Significance of preoperative diagnosis and staging in carcinoma of cervix

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Abstract

Carcinoma cervix is the most common malignant tumor among women in developing countries. Early diagnosis and treatment provides excellent results. This study aims to evaluate the treatment outcome of postoperative cases of carcinoma cervix and to assess the extent of disease in postoperative patients at first visit. Between Jan. 1998 and Dec.2001, one hundred and three cases of carcinoma cervix from outside institutions were referred to our Medical College for post operative adjuvant radiotherapy (RT). They were placed in four groups, depending on the surgery undertaken i.e. simple hysterectomy (SH) / radical hysterectomy (RH) and place of referral, (own institution / outside facility). All cases were restaged. They were treated with postoperative radiotherapy (RT-External + Brachytherapy). Cases were followed up till Dec. 2005 and analyzed for presence of residual disease / recurrence.

Key words: *Carcinoma cervix, radiotherapy, hysterectomy.*

Introduction

Carcinoma of the cervix is the most common malignancy among women in developing countries. Early diagnosis and relevant treatment gives excellent results, e.g., stage Ib and IIa disease is effectively treated either with radical surgery or radiotherapy. Both procedures differ in associated morbidity and complications[1]. Preoperative evaluation and clinical staging, if not carried out, can result in increased morbidity. It has to be followed by adjuvant radiotherapy / chemotherapy. If adjuvant treatment following surgery is delayed, overall prognosis is poor.

Aim

1. To evaluate treatment outcome in cases of carcinoma cervix reporting to our institution for the first time after having undergone hysterectomy in an outside facility.
2. To assess the absence / presence, and extent of the disease at the first visit.

Material and methods

A total number of 451 cases of cervical carcinoma were treated in the Department of Radiotherapy between Jan. 1998 and Dec. 2001. Of this, 103 patients were referred from outside, the surgery having been carried out in facilities outside our institution. All cases were evaluated for the presence of local disease, distant spread and were also investigated for routine blood and biochemical analysis, X-ray chest, ultra-sonography of abdomen/ pelvis. There is no staging system for postoperative cases of carcinoma cervix, however based on clinical findings, post-operative histopathology report and investigations, patients were staged as preoperative staging as evaluation was not available in most of the cases. Patients were staged according to the International Federation of Gynecology and Obstetrics as this evaluation was not available in most of the cases. Patient age ranged from 29 to 52 years (median 42 years). The various histopathological types included 94 cases with squamous cell carcinoma, 5 with adenocarcinoma and 4 with adenosquamous carcinoma.

All 103 cases were grouped in four groups, based on surgical procedure - simple hysterectomy (SH) / radical hysterectomy (RH) and referral place - from our own institution / outside. The groups included:

Group-I: One case referred from our institute, diagnosed as Carcinoma Cervix after vaginal hysterectomy

Group-II: 11 cases from our institute had undergone radical surgery.

Group-III: 59 referred cases after simple hysterectomy (SH)

Group-IV: 32 referred cases after radical hysterectomy

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(RH) e.g. Wartheim's hysterectomy or radical hysterectomy (WH/RH). One case from group I and 8 cases from group II reported within 3 months of postoperative period, of which 8 had no clinical evidence of gross disease. In the remaining 3 cases, 1 patient had parametrial induration and was staged IIb, the second case reported after 3 months (she had lung metastasis during her first visit); and the third case reported after 11 months. She was staged IIIb as she had parametrial involvement up to the lateral pelvic wall. In group III, of the 59 cases referred from outside facilities, after simple hysterectomy, 43 cases reported within 3 months of surgery. Only 11 had no evidence of gross disease clinically. The rest were staged as follows: 13 as stage II, 17 as stage III and 2 as stage IV.

Group IV in which 32 cases referred postoperatively after radical surgery, 25 cases reported within 3 months of surgery, of which 11 had no evidence of gross disease clinically. The rest were staged as follows: 13 as stage II, 17 as stage III and 2 as stage IV. Details of clinical staging at first visit to our institution are shown in Table 1.

Table 1- Details of clinical staging at first visit

Group II Own Institution WH/RH Group (11 Pts.)

Duration: Surg and 1st visit	Less than 3 months	3 to 6 months	6 month months	1 year & more
On examination				
NAD	8	-	-	-
II	1	-	-	-
III	-	-	1	-
IV	-	1	-	-
Group III- Outside SH group (59 Patients)				
NAD	11	-	-	-
II	13	-	1	1
III	17	6	3	2
IV	2	2	-	1
Group IV - Outside WH/RH (32 Patients)				
NAD	14	-	-	-
II	5	-	1	-
III	3	1	1	-
IV	3	-	-	2

Patients with distant spread were from all four groups, some were in the immediate postoperative period and others reported late. Details of involved sites at first visit are listed below:

Sites involved		No of Patients
1. Liver metastasis	-	02
2. Lung metastasis	-	01
3. Bone metastasis	-	01
3. Scar recurrence	-	02
4. Bladder metastasis	-	03
5. Pre/para aortic lymph node metastasis	-	02

All cases from the above group were subject to external radiotherapy. The total dose delivered was 5000 cGy in 25-28 fractions over a duration of 5-6 weeks by AP/PA or four field box technique. This was followed by brachytherapy to boost the local disease by vaginal cylinder. The tumor dose was prescribed to 0.5 cm from the surface of the cylinder

The dose prescribed was 6 Gy + 6 Gy, at weekly intervals in two fractions by high dose rate brachytherapy using Iridium 192 remote after loader. Patients with stage IV disease were treated with chemotherapy (inj. Cisplatin 30 mg/m^2, weekly for 5 weeks with radiation. Patients were followed up to June 2005. Follow-up period of the patients varied from 18 months to 7 years.

Results

A total of 103 patients were referred postoperatively during the study period from Jan. 1998 to Dec. 2001. All the patients were analyzed. Sixty nine patients completed radiotherapy whereas 34 patients defaulted. Stage IV patients were treated with chemotherapy and radiotherapy, most of them could not complete treatment due to advanced disease or financial constraints. One patient of group I, 8 out of 11 in group II, 35 out of 59 in group III and 25 out of 32 in group IV completed treatment as shown in Table 2.

Table 2: Treatment Details

	Total Patients	Completed treatment	Defaulter
PRH-VH/SH	111	18	0
WH/RH			3
Outside-	59	32	2
SH WH/SH	35	25	4
			7
Total	**103**	**69**	**34**

In group I only one patient completed radiotherapy timely and remained disease free up to last follow up i.e. 7 years. In group II, 8 out of 11 cases completed radiotherapy. On follow up, one patient had residual disease and one

developed recurrence after one year, rest of the 6 cases (75%) were disease free. In group III, of the 59 cases referred from outside after simple hysterectomy, 35 cases completed radiotherapy. On follow up, 13 cases had residual disease, and 9 developed recurrence and 17 cases (68%), were disease free till last follow up.

Discussion

Surgery plays an important role in treatment of carcinoma cervix of early stages (Ia, Ib, IIa) and in advanced stages for palliation. Early stage disease can be cured by radical surgery or radical radiotherapy with similar effectiveness, but the rate and type of complications differ. Radiotherapy is feasible and effective in almost all patients. Five year survival after this therapy ranges from 78% to 91%. By contrast, radical surgery affords the best opportunity to study pathological findings, so that groups of at-risk patients who could benefit from adjuvant treatment can be identified. Five year cure rate following surgery for early stage cervical tumors ranges from 54% to 90%. In most cases, this rate is achieved with adjuvant therapy[1]. For patients with inadequate hysterectomy and salvage post-operative radiotherapy, ten years estimated disease specific survival rate for stage Ib plus IIa versus IIb was 83% and 50% respectively[2]. Survival of patients with gross disease after hysterectomy was between 38% and 47%. Generally the five-year survival rate for patients with FIGO stage IIb treated with radical radiotherapy is in the range of 60-80%. It is better than that of patients undergoing inappropriate surgery in addition to postoperative radiotherapy[2].

In the present study, patients were treated with external radiotherapy and high dose rate brachytherapy by vaginal cylinder[3]. Brachytherapy was administered with two ovoids, ring applicator or interstitial implants. The use of concurrent chemotherapy along with radiotherapy in patients with gross disease and distant spread give better results[4]. In this study, very few patients were accepted for chemotherapy, mainly due to poor general condition and financial constraints. Various factors which affect prognosis are tumor size and tumor histopathology type[5,6,7].

Simple hysterectomy alone is not adequate for invasive carcinoma with FIGO stage Ib/IIb or more advanced disease. This results in poor survival rate. Adjuvant radiotherapy or radical re-operation is mandatory[2]. Various indications for postoperative adjuvant treatment radiotherapy / radiotherapy with chemotherapy are deep cervical or paracervical tissue invasion, positive surgical margins, metastases to pelvic nodes, simple hysterectomy alone for stage Ib or more advanced stage disease, unexpected discovery of occult invasion or all stage Ib2 or advanced stage postoperative cases.

In present study, 59 cases of Group-III were treated with simple hysterectomy outside. Preoperative evaluation was not available in most of these cases as cases were not planned for radical treatment. Some cases were referred for post-operative radiotherapy as tumor was found to be inoperable. In this last group there were a larger number of cases with residual disease after completion of adjuvant treatment and more patients developed recurrence. Patients in Group-IV were operated outside. Most of them were staged but some after examination and investigation were found to have a more advanced stage of the disease.

Adjuvant radiotherapy treatment for most of the cases was started after six weeks of surgery. Ideally it should be started within six weeks of surgery. 2 The main reason for this delay in instituting therapy was late referral of patients. Though some cases were referred early, they reported late on the presumption that the disease was cured by surgery and that adjuvant radiotherapy treatment advised was not necessary. In some other cases financial constraints were the reasons.

Post-operative radiotherapy offers effective loco-regional control. Important prognostic factors for post-operative radiotherapy are presence of gross residual disease, presence of carcinoma in resected margins and nodal spread. Disease free survival results in our study group I and II are comparable to other reports. 12 Results in group III and IV were poor, as patients in these groups were under staged or not diagnosed / staged before surgery. Patients with stage II and III disease, if treated with radiotherapy alone, achieve 48-60% cure rates. These patients can be prevented from undergoing surgical trauma.

Conclusion

Carcinoma cervix is a disease where early diagnosis and treatment provides excellent results. Surgery (simple hysterectomy), without diagnosis and staging, increases morbidity and mortality. Pre-operative diagnosis, staging and treatment can benefit patients thereby preventing surgical trauma, financial burden and unnecessary delay in initiating radiotherapy.

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