

A HISTOPATHOLOGICAL STUDY OF NEOPLASTIC LESIONS OF UTERINE CERVIX OF PERI AND POSTMENOPAUSAL WOMEN

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ABSTRACT

BACKGROUND

Neoplastic lesions of uterine cervix is one of the most common malignant neoplasms in women. The tremendous success in giving a confirmed diagnosis of the disease by doing histopathological examination is of prime importance in giving the most appropriate treatment and to understand the prognosis.

The aim of the study is to study the incidence and age-wise distribution of the neoplastic lesions of the uterine cervix in peri and postmenopausal women by doing histopathological examination of neoplastic lesions and by doing correlation of clinical findings with histopathological examination.

MATERIALS AND METHODS

The study included 803 cases of total cervical specimens, out of which 180 cases of neoplastic cervical lesions were found, out of which 150 cases were found in the peri and postmenopausal age groups, i.e. above 40 years of age. The study was done in Gauhati Medical College and Hospital, Guwahati, from the period 1st June, 2013, to 1st June, 2014. The specimens that were included in the study were punch biopsies, hysterectomies and polypectomies and cervical specimens were studied by doing histopathological examinations.

RESULTS

Out of the 150 cases of neoplastic lesions in the peri and postmenopausal women, the most common neoplastic lesion was cervical intraepithelial neoplasia, i.e. CIN (8.3%) of the cervix, followed by malignant (5.6%) and benign (4.7%) lesions of the cervix in this study group of patients.

CONCLUSION

Histopathological examination of the cervix is an effective method of giving a confirmed diagnosis of all the noncancerous, precancerous and cancerous lesions of uterine cervix, which helps in giving the most appropriate treatment and also helps in understanding the prognosis.

KEYWORDS

Histopathological Examination, Neoplastic Lesions, Cervical Intraepithelial Neoplasia, Perimenopausal, Postmenopausal.

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BACKGROUND

Cervical cancer holds the second position amongst the malignant neoplasms of the female population at the global level after the breast cancer representing 10% from all kinds of cancer. In 2008, cervical cancer ranked third among all malignancies for women, an estimated 5,29,000 new cases were identified globally and 2,75,000 deaths were recorded.¹ Recently, carcinoma of the uterine cervix ranks as the second malignant cancer and the third leading cause of cancer deaths in women. Approximately, 3,70,000 new cases are diagnosed annually with a 50% death rate.²

Histopathological studies of cervical cancer along with clinical correlation is very important for early confirmed diagnosis. Also, the samples have the advantage of being readily available, histopathological test being relatively cheap and technically easy. The tremendous success in the early confirmatory diagnosis of the disease process is of prime importance in giving the most appropriate treatment and to understand the prognosis. This have also brought about a marked decline in both the incidence and mortality from cervical cancers.

AIMS AND OBJECTIVE

1. To evaluate the incidence of neoplastic lesions of uterine cervix in peri and postmenopausal women in Gauhati Medical College and Hospital, Guwahati.
2. To study the age distribution of various types of neoplastic lesions of the cervix.
3. To study the histopathological findings of the neoplastic lesions.
4. To correlate the clinical findings with histopathology.

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MATERIALS AND METHODS

The present study was conducted at the Department of Pathology in Gauhati Medical College and Hospital, Guwahati. This study included 803 cases that were submitted from the Department of Obstetrics and Gynaecology of Gauhati Medical College and Hospital, Guwahati for histopathological examination from 1st June, 2013 to 1st June, 2014.

The specimens that was included in the study were punch biopsies, hysterectomies and polypectomies.

Inclusion and Exclusion Criteria

A relevant clinical profile was taken from the case records and requisition forms after preparation of the proforma, which included details of the patient with chief complaints and clinical findings, which included general and systemic examinations done. Also, results of the radiological and laboratory investigations done were taken.

All the specimens were fixed in 10% formalin and after grossing the specimen processing was done and slides were prepared using Haematoxylin and Eosin stain as a routine histopathological stain. Diagnosis is established from history, clinical diagnosis, but histopathology was confirmatory to diagnosis. Reported cases found to be neoplastic lesions of uterine cervix were selected.

RESULTS

Out of 803 cases of total cervical specimens, only 180 cases (22.4%) of neoplastic cervical lesions were found, out of which 150 (18.6%) cases was found in peri and postmenopausal age group (83.3%) that is above 40 years of age. Neoplastic lesions of uterine cervix were found to occur mostly at this age group.

It was observed that the total inflammatory/non-neoplastic lesions were the commonest lesions (77.6%) of the cervix. It is also observed that the most common neoplastic lesions were cervical intraepithelial neoplasia (8.3%) of the cervix, followed by the malignant (5.6%) and benign (4.7%) lesions of the cervix in this study group of patients.

Cervical Lesions	Total No. of Cases	%
Benign (above 40 years)	38	4.7
CIN (above 40 years)	67	8.3
Malignant (above 40 years)	45	5.6
Neoplastic lesions in lower age group (less than 40 years of age)	30	3.7
Total inflammatory, non-neoplastic, glandular lesion (in all the 803 cases)	623	77.5

Table 1. Histopathological Distribution of Cervical Lesions in Peri and Postmenopausal Age Groups and Other Age Groups

It was also seen that the incidence of different malignancies of the cervix were more common between 51-60 years followed by 41-50 years. CIN were more common in age group 41-50 years. Benign lesion was common in 41-50 years of age.

Benign Lesions of the Cervix

Out of 803 total cervical specimens, 150 cases of neoplastic cervical lesions were found in the particular age group of patients, out of which 38 benign lesions (4.7%) were found in this study.

Most common benign lesions was endocervical polyp (73.7% or 3.48% of total cervical lesions) followed by leiomyomatous polyp (26.3% or 1.2% of total cervical lesions). These benign lesions are common in the age group of 41-50 years.

The 28 cases of endocervical polyp was most commonly seen in 18 numbers of patients with clinical diagnosis of cervical polyp and 7 numbers of patients with dysfunctional uterine bleeding and the total 10 cases of leiomyomatous polyp most commonly presented with 6 numbers of patients with clinical diagnosis of fibroid uterus and 2 cases each presented as cervical polyp or dysfunctional uterine bleeding.

Benign Lesion	Clinical Diagnosis				Total
	DUB	Fibroid Uterus	Cervical Polyp	Ovarian Cyst	
Endocervical polyp	07	02	18	01	28
Leiomyomatous polyp	02	06	02	0	10
Total	09	08	20	01	38

Table 2. Correlation between Clinical Diagnosis and Histopathology of Benign Cervical Lesions

Cervical Intraepithelial Neoplasia (CIN)

Out of 803 total cervical specimens, 150 cases of neoplastic cervical lesions were found in the particular age group of patients, out of which 67 cases of cervical intraepithelial neoplasia (8.3%) were found in this study. The intraepithelial neoplasia were mainly of squamous cell origin. CIN 2 was the predominant grade found and it was most common in 41-50 years of age group.

The age-wise distribution, grades of CIN as CIN 1, CIN 2 and CIN 3 and their percentages out of the total cervical

lesions, which are 2.36%, 4.73% and 1.24%, respectively are as shown in the Table 3.

Age in Year	CIN 1	CIN 2	CIN 3	Total
41-50	08	24	06	38
51-60	11	08	03	22
>60	0	06	01	07
Total	19	38	10	67
Percentage	2.36	4.73	1.24	

Table 3. Age Wise Distribution of Cervical Intraepithelial Neoplasia (CIN)

It is seen that most common presentation in patients with CIN was metrorrhagia in 27 number of cases; discharge per vagina in 23 number of cases; mass per vagina (those are associated with UVP) in 20 number of cases; also postcoital bleeding in 9 number of cases; postmenopausal bleeding in 4 number of cases; and pain abdomen in 2 number of cases, which is shown in Table 4. They were mostly with clinical diagnosis of PID, uterine fibroid or uterovaginal prolapse.

Clinical Symptoms	Number of Patients	Percentage
Metrorrhagia	27	40.2
White discharge p/v	23	34.3
Mass per vagina	20	29.8
Postcoital bleeding	09	13.4
Postmenopausal bleeding	04	5.9
Pain abdomen	02	03

Table 4. Clinical Presentation of Patients with CIN

Cervical Malignancies

Out of 803 total cervical specimens, total 45 cases of cervical malignancy (5.6%) were found at the particular age group of patient in this study.

The total female genital tract malignancies (including endometrial, ovarian, etc.) were 57 cases at this particular age group of the study, so total 12 cases of other female genital tract (excluding cervix) were found. So, it is observed that cervical malignancies formed a major part of female genital tract malignancies constituting 78.94% (45 out of 57 cases).

Out of total 45 cases of cervical malignancy, 40 cases were of the histological type of squamous cell carcinoma (88.88%), 3 cases of adenocarcinoma (6.6%) and only 2 cases of adenosquamous carcinoma (4.4%) were found. It is evident that squamous cell carcinoma was the

predominant histologic type of cervical malignancy and the incidence was highest in the age group of 51 to 60 years, that is 22 (55%) out of 40 cases. The cases of adenocarcinoma were found in the age group of 41-50 years and the cases of adenosquamous carcinoma were also found in the age group of 41-50 years in this study.

Squamous cell carcinoma was classified according to Broder’s grading system into well, moderate and poorly-differentiated carcinomas at the time of initial diagnosis. Out of total 40 cases of squamous cell carcinoma, 22 number of cases (55.0%) were moderately-differentiated grade of carcinomas, followed by 12 number of cases (30.0%) of well-differentiated carcinomas and least common was poorly-differentiated carcinomas, only 6 number of cases (15.0%).

Squamous cell carcinoma was also classified according to the degree of squamous differentiation into (a) Large cell non-keratinising type, which was the most common subtype of squamous cell carcinoma that is 25 cases (62.5%), followed by (b) Large cell keratinising type, 13 cases (32.5%) and least common was (c) Small cell non-keratinising type, only 2 cases (5.0%).

The clinical presentation of carcinoma of cervix presented with two or more symptoms and signs. Squamous cell carcinoma most commonly presented with growth, at about 33 number of cases; pervaginal foul-smelling discharge, at about 15 number of cases; bleeding in the form of postcoital bleeding, at about 12 number of cases; postmenopausal bleeding and metrorrhagia, at about 12 number of cases and also urinary symptoms at 3 number of cases.

The cases of adenocarcinoma and adenosquamous carcinomas presented with growth, postcoital bleeding and pervaginal discharge. Table5 shows the clinical presentations of different types of cervical carcinoma at the present study.

Invasive Carcinoma	Growth	Postcoital Bleeding	Pervaginal Foul Smelling Discharge	Postmenopausal Bleeding	Urinary Symptoms
Squamous cell carcinoma	33	12	15	12	3
Adenocarcinoma	3	2	1	-	-
Adenosquamous carcinoma	2	1	2	-	-
Total	38	15	18	12	3

Table 5. Clinical Presentation of Patients with Carcinoma

In the clinicopathological correlation of carcinoma of cervix, it is seen that the total clinically evident cases were 35 and all cases were found to be positive for malignancy on histopathological examination. There were 14 cases of suspicious malignancy, out of which 9 cases were found to be positive for malignancy. Only 1 case, which was not suspicious of malignancy turned out to be positive for malignancy on histopathology.

	Clinical Diagnosis					
	Clinically Evident Malignancy		Clinically Suspicious of Malignancy		Clinically not Suspicious of Malignancy	
	35		14		01	
Histopathologically	+ve	-ve	+ve	-ve	+ve	-ve
Total	35	0	09	05	01	0

Table 6. Correlation between the Clinical Diagnosis and Histopathological Diagnosis of Cervical Malignancies

DISCUSSION

Out of 803 cases of total cervical specimen, only 180 cases (22.4%) of neoplastic cervical lesion were found, out of which 150 (18.6%) cases was in peri and postmenopausal age group (83.3%) that is above 40 years of age. Neoplastic lesions of uterine cervix were found to occur mostly at this age group of patients. It was observed that the prevalence of neoplastic lesions correlate with the study conducted by Sinha Pet al.³

Benign Lesions of the Cervix

The benign lesions found in this study were 38 (i.e. 4.7%) out of 803 cases. This finding correlates with a study conducted by Gupta N et al.⁴ Amongst the benign neoplasm, endocervical polyp was the commonest diagnosis seen in 28 (73.7%) out of 38 cases of benign lesions or 3.48% of total cervical lesions and they were seen mostly in the 41-50 years age group. Common associated clinical features were history of bleeding per vagina or white discharge per vagina that correlate with the findings by Sidhalingreddy et al.⁵ Leiomyomatous polyps constituted 10 (26.3%) out of 38 cases of benign lesions or 1.2% of total cervical lesions and majority of them were seen in the 41-50 years age group and most of them were found in cases with clinical diagnosis of fibroid uterus that correlated with the study of Dr. Vaishali et al.⁶

Cervical Intraepithelial Neoplasia

Out of 803 total cervical specimens, total 67 cases of cervical intraepithelial neoplasia (8.3%) were found in this study. From various studies, it is seen that the prevalence of CIN in present study is almost equal with the study conducted by Sinha P et al³ and Gupta N et al.⁴

Most cases of severe dysplasia were found in the age group of 41-50 and 51-60 years. It correlates with the findings by Al-Jashamy K.⁷ and A. Bhagya Lakshmi et al.⁸ The incidence of squamous cell carcinoma was also highest in the same age group. This finding supports the theory of evolution of invasive carcinoma from the preceding lesion, i.e. CIN 3.

In this study, moderate dysplasia (CIN 2) is the maximum number of dysplasia cases that correlate with the study conducted by Sinha P et al.³

At the present study, the most common presentation in patients with CIN was metrorrhagia and discharge per vaginum that correlates with the finding by Girish D. et al.⁹

Malignant Lesions of the Cervix

The incidence of cervical malignancy was noticeable, i.e. 45 cervical malignancies out of 803 total cervical specimens (5.6%) and was a very significant finding and it comprises of 78.94% of total female genital tract malignancies. It gives a measure of the high risk of malignant transformation in the cervix.

It is observed that in a study by Talukder SI et al,¹⁰ prevalence of cervical cancer is comparable to the present study.

Squamous cell carcinoma was the commonest of the invasive lesions encountered in this study accounting for 88.88% of the invasive carcinoma. This is comparable with the figure obtained by Preeti et al.¹¹

The highest incidence of squamous cell carcinoma was found in the 51-60 years of age group (55.0%), followed by 30.0% in the 41-50 years of age group followed by 15.0% in above 60 years of age group. So, in the present study, the maximum number of malignancies were noted in 41-60 years of age group. Hence, the present study correlates well with the study by OA Oguntayo et al¹² and Vincent Vinh-Hung et al.¹³

Grading of Squamous Cell Carcinoma

Squamous cell carcinoma were graded in this study according to Broder's classification into well-differentiated squamous cell carcinoma (30.0%), moderately-differentiated squamous cell carcinoma (55.0%) and poorly-differentiated squamous cell carcinoma (15.0%). Thus, it is observed that majority of the squamous cell carcinoma were of the moderately-differentiated type. This finding also parallels similar finding in various studies conducted by Preeti et al¹¹ and Małgorzata Klimek et al.¹⁴

It is also seen that in the study that large cell non-keratinising carcinoma obtained a higher figure, 25 cases (62.5%), followed by large cell keratinising type, 13 cases (32.5%) and the least common was small cell non-keratinising type, only 2 cases (5.0%), that correlates with the study conducted by Misra et al.¹⁵

In the current study, 3 cases of adenocarcinoma were encountered (6.6%). This is almost comparable with the figure obtained by Olu-Eddo AN et al.¹⁶ The age group of adenocarcinoma in this study was 41-50 years that is lower than that of squamous cell carcinoma that correlates with the study done by Vincent Vinh-Hung et al.¹³

In the current study, 2 cases of adenosquamous carcinoma were found in the age group of 41-50 years, i.e. an incidence of 4.4%. The incidence correlates with the study of Gupta N et al.⁴

The clinical presentation of carcinoma of cervix presented with two or more symptoms or signs. Squamous cell carcinoma most commonly presented with growth, pervaginal discharge, bleeding in the form of postcoital bleeding, postmenopausal bleeding and metrorrhagia and also urinary symptoms. This finding correlates with the study by OA Oguntayo et al¹² and Girish D. et al.⁹

The cases of adenocarcinoma presented with growth, pervaginal discharge and pervaginal bleeding that correlate with the study by Zhu L et al.¹⁷

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 and clinically suspicious of malignancy. All 35 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 clinicopathological correlation in this category is very good.

Out of 14 clinically-suspected cases, 9 cases were found positive 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 41 to 50 years age group, the later decades tending to present as clinically evident malignancy. So, any unhealthy cervix, clinically suspicious of malignancy should be followed by a biopsy even in the young age group.

One case which was 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 uterovaginal prolapse. So, those hysterectomy should be examined thoroughly histopathologically, even if there is no clinical suspicion.

CONCLUSION

Neoplastic lesions of the uterine cervix is one of the most common neoplastic lesions especially in the peri and postmenopausal age group, i.e. above 40years of age. Any cervical specimen whether clinically suspected or not of any malignancy should be thoroughly examined by doing histopathological examination as it is an effective method of giving a confirmed diagnosis, which helps in giving the most appropriate treatment and also helps in understanding the prognosis.

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