

**CLINICOPATHOLOGICAL STUDY OF CARCINOMA CERVIX IN A TERTIARY CARE CENTRE**

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**ABSTRACT****BACKGROUND**

Cancer cervix is the second most commonly-diagnosed cancer among women worldwide.

The aim of the study is to evaluate the histopathological diagnosis of cancer cervix and to determine the incidence of the various types of cancerous lesions.

**MATERIALS AND METHODS**

It was a prospective study in the Department of Pathology, Andhra Medical College/King George Hospital over a period of one year. 152 women with carcinoma cervix were included in the study.

**RESULTS**

152 cases of carcinoma of cervix were in the age group of 28-76 years. The mean age of the patients with carcinoma cervix is 52.97. Histologically, Large Cell Non-Keratinising Squamous Cell Carcinoma (LCNKSCC) constituted the majority of carcinoma cervix cases, i.e. 134 cases (88.15%). 3 (1.97%) cases of adenocarcinoma of cervix were diagnosed in the present study. Majority of cases of carcinoma cervix were in stage III, i.e. 64 cases (64%), followed by stage II in 24 cases (24%) and stage IB in 8 cases (8%).

**CONCLUSION**

Large Cell Non-Keratinising Squamous Cell Carcinoma (LCNKSCC) is the most common histological type of carcinoma cervix. A relatively large proportion of patients presented in stages IIIA and IIIB. There is a need to reinforce the early detection of carcinoma cervix and its precursor lesions, especially in developing countries.

**KEYWORDS**

Carcinoma Cervix, Histopathology, Stage.

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**BACKGROUND**

Carcinoma of uterine cervix is the second most commonly diagnosed cancer among women worldwide and majority of cases occur in developing countries where cervix cancer accounts for 15% of female cancers.<sup>1</sup> Carcinoma of cervix is the only cancer where well-developed screening programs had led to decrease in cervix cancer incidence and mortality rates during last 40 years.<sup>1,2</sup>

Despite advances in the detection and management, cervical cancer continues to be a significant health problem on a worldwide scale.<sup>3</sup> The majority of these tumours are Squamous Cell Carcinomas (SCC), whereas adenocarcinomas are relatively rare.<sup>4,5</sup>

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Numerous epidemiologic and molecular studies have demonstrated that high risk types of Human Papilloma Virus (HPV) are the agents of the majority cases of invasive SCC and endocervical carcinomas and their precursor lesions.<sup>6,7</sup> This study was conducted to evaluate the histopathological diagnosis of cancer cervix and to study the age-related incidence and the incidence of various cancerous lesions of the cervix.

**MATERIALS AND METHODS**

The present study is a prospective study conducted in the Department of Pathology, Andhra Medical College/King George Hospital for a period of one year from July 2016 to June 2017. A total of 152 newly-diagnosed cancer cervix cases were included in the study.

The biopsy specimens received from the Department of Obstetrics and Gynaecology were fixed in 10% formalin and processed in automated tissue processor. Four to six micron thick paraffin-embedded sections were taken and stained by haematoxylin and eosin. The slides were examined under microscope by the pathologist and the various histopathological patterns were studied and classified.

**RESULTS**

Out of 4700 gynaecological specimens received in the Department of Pathology, Andhra Medical College/King George Hospital cancer cervix constituted 152 (3.23%) cases.

A total of 152 cases of carcinoma of cervix have been included in the present study. They were in the age group of 28-76 years. Out of 152 cases, 50 (32.9%) cases were in the age group of 51-60 years followed by 46 (30.26%) cases in the age group of 41-50 years. The next frequent was in the age group 61-70 years with 27 (17.76%) cases. The mean age of the patients with carcinoma cervix is 52.97 (Table 1).

Histologically, Large Cell Non-Keratinising Squamous Cell Carcinoma (LCNKSCC) (Figure 1) constituted the majority of carcinoma cervix cases, i.e. 134 cases (88.15%). Large Cell Keratinising Squamous Cell Carcinoma (LCKSCC) (Figure 2 and 3) constituted 15 (9.86%) of cases. Only 3 (1.97%) cases of adenocarcinoma of cervix were diagnosed in the present study (Table 2). 84 cases (62.68%) of LCNKSCC were in between 41-60 years of age group, whereas cases LCKSCC were almost equally distributed in 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> decades, i.e. 4, 4 and 5 cases, respectively. Two cases of LCKSCC were seen in-between 61-70 years of age group. All the three cases of adenocarcinoma cervix were in the age group of 41-60 years (Table 3).

Out of 152 cases, data regarding stage of the carcinoma cervix were obtained in 100 cases. Majority of cases of

carcinoma cervix were in stage III, i.e. 64 cases (64%), followed by stage II in 24 cases (24%) and stage IB in 8 cases (8%) (Table 4). 60 (65.21%) cases of LCNKSCC were in stage III, whereas all 5 cases of LCKSCC where data regarding stage was obtained were seen in stage IIIA and all the 3 cases of adenocarcinoma cervix were in stage III (Table 5).

Age (Years)	Number of Cases	Percentage
21-30	3	1.97
31-40	23	15.13
41-50	46	30.26
51-60	50	32.9
61-70	27	17.76
71-80	3	1.97
<b>Total</b>	<b>152</b>	

**Table 1. Age-Related Frequency in the Present Study (Mean Age-52.97)**

Histological Type	Number of Cases	Percentage
Large cell keratinising squamous cell carcinoma	15	9.86
Large cell non-keratinising squamous cell carcinoma	134	88.15
Adenocarcinoma	3	1.97
<b>Total</b>	<b>152</b>	

**Table 2. Distribution of Histological Types of Carcinoma Cervix in the Present Study**

Age (Years)	Large Cell Keratinising Squamous Cell Carcinoma	Large Cell Non-Keratinising Squamous Cell Carcinoma	Adenocarcinoma
21-30	-	3	-
31-40	4	19	-
41-50	4	41	1
51-60	5	43	2
61-70	2	25	-
71-80	-	3	-
<b>Total</b>	<b>15</b>	<b>134</b>	<b>3</b>

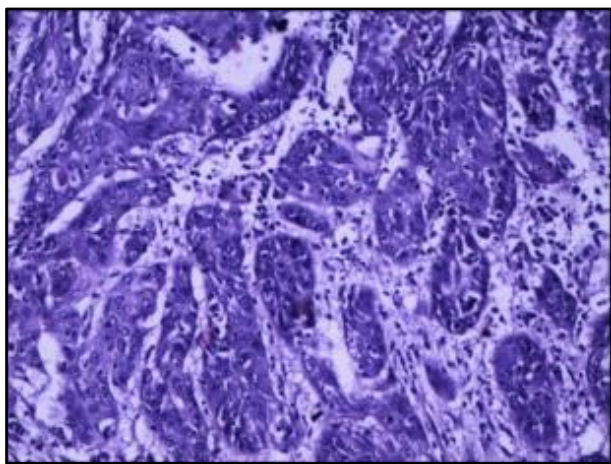
**Table 3. Age-Related Frequency in Relation to the Histological Types of Carcinoma Cervix in The Present Study**

Stage	Number of Cases	Percentage
IA	0	-
IB	8	8
IIA	20	20
IIB	4	4
IIIA	32	32
IIIB	36	36
<b>Total</b>	<b>100</b>	<b>100</b>

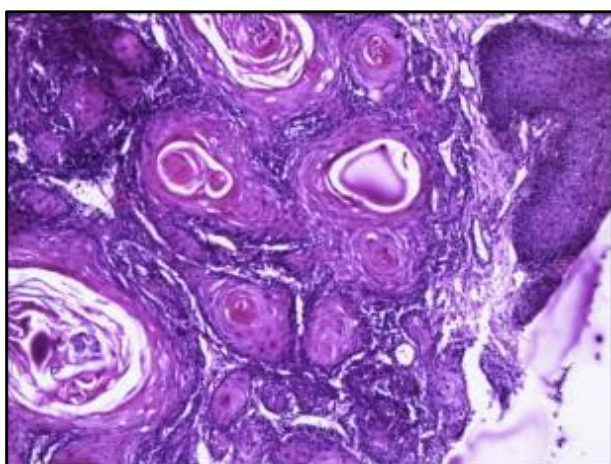
**Table 4. Distribution of Tumour Stage in Carcinoma Cervix Cases in the Present Study**

Stage	Large Cell Keratinising Squamous Cell Carcinoma	Large Cell Non-Keratinising Squamous Cell Carcinoma	Adenocarcinoma
IA	0	0	0
IB	0	8	0
IIA	0	20	0
IIB	0	4	0
IIIA	5	28	1
IIIB	0	32	2
<b>Total</b>	<b>5</b>	<b>92</b>	<b>3</b>

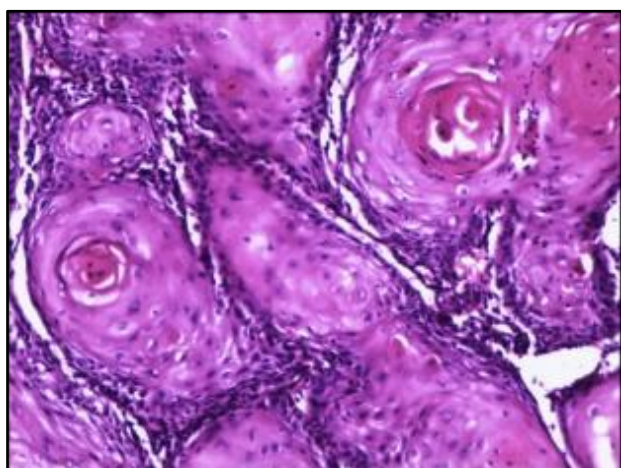
**Table 5. Distribution of Tumour Stage in Relation with Histological Types of Carcinoma Cervix**



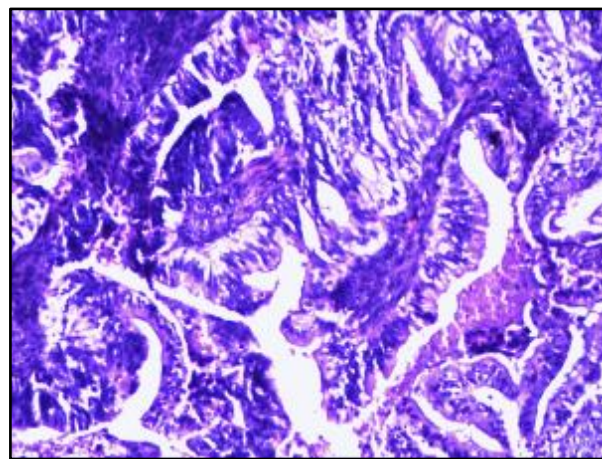
**Figure 1. Photomicrograph of Large Cell Non-Keratinising Squamous Cell Carcinoma of Cervix. H and E, 100X**



**Figure 2. Photomicrograph of Large Cell Keratinising Squamous Cell Carcinoma of Cervix. H and E, 40X**



**Figure 3. Photomicrograph of Large Cell Keratinising Squamous Cell Carcinoma of Cervix. H and E, 100X**



**Figure 4. Photomicrograph of Adenocarcinoma of Cervix. H and E, 100X**

## DISCUSSION

In India, cervical cancer contributes to approximately 6-29% of all cancers in women.<sup>8</sup> Regardless of the advances in detection and management in developed countries, cervical cancer continues to be a significant health problem worldwide. Evidence exists supporting the association of early marriage, multiparity and low economic level with a high incidence of cervical carcinoma.<sup>9</sup> In recent years, the crucial role of HPV in the pathogenesis of virtually all cervical squamous cell carcinomas has become obvious. As a matter of fact and as already mentioned, cervical cancer is unique among human cancers by being the first found to be directly attributable to the effects of an infectious agent.<sup>10</sup>

In the present study, 50 (32.9%) cases were in the age group of 51-60 years followed by 46 (30.26%) cases in the age group of 41-50 years, while study by Rajendiran S et al showed maximum number of cases in 40-49 years (53.4%) age group.<sup>11</sup>

Bodal VK et al found maximum number of patients were in the fourth decade of life followed by fifth decade.<sup>12</sup> Rathoda GB et al found most patients were in the age group of 41-50 years (42.4%) followed by age group 51-60 years.<sup>13</sup>

In the present study, the mean age of the patients with carcinoma cervix is 52.97, whereas in a study by Kaveri S B et al, the mean age of invasive cervical cancer was 49.4 years, while Jamal A et al found mean age of 52.2 years, Bal MS et al found mean age of 57 years, while Bhojani K et al found mean age of 60 years.<sup>14,15,16,17</sup>

In our study, out of 152 cases of carcinoma cervix, 149 (98.03%) were squamous cell carcinoma, which was higher than the studies by Rajendiran S et al (85%), Bodal V K et al (85.18%) and Ikram et al (83.33%).<sup>11,12,18</sup> In our study, the incidence of adenocarcinoma was 1.97%, whereas Rajendiran S et al and Bodal VK et al reported the incidence of adenocarcinoma as 0.4% and 2%, respectively.<sup>11,12</sup>

Reagan et al subdivided squamous cancer of the cervix into- (a) Large cell keratinising carcinoma; (b) Large cell non-keratinising carcinoma; and (c) Small cell non-keratinising carcinoma. The distinction between large-cell keratinising and non-keratinising squamous cell carcinoma is based primarily on the presence of intercellular bridges and

keratin pearls in the former, although focal individual cell keratinisation maybe present in the latter.<sup>19</sup> As regards, the various histopathological varieties of SCC, the present study found an incidence of 88.15% for large cell non-keratinising SCC and 9.86% for large cell keratinising SCC. Adenocarcinomas accounted for 1.97% of cases in the present study. Thus, the findings of the present study are consistent with that of Missaoui et al in that moderately-differentiated large cell non-keratinising variety is the commonest variety.<sup>3</sup>

In a review of five large series by Reagan and Fu, the average 5-year survival for patients with stage I tumours treated by radiation therapy was 54%, 84% and 42% for keratinising, non-keratinising and small cell carcinomas, respectively.<sup>19</sup> In many less developed countries, most cervical cancers are diagnosed in the third or fourth stage.<sup>3</sup> In the present study, majority of cases of carcinoma cervix were in stage III, i.e. 64 cases (64%) followed by stage II in 24 cases (24%). In developed countries, studies show the evidence that the advanced stages of cervix cancer are decreasing, which is attributable to well-planned comprehensive screening programmes known to reduce mortality by early detection and treatment.<sup>20</sup>

## CONCLUSION

In the present study, squamous cell carcinomas were the major histological type among cervix cancer of which large cell non-keratinising squamous cell carcinomas were predominant. Majority of the cases presented in late stages IIIA and IIIB. The present study highlights the need to reinforce the early detection of carcinoma cervix and its precursor lesions especially in developing countries.

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