RESEARCH ARTICLE

Clinicopathological Correlation of Cervical Carcinoma: A Tertiary Hospital Based Study

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Abstract

Background: To study the clinical presentation of cervical carcinoma correlating with histopathological findings in a tertiary hospital situated in the southern part of India catering to rural and semi-urban populations Materials and Methods: 199 cases histopathologically diagnosed as cervical cancer over a period of one year were considered for the study. Clinical details of the patients were noted with the help of semi-structured proforma. The data was analysed by descriptive analysis using SPSS software. Results: Out of 199 patients, 109 had moderately differentiated squamous cell carcinoma, 51 poorly differentiated and 35 well differentiated. Adenocarcinomas numbered only four. 121 cases were in the age group of 40-59 years, 59 in 60-80 years and 19 in 20-39 years. All four cases of adenocarcinoma were seen between 40-59 years. 95 (47.7%) cases were in women who had 4 or more children, 120 presented with white discharge, 89 with bleeding per vagina and 68 had constitutional symptoms. Most of the patients with adenocarcinoma presented with bleeding per vagina. 151 was in stage IIIB, 29 in stage IIB, 14 in stage IVA and 5 in stage IB. Conclusions: Screening of cervical cancer should be emphasised in women with white discharge especially in rural areas for early detection of dysplastic cells and reduce mortality and morbidity in productive age. In addition health education has to be given to women regarding the awareness of hygiene, risk factors and symptoms of cervical cancer.

Keywords: Carcinoma cervix - clinicopathological correlation - Karnataka - India

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Introduction

Cervical cancer is the third most common cancer in women worldwide accounting for 9% of all female cancer and 9% death in females due to cervical cancer. Worldwide it is seventh cancer with estimated 530,000 new cases in 2008 accounting for 4% of cancer worldwide. The world age adjusted rate is 15.2/100,000 population. More than 85% of the global burden is seen in developing countries and it accounts for 13% of all female cancers. In India, 134,000 were detected to have cervical cancer, out of which 72,825 women died of cervical cancer in 2008. The Indian age standardised rate is 27/100,000 population. (Globocan, 2008: www.medindia.net). According to Surendra Shastri, 182,027 new cases and 77,096 deaths occurred in India in 2010 (Shastri, 2010). Cervical cancer occurs early and strikes at the productive period of a woman's life. The cancer mostly affects middle-aged women between 40 and 55 years, especially those from the lower economic status who fail to carry out regular health check-up due to financial constraints (Kaarthigeyan, 2012). Hygiene and lifestyle are two key reasons in rural women for being more vulnerable to this cancer (Dikshit et al., 2012). Epidemiological study shows that cervical cancer behaves like a sexually transmitted disease and roughly 50% of cervical cancer worldwide is associated with the oncogene HPV 16 (Gagnon, 1950; Burk, 2003). The other important high risk HPV types are 18, 45 and 31. Cervical cancer usually develops very slowly. It starts as a precancerous condition called dysplasia / intraepithelial neoplasia. This precancerous lesion can be detected by Pap smear and is 100% treatable. It takes years for precancerous lesion to transform into cervical cancer. Cervical cancer can be cured when detected early. With improved technology it is usually detected at a very early stage (Rajesh Dikshit et al., 2012). Most women who are diagnosed with cervical cancer today have not had regular Pap smear screening or they have not followed up on abnormal Pap smear results (Gundrajakuppam et al., 2011). Most of the time, early cervical cancer has no symptoms (The New York Times, 2012).

We have undertaken this study to know the clinical presentation of cervical carcinoma correlating with histopathological findings in a tertiary hospital situated in southern part of India which caters mainly the rural and semi-urban population.

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Materials and Methods

The cases were collected from a tertiary hospital for a period of one year. Prior to the study ethical clearance was obtained from the institutional ethical board. A total number of 199 cases histopathologically diagnosed as cervical cancer were considered for the study. Details of the patients were taken with the help of semi-structured proforma that included sociodemographic details, history of present illness, menstrual history, systemic examination and local per speculum findings. The data was analysed by descriptive analysis using SPSS software.

Results

The cases were analysed for histopathological type, age, parity, presenting symptoms, clinical diagnosis and staging. Out of 199 patients majority were moderately differentiated squamous cell carcinoma (109 cases) followed by poorly differentiated (51 cases) and well differentiated carcinoma (35 cases). Adenocarcinoma carcinomas were only four cases (Figure 1). Highest cases were noted in the age group of 40-59 years (121 cases) followed by 60-80 years (59 cases) and 20-39 years (19 cases), All four cases of adenocarcinoma were seen between 40-59 years (Table 1). Maximum number of cases was noted in women who had 4 and above children. Hence it was obvious that multiparty (more than three) is a significant risk factor for carcinoma cervix (Table 2). White discharge was the most common complaint noted in more than 50% of women (120 out of 199). Eight nine patients out of 199 presented with bleeding per vagina and 68 out of 199 had constitutional symptoms of malignancy as loss of weight and loss of appetite. Most of the patients with adenocarcinoma presented with bleeding per vagina

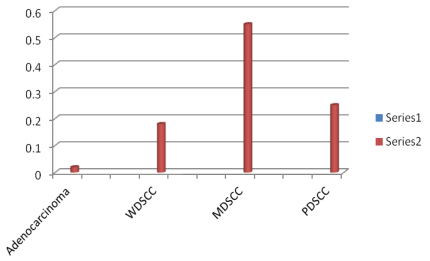

Figure 1. Bar Diagram Showing Distribution of Histological Types of Carcinoma Cervix. WDSCC: Well differentiated squamous cell carcinoma; MDSCC: Moderately differentiated squamous cell carcinoma; PDSCC: Poorly differentiated squamous cell carcinoma

Table 1. Shows Age Distribution in Various Histological Types of Cervical Cancer

Histopathological type	Age group in years 20-39	40-59	60-80	Total cases
Adenocarcinoma	0	4 (100%)	0	4 (100%)
WDSCC	2 (5.71%)	26 (74.29%)	7 (20%)	35 (100%)
MDSCC	13 (11.93%)	64 (58.72%)	32 (29.36%)	109 (100%)
PDSCC	4 (7.84%)	27 (52.94%)	20 (39.22%)	51 (100%)
Total	19 (9.55%)	121 (60.8%)	59 (29.65%)	199 (100%)

*WDSCC: Well differentiated squamous cell carcinoma; MDSCC: Moderately differentiated squamous cell carcinoma; PDSCC: Poorly differentiated squamous cell carcinoma

Table 2. Shows Distribution of Parity in Cervical Carcinoma

Histopathological type	Parity 1-3	4-6	7-9	10-12	Total (100%)
Adenocarcinoma	3 (75%)	1 (25%)	0	0	4
WDSCC	19 (54.29%)	13 (37.14%)	2 (5.71%)	1 (2.86%)	35
MDSCC	38 (34.86%)	58 (53.21%)	9 (8.26%)	4 (3.67%)	109
PDSCC	24 (47.06%)	23 (45%)	4 (7.84%)	0	51
Total	84 (42.21%)	95 (47.74%)	15 (7.54%)	5 (2.5%)	199

*WDSCC: Well differentiated squamous cell carcinoma; MDSCC: Moderately differentiated squamous cell carcinoma; PDSCC: Poorly differentiated squamous cell carcinoma

Table 3. Shows Clinical Signs in Various Histopathological Types of Cervical Carcinoma

Clinical signs	Histopathological types of cervical carcinoma Adenocarcinoma	WDSCC	MDSCC	PDSCC	Total cases (100%)
WDPV	0	18 (15%)	72 (60%)	30 (25%)	120
BPV	3 (3.37%)	15 (16.85%)	55 (61.8%)	16 (17.98%)	89
PMB	0	4 (10.81%)	18 (48.65%)	15 (40.54%)	37
MPV	0	2 (22.2%)	3 (33.3%)	4 (44.4%)	9
PCB	0	9 28.13%)	14 (43.75%)	9 (28.13%)	32
IM	0	2 (40%)	2 (40%)	1 (20%)	5
CS	3 (4.41%)	15 (22.06%)	38 (55.88%)	12 (17.65%)	68
Others	3 (7.89%)	7 (18.42%)	19 (50%)	9 (23.68%)	38

*WDSCC: Well differentiated squamous cell carcinoma; MDSCC: Moderately differentiated squamous cell carcinoma; PDSCC: Poorly differentiated squamous cell carcinoma; WDPV: White discharge per vagina; BPV: Bleeding per vagina; PMB: Postmenopausal bleeding; MPV: Mass per vagina; PCB: Postcoital bleeding; IM: Irregular menstruation; CS: Constitutional symptoms

Table 4. Shows Distribution of Cervical Carcinoma in Various Clinical Stages at Diagnosis

Histopathological type	Stages of cervical cancer IB	IIB	IIIB	IVA	Total (100%)
Adenocarcinoma	0	0	4 (100%)	0	4
WDSCC	3 (8.57%)	5 (14.29%)	27 (77.14%)	0	35
MDSCC	2 (1.83%)	20 (18.35%)	87 (79.82%)	0	109
PDSCC	0	4 (7.84%)	33 (64.71%)	14 (27.45%)	51
Total	5 (2.51%)	29 (14.57%)	151 (75.88%)	14 (7.04%)	199

*WDSCC: Well differentiated squamous cell carcinoma; MDSCC: Moderately differentiated squamous cell carcinoma; PDSCC: Poorly differentiated squamous cell carcinoma

(Table 3). All most all cases which were clinically suspected to be malignant were diagnosed as carcinoma by histopathology. The staging of all the cases were considered which was done according to American Joint Committee on Cancer (2006). Out of 199 patients 151 was in stage IIIB (tumour extends to pelvic wall and/or causes hydronephrosis or non-functional kidney), 29 in stage IIB (tumour with parametrial invasion), 14 in stage IVA (tumour invades mucosa of bladder or rectum and/or extends beyond true pelvis) and 5 in stage IB (clinically visible lesion confined to cervix or microscopic lesion with stromal invasion of 3.0 to 5.0mm depth with 7.0mm wigth) (Greene et al., 2006) (Table 4).

Discussion

Cervical cancer is one of the major contributors to cancer related morbidity and mortality in females worldwide. In India, cervical cancer is the most common woman-related cancer, followed by breast cancer. There is

a wide variation in the incidence of cervical cancer across the globe. In the west, early detection through regular screening has significantly controlled the prevalence of this disease, thereby, lowered its incidence. At one time, cervical cancer was one of the most dreaded cancers and the leading cause of death in women in US but now it is the eighth common cancer. 80% of the new cervical cancer cases occur in developing countries, like India, which reports approximately one fourth of the World's cases of cervical cancer each year (www.medindia.net). There is a great diversity between urban and rural India when it comes to cervical cancer. Incidence of cervical cancer in urban India is decreasing because of more awareness in urban educated women (www.medindia.net; Dikshit et al., 2012). The incidence of cervical cancer is 17.5% in this part of South India where this study was conducted (Kalyani et al., 2010). In urban, cervical cancer account for about 40% of cancers in women while in rural areas it accounts for 65% of cancers. Woman's sexual habits can increase risk for cervical cancer as having sex at an early age, having multiple sexual partners or partners who participate in high-risk sexual activities.

Majority of cervical cancers are squamous cell carcinomas. These lesions arise from the squamocolumnar junction and may be keratinizing or non-keratinizing type (well differentiated to poorly differentiated carcinoma). Studies have shown that 85-90% of cases of cervical carcinoma are squamous cell carcinoma and rest of them constitutes adenocarcinoma (Das et al., 2000; Misra et al., 2009; Kalyani et al., 2010). Adenocarcinoma of the uterine cervix arises from the endocervical columnar cells and account for about 14% of cervical carcinomas (Dikshit et al., 2012). In the present study 97.9% cases were squamous cell carcinoma of which majority (54.7%) were moderately differentiated squamous cell carcinomas. Adenocarcinoma constituted only 2% of cases (Figure 1).

According to our study (Table 1), maximum number of cases was found in the age group of 40-59 years. Many studies have observed maximum cases in older women beyond 40 years of age (Misra et al., 2009; Kalyani et al., 2010). The most common age group involved in carcinoma cervix ranged from 35-50 years (Aswathy et al., 2012). One study reported that the incidence rises in 30-34 years of age and peaks at 55-65 years, with a median age of 38 years (Kaarthigeyan, 2012).

According to our study multiparity (>4 children) showed increased risk of malignancy when compared to less number of children. Studies show that women having four and above children has increased risk of malignancy (Gundrajakuppam et al., 2011). One study showed that women with 3 or more births showed 1.51 increased odds ratio to carcinoma cervix (Satija, 2012). Both adenocarcinoma and squamous cell carcinoma has relation to parity of three or more (Berrington de Gonza´lez et al., 2004).

Most of the time, early cervical cancer has no symptoms. Vaginal bleeding, contact bleeding or rarely vaginal mass may be the presenting feature. Also, moderate pain during sexual intercourse and vaginal discharge are symptoms of cervical cancer. In advanced disease, metastases may be present in the abdomen, lungs or elsewhere. Symptoms of advanced cervical cancer may include loss of appetite, weight loss, fatigue, pelvic pain, back pain, leg pain, swollen legs, heavy bleeding from the vagina, bone fractures and/or rarely leakage of urine or faeces from the vagina (The New York Times, 2012). The first symptom the patient complains is thin, watery, blood tinged vaginal discharge (Monk et al., 2007). White discharge was the most common complaint in more than 50% of patients with malignancy in one study (Gundrajakuppam et al., 2011). In our study most of the patients presented with white discharge per vagina followed by bleeding per vagina. Bleeding per vagina was common presentation in adenocarcinoma (Table 3).

In the present study, most of the cases which were clinically diagnosed as cervical cancer were confirmed by histopathological examination. This study was conducted in a rural set up where most of the women were illiterate and had very less knowledge about the health, hygiene, high risk sexual behaviour, cervical cancer screening and its early detection. In addition women health in rural areas is neglected and majority of women feel shy to approach medical consultants especially for symptoms related with genital organs. Because of these reasons, women approaching to the clinician/obstetrician at early stage were very less and majority of them approached at a very late stage with frank malignancy, many times with metastasis. In the present study majority of patients (75.88%) presented in stage IIIB.

In conclusion, this study suggests that the health measures regarding cervical cancer screening have to be started as early as 25-30 years as majority of women in Indian setup marry between 18-25 years. Screening of cervical cancer should be emphasised especially in women with white discharge for early detection of dysplastic cells. Cervical cancer screening which is a national health programme should be reinforced especially in Indian rural areas and reduce mortality and morbidity in women in productive age due to cervical cancer. In addition to the screening, health education has to be given to women regarding the awareness of hygiene, risk factors of cervical cancer, cervical cancer screening, early detection and approach to medical consultant as early as possible with genital symptoms especially white discharge which is the commonest symptom.

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