen Kumar BJ *et al.*, [10] Pandit GA *et al.*, [4] SarvananS *et al*. [11] However, Ameya G *et al*. [5] encountered more malignant cases (49.3%) as compared to benign and premalignant cases. The possible reason they gave was less awareness of cervical cancer screening in the area and women visiting the hospital after overt symptoms were present. Faduyile FA *et al*. [12] and Kiranmayi BVVD *et al*. [13] encountered more benign lesions as compared to malignant ones but at a lower percentage of 58.8% and 53.7% respectively.

Maximum malignant cases reported in our study were keratinizing squamous cell carcinoma seen in 48.3% cases, followedby non-keratinizing squamous cell carcinoma (26.66%). Similar results were seen in studies done by Poste P *et al*. [8] and Ameya G *et al*. [5] 1 case of papillary squamous cell carcinoma and verrucous squamous cell carcinoma was seen in our study.2nd most common malignancy in our study was adenocarcinoma (18%). 1 case of villoglandular adenocarcinoma and 1 case of mucinous type adenocarcinoma were seen.3 case of adenosquamous carcinoma were seen. Similar results were seen by Poste P *et al.*, [9] Pandit GA *et al.*, [4] Rahman MA *et al*. [14] Only 1 case of spindle cell sarcoma that was vimentin was reported.

Conclusion

Benign lesions constitute the major bulk followed by malignant and premalignant lesions. Also, malignancy had a strong statistical association with tobacco use, multiparity and marriage before 18 years of age. So, awareness programmes and educational drives against these might help in reducing the burden of cervical malignancies. Since, the most common age group affected was 41-50 yrs., a screening check -up at this time needs to be emphasised.

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