

Radiotherapy for Early Cancer Cervix

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Summary

Carcinoma of the uterine cervix is the commonest cancer of an individual organ in females in India. In India, majority of the patients are in the advanced stage at the initial presentation and only a small number of them attend in early stages. Radiotherapy and surgery are the only curative modalities available for the treatment of cancer of the uterine cervix. Cancer of the cervix being highly amenable to cure by radiation therapy it is the treatment of choice in all stages of the disease.

This study has made an attempt with curative intention to treat early stages of carcinoma of the cervix by employing both teletherapy and intracavitary brachytherapy.

Introduction

Among developing countries carcinoma of cervix is the most common cancer among women and so in India. The world wide incidence of invasive cervical cancer is estimated as over 465,000 new cases per year (Munoz & Bosch, 1989).

Due to illiteracy and ignorance the majority of patients that attend hospital are of advanced stage a very small percentage of cases are in early stage. The curative modalities of treatment are radiotherapy and surgery.

This study is based on treatment of early stages of carcinoma cervix by employing both teletherapy and brachytherapy. Teletherapy was given by Theratron 780C using cobalt-60 as source and brachy therapy by low dose rate Postgraduate Institute Chandigarh after loader using cesium 137 as source.

Material and Method

The present study has been carried out at the department of Radiotherapy, Sardar Patel Medical College Bikaner. Seventy one patients with stage I and II (FIGO staging system) have been studied. Only those patients who have completed minimum 2 years follow up have been included. Before starting the treatment following criteria were fulfilled. Thorough physical examination, pelvic examination, haemoglobin > 8gm%, total leucocyte count > 4000/cumm, blood urea nitrogen < 35mg/100ml, creatinine < 1.5 mg/100ml, X-ray of the chest and ultrasonography abdomen was done to evaluate the status of lungs, kidney, liver, para aortic lymph-nodes.

Teletherapy field consisted of anteroposterior and posteroanterior portal of 15cm X 15cm encompassing whole of true pelvis and was modified according to the built of the patient. Dose of 56 Gray in

28 fraction delivered in five weeks. After completion of external radiotherapy a rest was given for 15 days to let the tumor shrink in size and for recovery of the normal tissue then intracavity brachytherapy was applied.

Under intravenous sedation cervical canal was dilated and cervical tandem was inserted inside the cervical canal and ovoids were put in the vaginal cavity in right and left fornix. A self retaining Foley's catheter was inserted. Check skiagram were taken after that patient was shifted to isolated room and cesium 137 was loaded for desired duration of time. The dose rate was 100 rads/hour.

Results and Observation

Age wise distribution was almost uniform from 30 years to 60 years as shown in Table I.

Table I
Age wise distribution

Age Group	Number of Patients
20-29	02
30-39	22
40-49	16
50-59	23
60-69	07
70-70	01

Among the patients studied 69 were squamous cell carcinoma, 1 was adenocarcinoma, 1 was adenosquamous carcinoma (Table II).

Table II
Stage wise distribution

Stage	Number of patients
Ib	39
IIa	13
IIb	19

Thirty nine patients were of stage Ib, 13 of stage IIa and 19 of stage IIb (Table III).

Table III
Histopathology

Histopathology	Number of Patients
Squamous cell carcinoma	69
Grade I	14
Grade II	40
Grade III	15
Adenosquamous carcinoma	01
Adenocarcinoma	01

The most common symptoms were abnormal vaginal bleeding, post coital bleeding and discharge per vaginam. The duration of symptoms ranged from 3-10 months (Table IV).

Table IV
Symptomatology

Symptomatology	Duration of Months		
	0-3	3-6	6-12
Post coital bleeding	2	7	9
Abnormal bleeding	22	28	8
Abnormal Discharge	25	26	11

Table V shows overall follow up results; 11 cases developed local recurrence and 4 distant metastasis. The remaining 45 patients have been found with no evidence of local recurrence or distal metastasis in a follow up of 2 years.

Table V
Overall Results

	Number of Patients
Recurrence	11
Metastasis	04
Loss in follow up	11
No evidence of local disease	45

The radiation induced proctitis was the most common complication observed in 6 patients followed by cystitis, and 1 patient developed vaginal fibrosis (Table VI).

Table VI
Radiation induced complication

	Number of Patients
Proctitis	6
Cystitis	3
Vaginal fibrosis	1

Discussion

The greatest advantage of radiation therapy lies in very low morbidity, absence of mortality and preservation of anatomy. It can be used to treat all stages of cervical cancer with cure rates of approximately 70% for stage I, 60% for stage II, 45% for stage III and 18% for stage IV (Petterson, 1994).

The control of bulky pelvic tumor requires minimum doses of 75 to 85 Gray (Kim et al, 1989) not achievable by external radiotherapy without exceeding rectal and bladder tolerance of 60 to 70 Gray (Crook et al 1987). The rapid fall off dose from the applicator is both the major advantage and danger of brachy therapy.

Combined treatment with external and intracavitary brachytherapy is much more successful than external irradiation alone with much less complications. Intracavitary brachytherapy is an essential part of treatment of cancer cervix especially for patients having localized disease who can withstand insertion of radio active source. Cesium 137 is used as a popular source for intracavitary brachy therapy because of long half life of 30 years, low cost and easy radiation protection specially for the low dose rate applicators.

Iridium 192 is used for interstitial and high dose rate and cobalt 60 for high dose rate after loading machines.

Montana et al (1991) reported that addition of intracavity irradiation to external beam irradiation improves survival advantage over single application (73% versus 60%).

It may be concluded from the present study that combination of teletherapy and brachy therapy offers high tumor control in the pelvis in early carcinoma of cervix with marked reduction in morbidity.

References

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