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Original Article

Incidence of Neoplastic Cervical Pathologies Recorded at a Medical College

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ABSTRACT

Objective: The present study was undertaken for a period of three years (from June 2008 to May 2011), to study the epidemiology of neoplastic cervical lesions recorded at a Pathology Department and allied centers at a Medical College.

Methods: The period of study from June 2008 to May 2009 was retrospectives and from June 2009 to May 2011 was prospective.

Results and Conclusion: In this study total 1260 cervical specimens were studied, of which 13% were malignant. Benign cervical lesions and cervical intraepithelial neoplasia constituted 6.19% and 4.04% respectively. Total number of benign lesions were 78 (6.19%), of which endocervical polyp were most common (59 cases or 77.63%), followed by leiomyomatous polyp (22.37%). The age range was 30-50 years. Endocervical polyps were most commonly detected in patients diagnosed with cervical polyp, DUB, or ovarian cyst. Leiomyomatous polyps were commonly detected in patients with fibroid uterus. The total number of cervical intraepithelial lesions were 51 cases (4.04%), of which 15 were CIN I (29.4%), 25 were CIN II (49.01%), and 11 were CIN III (25.49%). The common age group was 30-40 years and 40-50. They were commonly presented with irregular vaginal bleeding and foul smelling white discharge per vaginum. A total of 164 invasive malignancies were encountered (13.01%). Squamous cell carcinoma was the commonest invasive carcinoma (157cases or 95.73%). The youngest patient was 29 years and oldest 82 year. The peak incidence was in the 4th and 5th decades. Metrorrhagia and foul smelling white discharge was most common symptom in patients diagnosed with carcinoma. Further, squamous cell carcinoma was the commonest histological subtype noted with large cell non keratinizing carcinoma (97 cases or 61.7%) followed by large cell keratinizing type (48 cases or 30.5%) and small cell non keratinizing type (6 cases or 3.82%). In a few patients, adenocarcinoma, adenosquamous carcinoma and neuroendocrine carcinoma were also recorded.

INTRODUCTION

The cervix is an organ that usually functions under pathological working conditions[17]. While infections of the female genital tract are very commonly encountered in gynecological practice, primary malignant disease also has the female genital tract as one of its commonest situations.

The infections of the female genital tract are the "Gateway," predisposing the women not only to tubal infertility but also increasing the risk of tubal pregnancy[18]. Early recognition of neoplastic lesions can prevent considerable damage to the cervix due to fibrosis, glandular atrophy and sometimes-even development of malignancy or in many cases death[18].

Incidence of neoplastic cervical lesions varies according to the different age groups[19]. Worldwide, cancer of the cervix is the second most common cancer among women, being superseded only by breast cancer. In developing countries, it is the most common cancer among women, accounting for 80% of the cases. It is the fourth largest killer among all the cancers[20].

Extensive and well-organized screening programmes in some countries have brought about a marked decline in both the mortality from cervical carcinoma and the incidence of the carcinoma of the cervix. In India, incidence of the carcinoma of the cervix has declined according to population-based carcinoma registers.

More improvements that are limited have been observed in developing countries, where persistently high rates tend to be observed. Histopathological studies of the cervix along with clinical correlation are very important for early diagnosis of the cervical diseases as they have advantage of being readily available, relatively cheap and technically easy[21]. Hence, the present study aims to study the incidence of histomorphological features of all types of neoplastic lesion of uterine cervix. Further, the incidence of lesions will be studied with respect to age of the subjects and their clinical presentation.

MATERIALS AND METHODS

The study of histomorphological lesions of the cervix was carried out at the department of pathology M.R. Medical College, Gulbarga. Cases from Basaveshwar Teaching and General Hospital, Government general hospital Gulbarga, various private laboratories in Gulbarga were included in the study. This one-year retrospective and two-year prospective study included 1260 cases that were submitted for histopathological examination from June 2008 May 2011 (over a period of three years). Institutional Human Ethics Committee permission was taken from Basaveshwara Teaching & General Hospital.

The specimens were studied in different forms such as punch biopsies and hysterectomies. A relevant clinical profile of retrospective and prospective cases was taken from case records and requisition forms. All the specimens were fixed in 10% formalin solution and paraffin blocks were prepared which were cut at 4-5 microns thickness and were subsequently stained with hematoxylin and eosin. Special stains like mucicarmine; PAS, etc were employed wherever necessary. The Histopathological classification of tumors was done according to the recommendation by W.H.O.

Inclusion criteria

All the patients with lesions of uterine cervix were included for histomorphological evaluation.

Exclusion criteria

Patients with various lesions arising from the uterus, vulva, vagina and parametrium or with lesions arising from neighboring organs extending in cervical

canal but not involving cervical tissue were excluded (eg. endometrial polyp).

RESULTS

The present study consisted of Histopathological analysis and the clinical correlation of neoplastic cervical lesions encountered in the study center. Total of 7870 specimens were received for the study during the three years study period (June 2008 to May 2011). Out of these cervical specimens were 1260 (16.01%). (See table 1.)

Total female genital tract specimens found were 3961, out of these cervical specimens constituted 32.31%. Cervical lesions form a major part of female genital tract lesions. (See table 2.)

From the above table it is observed that hysterectomy was the most common type of specimen received for histopathological examination followed by punch biopsy specimens. (See table 3.)

From the above table it is observed that inflammatory lesions were the commonest lesions of the cervix. Next most common lesions were malignancies of the cervix followed by benign lesions and then cervical intraepithelial neoplasias and least common were cervical glandular lesions. (See table 4.)

From the above table it is obvious that incidence of different malignancies of the cervix were more common between 50-60 years of the age group followed by 40 - 50 years. CIN was common in age group 40-50 years and benign lesions were common in age group 30-50 years.

Benign lesions of the cervix

Out of the total 1260 specimens examined, 78 benign lesions (6.19%) were found. (See table 5.)

The above table shows that the most common benign lesion was endocervical polyp (77.63%), followed by leiomyomatous polyp (22.37%). These benign lesions are common in the age group 40 -50 years. (See table 6.)

The above table shows that endocervical polyp was most commonly seen in patients with clinical diagnosis of polyp, and dysfunctional uterine bleeding. The leiomyomatous polyp was most commonly present in patients with fibroid uterus and presented as polyp.

Cervical intraepithelial neoplasia

The occurrence of cervical intraepithelial neoplasia in this study is 51 out of 1260 cases i.e. 4.04%. The cervical intraepithelial neoplasia was mainly of squamous cell origin. (See table 7.)

The occurrence of cervical intraepithelial neoplasia in this study was 51 out of 1260 cases (4.04%). The cervical intraepithelial neoplasia was of mainly squamous cell origin. There were no cases of cervical intraepithelial glandular neoplasia. From the table, it could be seen that CIN was most common in 41-50 years age group and less below 30 or above 60 years, (specifically CIN II was the predominant grade). (See figure 1.)

From the above figure, it is seen that most common presentation in patients with CIN was metrorrhagia and white discharge per vaginum.

Cervical malignancies

See table 8.

From above table, it is observed that the occurrence of cervical malignancy is 15.15% in 2009, 13.41%in 2010 and 11.66% in 2011. (See table 9.)

From the above table, it is evident that cervical malignancies formed a major part of female genital tract malignancies constituting 91.11% (164 out of 180 cases). (See table 10.)

Total clinically evident malignancy cases were 121 and all cases found to be

positive for malignancy on Histopathological examination. There were 87 cases suspicious of malignancy out of which 66 found to be positive for malignancy. Only two cases, which were not suspicious of malignancy, turned out to be positive for malignancy. (See table 11.)

From above table, it is evident that squamous cell carcinoma was the predominant histological type of cervical malignancy constituting 95.73% and the incidence was highest in the age group 41 to 60 years of age.

Three cases of adenocarcinoma (1.82%) and two cases of neuroendocrine carcinoma and two cases of adenosquamous carcinoma (1.19%) were also encountered in this study. (See figure 2.)

Squamous cell carcinoma was classified according to Broder's grading system into well moderate and poor at the time of initial diagnosis. Out of total 157 cases of squamous cell carcinoma of the cervix, 147 cases were graded according to Broder's classification. In remaining 10 cases, grading was not possible and they were reported as squamous cell carcinoma only since the punch biopsy submitted was small containing tiny bits of tumour admixed with blood clots. (See figure 3.)

From above figure, it is seen that large cell non-keratinizing type was the most common 97 cases (61.70%) subtype of squamous cell carcinoma followed by large call keratinizing type 48 cases (30.50%). Least common was small cell non-keratinizing type. (See table 12.)

Squamous cell carcinoma most commonly presented with growth, bleeding in the form of postcoital bleeding and metrorrhagia. Two cases of adenocarcinoma both presented with growth and per vaginal discharge. History was not known in one case of neuroendocrine carcinoma and one case presented with growth and foul smelling discharge.

Two cases of adenosquamous carcinoma presented with postcoital bleeding along with per vaginal discharge. (See table 13.)

From above table, it is seen there was a good correlation between Pap smear findings and Histopathological findings 17 cases found as L-SIL on pap were diagnosed as L-SIL on histopathology. Total 14 cases of H-SIL were found on Pap smear. Out of these 12 cases were diagnosed as H-SIL on histopathology also. One case diagnosed as H_SIL on Pap smear turned out to be moderately differentiated squamous cell carcinoma on histopathology and one more case was found as well differentiated carcinoma on histopathology.

DISCUSSION

Constant attempts are being made to alleviate the misery of the human race caused by malignancies in general and of women from carcinoma of cervix in particular[18]. The tremendous success achieved in early diagnosis and adequate treatment of cervical cancer is a testimony to this fact. Histopathologically accurate and complete diagnosis of the disease process is of prime importance to understand the prognosis and thereby proper management[19].

Prevalence

Over three years of study period, the Department of pathology, Mahadevappa Rampure Medical College Gulbarga, received 1260 cervical specimens i.e. 16.01% out of total 7870 specimens. Thus, cervical specimens formed a significant part of surgical pathology section of this department.

Benign lesions of cervix

A total of 78 (6.19%) were benign lesions among 1260 cases. (See figure 4.)

Amongst the benign neoplasm endocervical polyp was the commonest

diagnosis, seen in 59 out of 76 cases of benign lesions. Endocervical polyps were seen most often in the 40-50 years age group. Most of them were detected in the cases with clinical diagnosis of cervical polyp itself[14]. Leiomyomatous polyps constituted 19 out of 78 cases of benign lesions (22.37%). Majority of them were seen in the 30-50 years age group and most of them found in cases with clinical diagnosis of fibroid uterus[14]. The present study correlated well with findings by Vaishali *et al*.

Endocervical polyps occur in 2-5% of multigravida women in age range of 30-59 years. The present study correlated with these historical findings. Histologically they showed, dilated endocervical glands in inflamed myxoid stroma.

Cervical intraepithelial neoplasia

Intraepithelial neoplasia is a very critical point in the natural history of cervical carcinoma. The importance of detecting and treating patients at this stage is that, the disease free interval can be almost 100%. With the advent of cytology, the honour of detecting these lesions is shared with the cytopathologist. Even in an experienced centre having a high degree of accuracy in reporting cervical smear when aided by colposcopy, tissue diagnosis still remains indispensible for definite histological confirmation before planning therapy. In addition, intraglandular lesions are not often accessible to the cytopathologist and recourse has to be taken to a biopsy. (See figure 5.)

From the above figure, it is evident that [CIN-I] mild dysplasia made up highest number of cases of dysplasia in the studies conducted by earlier studies[1-3]. In this study moderate dysplasia [CIN-II] made up the maximum number of dysplasia cases. The cases of low grade CIN diagnosed by cytology are followed up and that of high grade CIN are biopsied. This may explain for CIN II more commonly encountered in present study.

Most cases of severe dysplasia were found in the age groups 40-50 and 50-60 years. The incidence of squamous cell carcinoma was also highest in the same age groups. This finding supports the theory of evolution of invasive carcinoma from the preceding lesion i.e. CIN-III.

The division of dysplasia into mild, moderate and severe is quite arbitrary and hence subject to many subjective variations in interpretation. This makes comparison of results quite difficult due to lack of uniformity and precision in the definitions of mild, moderate and severe dysplasia. (See table 14.)

From above table, it is seen that the prevalence of CIN in present study is in comparison with the study by Garud *et al*[3] and it is more when compared to the study by Hall *et al*[1]. A low incidence of CIN and high incidence of cervical malignancy as seen in this study may be due to the reluctance on part of women to undergo physical examination and probably due to ignorance and lack of proper facilities. Most of the authors were of the opinion that the incidence and prevalence of squamous intraepithelial neoplasia was higher with HPV infection and in all generations of women aged from 25-60 years[4]. Sadeghe *et al*[5] documented CIN in 35-39 years of age. In the present study, age range was 30-60 years with maximum number of cases in age group 41-50 years.

Malignant lesions of the cervix

The incidence of cervical malignancy was noticeable i.e. 13.01% (164 cervical malignancies out of 1260 total cervical specimens) and most common malignant tumour of female genital tract in this study. This is a very significant finding. It gives a measure of the high risk of

malignant transformation in the cervix. The incidence of cervical malignancy is reported variably. (See table 15.)

From above table it is observed that in a study at Solapur in 1985, by Solapurkar[6] found 33.8% [488 out of 1472 cases] prevalence of cervical cancer, which is comparable to the present study. Whereas the prevalence is more in present study as compared to that done by Singh *et al*[2]. In this study, an attempt was made to correlate the clinical diagnosis and the histopathology of malignant tumours of uterine cervix.

The cases studied during this period were classified as clinically evident malignancy, clinically suspicious of malignancy and those cases where there was no clinical suspicion of cervical malignancy, these were the hysterectomy specimens where hysterectomy was performed for reasons not pertaining to the cervix.

All 121 cases of clinically evident malignancy group turned out to be positive for malignancy on histopathology and not even a single case was found to be negative for malignancy. Thus, the Clinico-pathological correlation in this category is very good. 78.16% of biopsies where malignancy was clinically suspected were found positive for malignancy on histopathology, while 21.84% were negative for malignancy. This stresses the importance of suspecting malignancy in unhealthy cervix and advising the patient to undergo a biopsy.

In this group of clinically suspicious for malignancy the greater proportion of malignancies were diagnosed in the 40 to 50 years age group, the later decades tending to present as clinically evident malignancy. An unhealthy cervix that needs to be biopsied stands the greatest chance of harboring a malignancy if the patient is in the 36 to 45 years age group.

At the same time, clinical suspicion of malignancy should be followed by a biopsy even in the younger age group where also significant number of cases was diagnosed as malignancy. A high index of suspicion would ensure against under diagnosis of cervical malignancy.

Two cases, which were clinically not suspicious of malignancy, turned out to be positive for malignancy. It was the case of 46 years old women whose hysterectomy was done for third degree utero-vaginal prolapse. In addition, one case of 50 years whose hysterectomy was done for dysfunctional uterine bleeding. This indicates that all hysterectomies should be examined thoroughly histopathologically even if there is no clinical suspicion. (See table 16.)

Squamous cell carcinoma was the commonest of the invasive lesions encountered in this study, accounting for 95.73 %of the total invasive carcinoma. This is comparable with the figures obtained by Solapurkar *et al* (95.70%) and Gupta *et al* (94.26%).

Grading of squamous cell carcinoma

Squamous cell carcinomas were graded in this study according to Broder's classification into well-differentiated squamous cell carcinoma (30.09%), moderately differentiated squamous cell carcinoma (63.13%) and poorly differentiated squamous cell carcinoma (5.42%). Thus, it is observed that majority of the squamous cell carcinomas were of the moderately differentiated type. This finding also parallels similar findings in various studies conducted worldwide.

Histological subtypes of squamous carcinoma

See figure 6.

It is seen that the figures obtained in the study tally with those of Misra *et al*[9], while Gupta *et al*[7] *et al*[8] obtained lower figures for the large cell non-keratinizing

type of squamous cell carcinoma. The large cell non-keratinizing type of squamous cell carcinoma seen to be the commonest type in all the above studies, except the one Swan *et al*[8].

Squamous cell carcinoma are also classified according to the degree of squamous differentiation in to (a) Large cell keratinizing carcinoma (b) Large cell non-keratinizing carcinoma and (c) Small cell non-keratinizing carcinoma. Small cell non-keratinizing carcinomas are morphologically and functionally identical to small cell undifferentiated carcinoma arising at other anatomic sites.

When the incidence of squamous cell carcinoma in the various age group was studied, the highest incidence of squamous cell carcinoma was found in the 40-50 years age group [36.63%] followed by 24.42% in the 30-40 years age group, majority being moderately differentiated.

Gompell and Silverberg reported that out of the 4147 cases of carcinoma cervix studied by them 88.8% of the cases were in the 31- 60 years age group[10]. Solapurkar in 1985 found evidence of squamous cell carcinomas to be highest in the 36-65 years age group[6]. Histologically the major subtype was moderately differentiated carcinoma. N Jeebun *et al*, 2006 documented the common occurrence of cervical cancer in the age range of 50-60 years[16]. Jyothi *et al*., 2009 reported that out of 1156 cases of carcinoma cervix studied by them 901 cases (41.55%) were noted in 40-60 years age group[15]. In the present study 121 (73.78%) were noted in 40-60 years age group. Hence, the present study correlates well with the study by Solapurkar *et al*[6]. Six cases of small cell carcinoma were found in this study.

Carcinoma cervix passes through premalignant intraepithelial changes for a variable duration of time ranging from few to many years before turning frankly malignant. Cramer DW has stated that patients with invasive squamous cell carcinoma are 15-23 years older than patient with high grade SIL and 8 years older than patients with microinvasive carcinomas[11]. Findings of this study are in accordance to the above fact. (See table 17.)

The above table shows that in comparison to squamous cell carcinoma the incidence of adenocarcinoma was quite less. The prevalence of adenocarcinoma is seen to vary from 1.28% to 8.7%, as depicted in above table. In the current study, 3 case of adenocarcinoma were encountered. One case of papillary adenocarcinoma and two endocervical type of adenocarcinoma in the age group 40-60 years. Chritopherson *et al* 1979 documented the mean age of adenocarcinoma range from 41-59 years for advanced invasive carcinoma. Present study correlated with the above author[12]. It accounted for 1.82% of total invasive lesions, which correlates with the finding of Gupta *et al* and Solapurkar *et al*[6,7]. The studies conducted in the USA, by Swan *et al* showed a noticeably high percentage of adenocarcinoma, in comparison to Indian studies, including the present study[8]. This is a possible reflection of the ideal screening facilities in western countries. (See table 18.)

The prevalence of adenosquamous carcinoma is seen to vary from 6.4%-8.96% in different studies. In the current study, two cases of adenosquamous carcinoma were found i.e. an incidence of 1.21% was obtained which compares with the figures of Gupta *et al*[7]. In the present study, 2 cases were noted in the age group 40-60 years. Buckley *et al* documented in younger age group[13]. (See figure 7.)

In summary

- Inflammatory lesions were the most common cervical lesions followed by malignancies.

- Endocervical polyp was the most common benign cervical lesion followed by leiomyomatous polyp. These benign lesions commonly seen in reproductive age group i.e.30-50 years and in patients with PID, DUB, fibroid uterus etc.
- Cervical intraepithelial neoplasia was found in the age range 30-40 years. CIN II was the predominant lesion.
- CIN was detected 10-12 years earlier than the age group of invasive malignancies. This finding is consistent with the natural history of development of malignancy.
- Cervical malignancies formed most common malignant tumours of the female genital tract, mostly seen in elderly females.
- Commonest cervical malignancy was squamous cell carcinoma, moderately differentiated being the commonest type.

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Table 1. Year wise distribution total number of cervical specimens

Year	Total	Female	Cervical specimens	% Cervical Lesions	% cervical lesions among female specimens
2008 (June–Dec)	1553	812	234	15.06%	28.81%
2009	2605	1263	376	14.43%	29.77%
2010	2426	1254	410	16.90%	32.69%
2011 (Jan –May)	1286	632	240	18.66%	37.97%
TOTAL	7870	3961	1260	16.05% (Average)	32.31% (Average)

Table 2. Shows cervical lesions in various types of biopsies

Hysterectomy	Cervical punch biopsy	Polypectomy	Endocervical curettage	Total
953	259	36	12	1260

Table 3. Histopathological distribution of cervical lesions

Cervical lesions	Total No. of Cases	Percentage
Non-neoplastic		
Inflammatory	935	74.20%
Non-neoplastic cervical glandular lesions	15	1.19%
Neoplastic		
Benign	78	6.19%
CIN	51	4.04%
Malignant	164	13.01%
Inconclusive	17	1.34%
Total	1260	100%

Table 4. Distribution of neoplastic cervical lesions according to age

Age	<30	31-40	41-50	51-60	>60	Total	Percentage (%)
Benign	2	18	48	8	2	78	26.62
CIN	1	8	25	15	2	51	17.40
Malignant	3	18	53	75	15	164	55.97

Table 5. Distribution of benign lesions according to age groups

Age in years	Endocervical polyp	Leiomyomatous polyp	Total
<30	1	1	2
31-40	16	2	18
41-50	37	11	48
51-60	5	3	8
>60	O	2	2
Total	59	19	78
Percentage	77.63%	22.37%	100%

Table 6. Correlation between clinical diagnosis and histopathology of benign cervical lesions

Benign lesion	Clinical diagnosis				Total
	DUB	Fibroid uterus	Cervical polyp	Ovarian cyst	
Endocervical polyp	17	4	35	3	59
Leiomyomatous polyp	4	9	5	1	19
Total	21	13	40	4	78

DUB –Dysfunctional uterine bleeding

Table 7. Age wise distribution of cervical intraepithelial neoplasia (CIN)

Age in years	CIN I	CIN II	CIN III	Total
<30	1	0	0	1
31-40	2	3	3	8
41-50	5	14	6	25
51-60	7	6	2	15
>60	0	2	0	2
Total	15	25	11	51
Percentage	29.41%	49.01%	21.58%	100%

CIN–Cervical intraepithelial neoplasia

Table 8. Table showing year wise prevalence of cervical malignancies

	June 2008	2009	2010	May 2011
Total cervical specimens	234	376	410	240
Cervical malignancies	35	57	55	28
Percentage	14.95%	15.15%	13.41%	11.66%

Table 9. Distribution of cervical malignancies in relation to total female genital tract malignancies

Lesions	Number of cases	Percentage
Other female genital tract malignancies	16	8.89%
Cervical malignancies	164	91.11
Total	180	100%

Table 10. Correlation between the clinical diagnosis and histopathological diagnosis of cervical malignancies

	Clinical diagnosis					
	Clinically evident malignancy		Clinically suspicious of malignancy		Clinically not suspicious of malignancy	
Histopathologically	+ve	-ve	+ve	-ve	+ve	-ve
Total	121	0	66	21	2	0

Table 11. Histological types and age wise distribution of invasive carcinomas

Cervical malignancies	Age					Total	Percentage
	<30	31-40	41-50	51-60	>60		
Squamous cell carcinoma	3	18	49	72	15	157	95.73%
Adenocarcinoma			2	1		3	1.82%
Adenosquamous carcinoma			1	1		2	1.19%
Neuroendocrine carcinoma			1	1		2	1.19%

Table 12. The data tabulation indicates that the invasive carcinomas were presented with two or more signs or symptoms

Invasive carcinoma	Growth	Postcoital bleeding	Per vaginal foul smelling discharge	Metrorrhagia	Urinary symptoms
Squamous cell carcinoma	97	45	57	36	4
Neuroendocrine carcinoma	1	0	0	0	0
Adenocarcinoma	1	2	1	0	0
Adenosquamous carcinoma	2	1	1	0	0
Total	100	48	59	36	4

Table 13. Showing correlation between Pap smear and histopathological findings

Pap smear diagnosis	Histopathological diagnosis							
	L-SIL		H-SIL		WD SCC		MD SCC	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
L SIL	17	-						
H-SIL	-	-	12		2		1	

L-SIL: Low-grade squamous intraepithelial lesion; H-SIL: High-grade squamous intraepithelial lesion; WDSCC: Well-differentiated squamous cell carcinoma; MDSCC: Moderately differentiated squamous cell carcinoma.

Table 14. The total prevalence of cervical intraepithelial neoplasia

Studies	Prevalence of CIN
Hall *et al* (1)	1.2 to 3.1 %
Singh *et al* (2)	20 %
Garud *et al* (3)	3.2 %
This study	4.04 %

Table 15. Shows the distribution of cervical cancer reported by other authors

Study	No. of cases of Ca. cervix	Total cases of cervical lesions Studied	%
Solapurkar *et al* (6)	488	1472	33.8%
Singh *et al* (2)	-	-6%	6%
Present study	164	1260	13.01%

Table 16. Comparative distribution of squamous cell carcinoma of the cervix in different studies

S. No.	Authors	Year	Total invasive carcinoma	Squamous carcinoma	Percentage
1	Gupta *et al* (7)	1979	122	115	94.26%
2	Solapurkar *at al* (6)	1985	466	446	95.70%
3	Swan *et al* (8)	1973	223	191	85.65%
4	Present study	2011	164	157	95.73%

Table 17. Comparative distribution of adenocarcinoma of the cervix

S. No.	Authors	Total invasive carcinoma	Adenocarcinoma	Percentage
1	Swan *et al* (8)	223	12	5.38%
2	Gupta *et al* (7)	122	2	1.63%
3	Solapurkar *et al* (6)	466	6	1.28%
4	Present study	164	3	1.82%

Table 18. Comparative distribution of adenosquamous carcinoma of the cervix

S. No.	Authors	Total invasive carcinoma	Adenosquamous carcinoma	Percentage
1	Swan *et al* (8)	223	20	8.96%
2	Gupta *et al* (7)	12	2	1.63%
3	Solapurkar *et al* (6)	466	3	o.64%
4	Present study	164	2	1.21%%

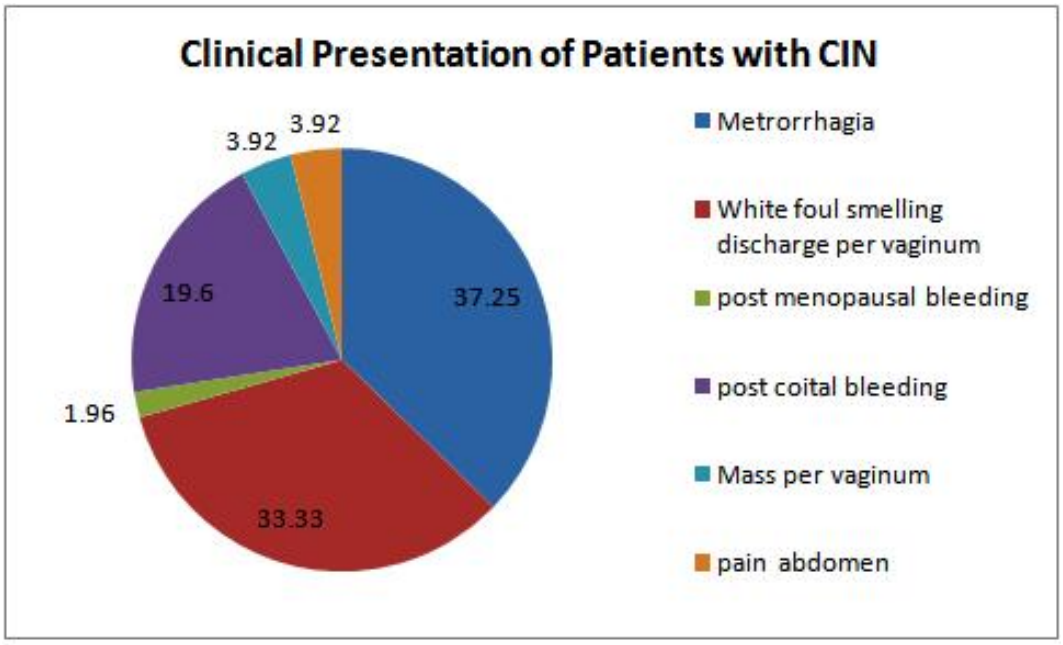

Figure 1. Clinical presentation of patients with CIN (percentage)

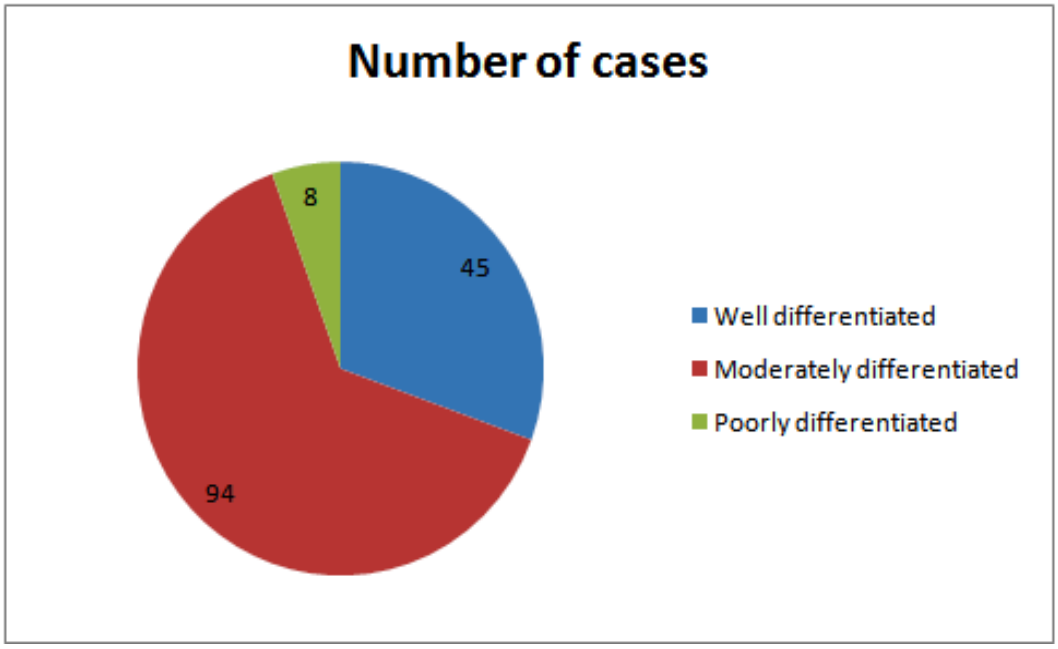

Figure 2. Distribution of squamous cell carcinoma according to grades

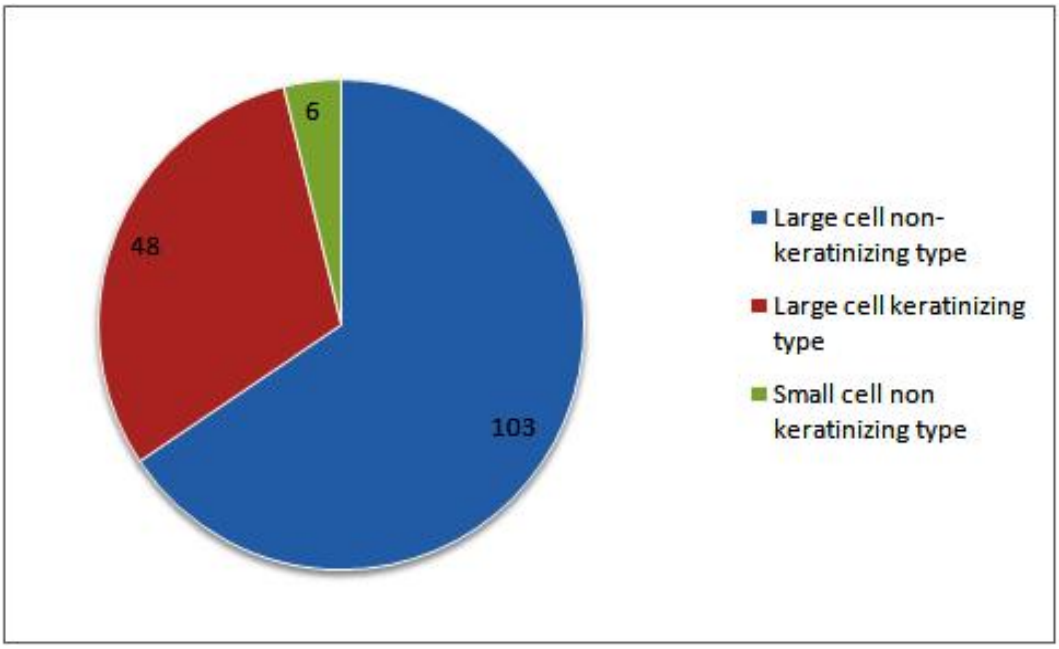

Figure 3. Distribution of various histological subtypes of squamous cell carcinoma

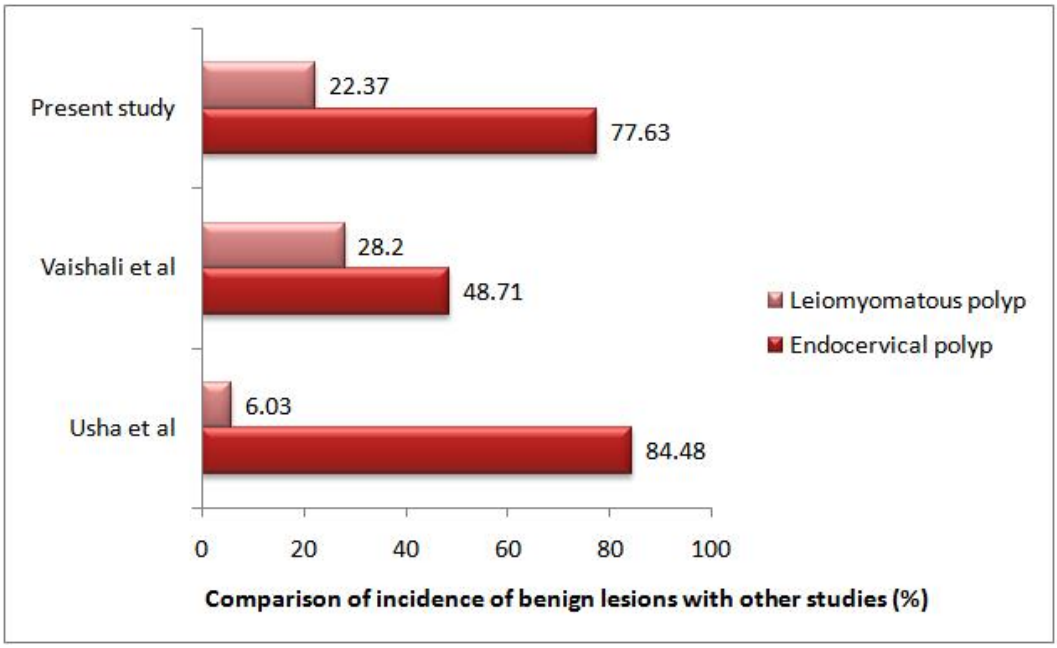

Figure 4. Types and percentages of benign lesions found by other authors

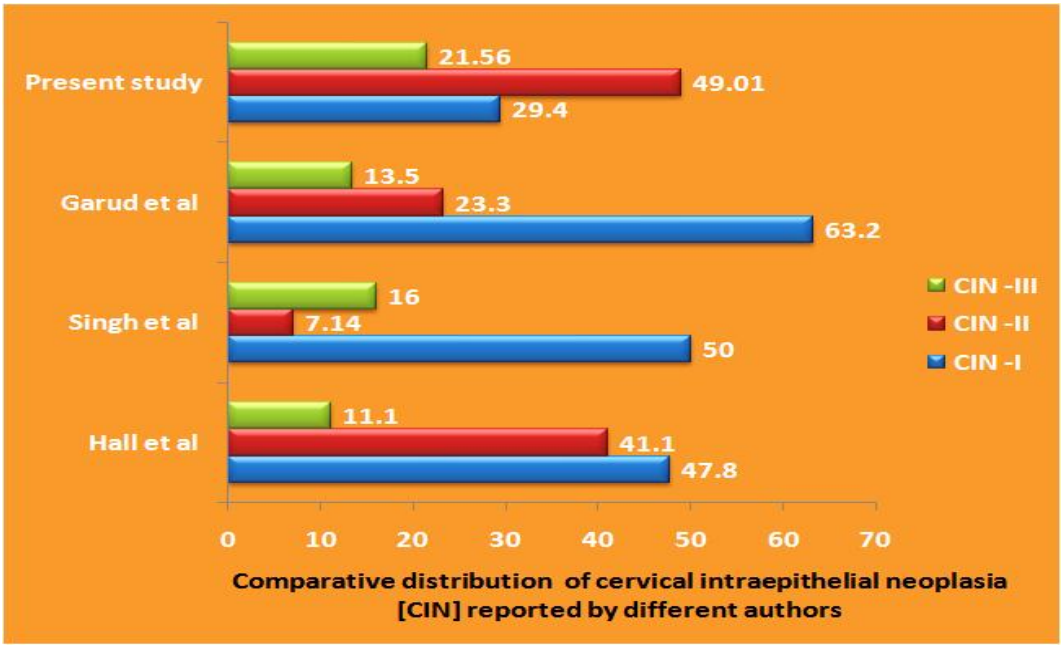

Figure 5. Shows a comparative distribution of cervical intraepithelial neoplasia [CIN] reported by different authors (percentage)

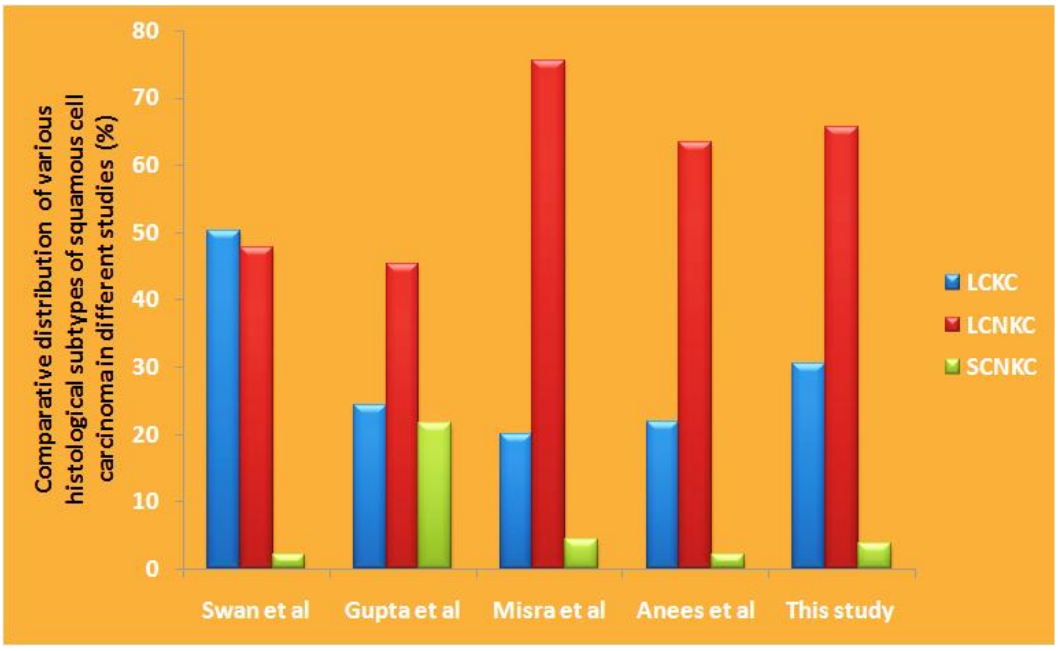

Figure 6. Comparative distribution of various histological subtypes of squamous cell carcinoma in different studies

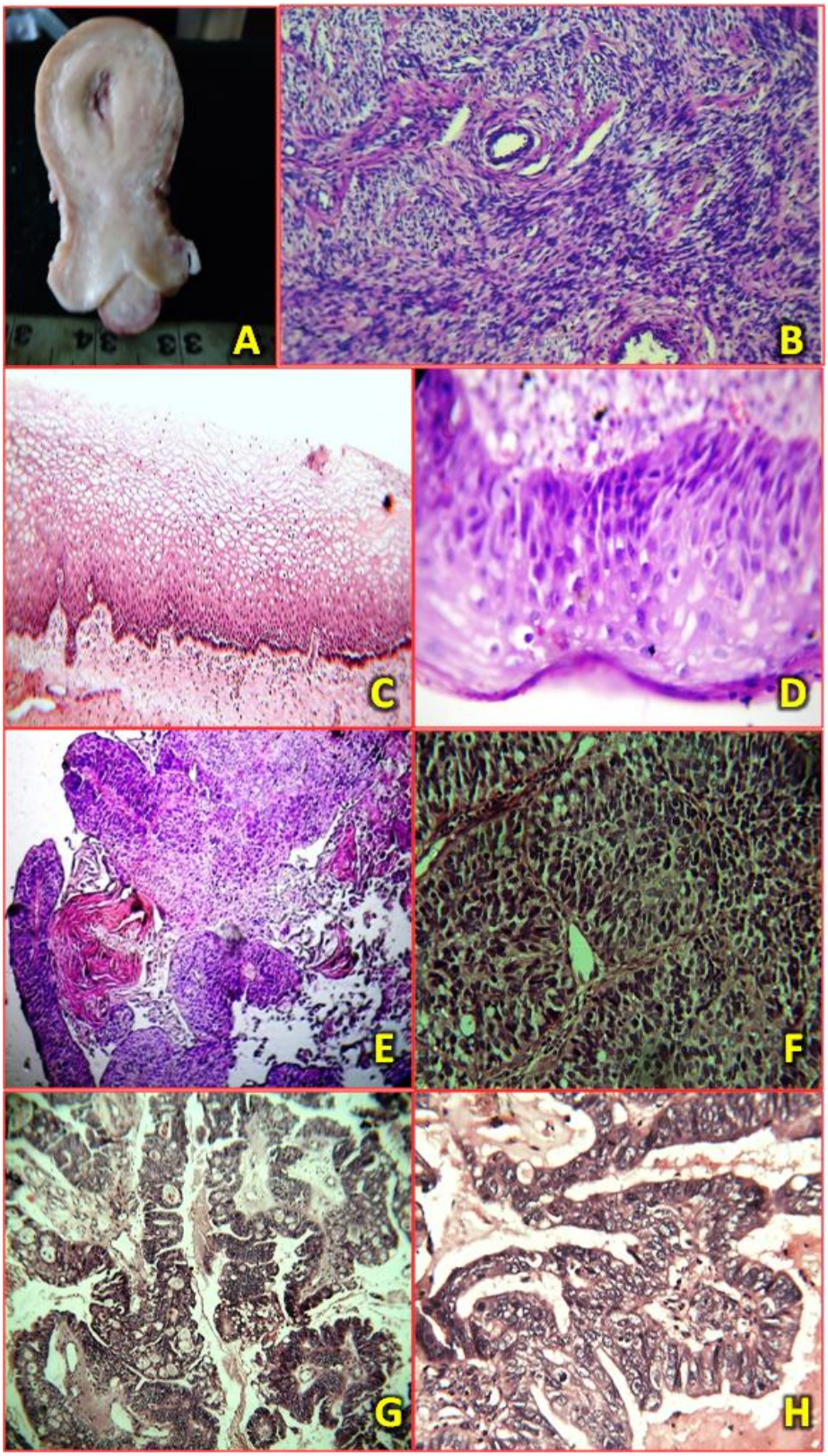
A
B
C
D
E
F
G
H

Figure 7. Representative neoplastic histological lesions of the uterine cervix recorded during the study. A - Cut section of uterus showing cervical polyp; B - Leiomyomatous polyp (H&E:X40) showing spindle cells arranged in fascicles with intervening prominent blood vessels; C - CIN I. (H&E:X10) Showing nuclear atypia limited to lower one third of the cervical epithelium and koilocytosis; D - Cervical intraepithelial neoplasia grade II (H&E:X40) showing nuclear atypia is noted upto 2/3 of thickness of cervical epithelium; E - Large cell keratinizing squamous cell carcinoma (H&E:X10) showing sheets of squamous cells with pleomorphism hyperchromatism and abundant keratin pearl; F - Large cell non kearatinizing type of squamous cell carcinoma (H&E:X40) Showing individual cell keratinization, but no keratin pearls; G - Adenocarcinoma of the cervic endocervical type (H&E:X10) with Well differentiated glandular pattern ,cells are elongated and columnar, with hyperchromatic nuclei; H - Adenocarcinoma of the cervix higher magnification (H&E:X40) Showing nuclear atypia and prominent nucleoli