IMPORTANCE OF BRACHYTHERAPY IN STAGE III CARCINOMA CERVIX

By

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SUMMARY

In this retrospective study 150 patients of Stage III Carcinoma Cervix, who completed the full course of radiotherapy in 1979 were undertaken for study. Their clinical, etiological and pathological studies were undertaken. All were treated initially with external radiation. Later if they were found suitable for intracavitary radiation treatment, it was used. If found unsuitable then supplementary external radiation was given.

A 5 year follow up reveals a disease free survival rate of approximately 30% where intracavitary treatment was possible and 11%, where supplementary external radiation was used.

This emphasizes the importance of brachytherapy procedure in the treatment of Carcinoma Cervix even in advanced stages.

Introduction

Cancer of cervix is a form of cancer of great relevance to the radiation oncologist. Very early in the history of radiation therapy an impact on curability was achieved by application of radiation to this tumour and this guided the success in other fields too. Incidence wise in Gujarat Cancer and Research Institute, Ahmedabad, 20% of all malignancies were carcinoma cervix in 1979. 70% of carcinoma cervix patients presented with stage III disease. Since it forms the major portion of all the cases in every department and the fact that most of the predisposing factors for this disease are prevailing in our country, to optimisation of therapy for this disease is essential.

Surgery which was primary line of treatment in all stages earlier has been practically replaced by radiation therapy. In stage I and II excellant results have been obtained with radiotherapy, but in stage III results are persistently poor despite a lot of efforts. In stage III both primary and regional lymphnode disease has to be controlled and therefore the role of external radiation and intracavitary radiation is important.

This study was undertaken to evaluate the role of radiation therapy in stage III carcinoma cervix and to define the usefulness of intracavitary radiation treatment over external radiotherapy.

Material and Methods

One hundred and fifty patients of biopsy proved carcinoma cervix stage III FIGO classification, who completed the full course of radiotherapy in 1979, were included in the present study. After detailed clinical history and examination,

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the patients were subjected to haemogram, liver and kidney function tests, x-ray chest, intravenous pyelogram and cystoscopy. Patients with poor general condition and other medical problems, patients above 75 years of age and those who did not complete the full course of radiotherapy were excluded from the study.

Table I shows the treatment protocol used. All patients were treated with external radiation initially by telecobalt. A dose of 4500 to 5000 rads in 4 to 5 weeks was delivered to the whole pelvis with field size 15-17 X 15-16. After 2 weeks of rest patient was re-examined. If she was found suitable for intracavitary application, a dose of 3000 to 3500 rads was delivered to point 'A' through modified Heinschie's manual after loading applicator. If found unsuitable then external radiation was delivered to pelvis 2000 to 2500 rads in 2 weeks with reduced field.

TABLE I
Treatment Protocol

I GROUP (70 Cases)
External radiotherapy + Intracavitary treatment Ex. R.T. 4500 to 5000 rads in 4 to 5 weeks 15 day gap
+
Intracavitary treatment, 3000 rads to 3500 rads to Point 'A
II GROUP (80 Cases)
External radiotherapy alone, 4500-5000 rads in 4 to 5 weeks to whole pelvis
+
2000-2500 rads with reduced field in 2 to 3 weeks

Patients were examined weekly while on treatment; monthly for 6 months and 3 monthly thereafter. Follow up of five years is recorded.

Observations

Majority of the patients (80%) were of low socio-economic group and of lower Hindu caste with history of early marriage and multiparity. All patients presented for vaginal of discharge and bleeding and backache of 10 to 18 months duration. As shown in Table II most of the patients were in age group of 31 to 60 years and more commonly in 4th decade of life (43%). However we also had a very young and very old patients, youngest being 24 years and oldest 70 years.

TABLE II
Age Distribution

Age (Years)	No. of cases	Percentage
30	6	5
31-40	66	43
41-50	42	28
51-60	24	16
61-70	12	8

The histological break up (Table III) showed that 98% belong to squamous cell carcinoma and most of them moderately differentiated (92%).

TABLE III
Histological Distribution

	Type	No.
1.	Squamous Cell Carcinoma	147
	— Well differentiated	5
	— moderately differentiated	136
	— Poorly differentiated	6
2.	Adeno squamous Carcinoma	3

Radiological investigation (Table IV) showed abnormality in intravenous pyelography in 37 patients (25% of cases).

TABLE IV
Intravenous Pyelogram (I.V.P.)

1.	Normal I.V.P.	113
2.	Abnormal I.V P.	37
	— Deviation of ureter	8
	— Hydronephrosis	15
	— Nonfunctioning kidney	14

TABLE V
5 Years Survival

Treatment modality	No. of cases	Percentage
Group: I (70 Cases) External Radiotherapy + Intracavitary treatment	21	30
Group: II (80 Cases) External radiotherapy only	9	11

TABLE VI
Complications

	Percentage
1. Minor	
— Skin reaction	10
— Urinary complaints	30
— Gastrointestinal Complaints	40
2. Major	
— Rectal reaction (Minor complaints)	10
— Rectal reaction (Requiring Colostomy)	1

There was significant abnormality in cystoscopy findings.

Survival

The 5 years survival results show that the group where it was possible to use intracavitary radiation fared better with the survival rate of 30% as against the other with a survival of 11% only.

Complications

The complication rate was not significantly high and as usual the gastro-intestinal problems dominated. In 10% cases we came across rectal reaction in the form of rectal bleeding and rectal narrowing which was however controlled by conservative measures and only one patient needed a colostomy.

Discussion

It is regrettable that we still have significant problem of invasive cervical cancer where there exists adequate knowledge to facilitate the prevention of this disease. Non-availability of true medical facility in rural areas, ignorance, shyness, illiteracy and poverty are the main causes patients usually present with advanced disease.

Only 40% of all registered cases of carcinoma cervix III completed full course of radiotherapy remaining, 60% did not complete the treatment or turn up for intracavitary treatment due to fear of radiotherapy, old concepts and myths of intracavitary treatment, misguidance of quacks and other socio-economic problems.

External radiation as the primary modality of treatment has been recommended for all stage III cases initially in order to reduce the bulk of disease and deliver adequate dose to pelvic lymph-nodes. This is to be followed by intracavitary radiation if possible after a gap of two weeks.

There has been a controversy about the optimum gap period between external radiation and intracavitary radiation. Bosch and Marcial (1967) have clearly shown that the survival is reduced if the gap exceeds more than two weeks.

Intracavitary treatment is the main stay of treatment and whenever possible it should be adhered to. It is the modality which has made cure possible in cervical cancer. At the present time, with the availability of deeply penetrating mega-voltage X-rays or Y rays, the intracavi-

tary treatment has maintained its place in the radical radiotherapy of cervical cancer. The efficacy of this treatment is based on the high tumour dose that can be delivered to a relatively small volume and the considerable radio resistance of the upper two-third of the vaginal wall and the uterus.

Fletcher (1967, 1971, 1980) reported a five year survival of 45% and 35% in Stage III a and III b disease respectively with radiotherapy alone. Our results as shown earlier are 30% with intracavitary radiation treatment and 11% without intracavitary treatment.

Radiation therapy like surgery is associated with certain risks and complications. During external radiation some patients developed acute symptoms of gastrointestinal and urinary tract which subsided after simple conservative line of treatment. Following brachytherapy patients may develop transitory urinary or rectal symptoms. Late chronic bladder rectal or intestinal symptoms may arise at variable intervals after therapy. We have observed a 10% incidence of major complications which could be controlled conservatively and only in 1% cases surgical intervention was needed.

Conclusions

It is emphasized that in view of the improved results with addition of intracavitary radiation treatment to external radiation (35% versus 11%) its use is mandatory wherever possible for curative radiotherapy. And good palliation can be achieved with intracavitary treatment in locally advanced disease.

References

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