

# Management of Invasive Cervical Cancer after Simple Hysterectomy

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**OBJECTIVES** – To study cases of cervical cancer, inappropriately managed by simple hysterectomy, and to analyze reasons for such inappropriate surgery, further management options, prognosis and survival. **METHODS** – Forty cases of invasive cervical cancer referred after simple hysterectomy, were studied regarding indications for hysterectomy, operative surgeon and histopathology. Disease status at the time of referral was noted. Retrospective staging (FIGO) was done. Further treatment was planned and results analyzed. **RESULTS** – 62.5% had abnormal uterine bleeding preoperatively. Cervical cancer had been diagnosed in 10%. 22.5% were in stage III. Most patients were treated with radiotherapy. Radical reoperation was performed in one case. Follow-up period was 6 to 48 months. Thirty percent were disease free, 25% had residual disease and 20% had recurrence. Three patients died of the disease. Presence of gross disease, retrospective stage, and time lapse between surgery and referrals to higher center were found to be significant factors. **CONCLUSION** – Inadvertent simple hysterectomy in cervical carcinoma increases morbidity, decreases survival and should be condemned.

**Key words** : simple hysterectomy, invasive cervical cancer

## Introduction

Cervical cancer is still the most common genital cancer in India. Invasive cervical cancer is optimally treated by radical hysterectomy and pelvic lymphadenectomy or radical pelvic irradiation to encompass the primary areas at risk of disease spread viz., the parametrium and regional lymph nodes. Less radical procedures like simple hysterectomy and cervical conization, could be employed as equally effective in microinvasive squamous cell carcinoma (FIGO stage Ia1), because the risk of parametrial or nodal spread is negligible.

Sometimes invasive cervical cancer cases are inappropriately managed elsewhere by simple hysterectomy and referred to us afterwards. Such simple hysterectomies are performed either unknowingly for management of benign uterine diseases in the presence of undiagnosed cervical carcinoma or knowingly for cervical carcinoma. But it has been proven as an inadequate treatment resulting in a reduced survival rate.

Total hysterectomy alone for treatment of cervical cancer results in a risk of recurrence as high as 60%<sup>1</sup>.

The high recurrence rate observed in such patients raises the question of adjuvant treatment.

When invasive cervical cancer is detected after simple hysterectomy, further treatment is radiotherapy in most of the cases, but in few selected cases radical reoperation consisting of radical parametrectomy, upper vaginectomy and pelvic lymphadenectomy can be done.

We reviewed 40 cases of invasive cervical cancer who had simple hysterectomy. Our aims were to determine the reasons for such simple hysterectomies being performed for invasive cervical cancer, to evaluate factors related to survival and to analyze the results of available treatment options.

## Material and Methods

This is a retrospective analytic study of 40 cervical cancer cases subjected to simple hysterectomy elsewhere and referred to us afterwards. Such cases were evaluated over a period of five years from January 1998 to December 2002. Information regarding preoperative details, indications for hysterectomy, place of surgery – whether a teaching institute or a private hospital, time of referral to cancer institute and histopathological diagnosis were obtained. Physical findings at the time of admission were noted and investigations including hematological profile, chest x-ray, ultrasonography of abdomen and pelvis, intravenous pyelography (IVP) and histopathology studies were scrutinized. Patients

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were grouped according to disease status at the time of referral for post-hysterectomy treatment as follows<sup>2</sup>:-

1. Micro invasive disease - no patients.
2. Tumor confined to the cervix, surgical margins negative - 8 patients
3. Surgical margins positive but no gross residual tumor - 8 patients.
4. Gross residual tumor diagnosed by clinical examination 10 patients.
5. Referred for recurrence of disease more than 6 months after hysterectomy - 14 patients.

Patients in groups 1, 2 and 3 had no gross disease whereas patients in groups 4 and 5 had gross disease present at the start of post-hysterectomy treatment.

Retrospective staging according to FIGO criteria was accomplished on the basis of the pathology report as well as the results of post-hysterectomy evaluation<sup>2</sup>:-

- Patients with negative surgical margins designated as having stage I disease - 12 patients.
- Patients with tumor at surgical margins and no gross residual disease considered to have stage II disease - 8 patients.
- Patients with gross residual disease or hydroureter detected by IVP post-hysterectomy considered to have stage III disease - 9 patients.
- Patients referred for treatment only at the time of recurrence, considered unstaged - 11 patients.

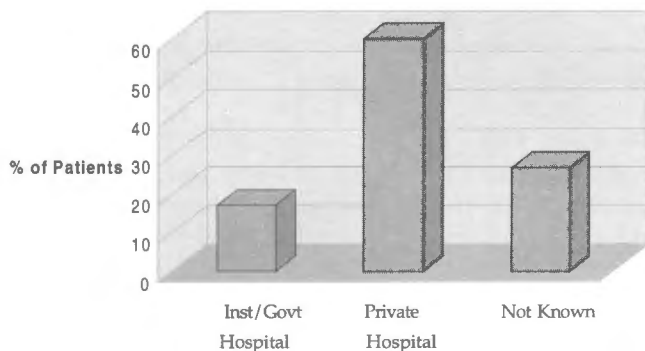


Fig 1 : Place of surgery

Further management was carried out according to residual disease and status of the patient, and the results were analyzed.

### Results

During the period from January 1998 to December 2000, 2956 patients with carcinoma cervix were referred to our institution. Of these 210 had undergone inappropriate simple hysterectomy elsewhere in the presence of cervical cancer, constituting 7.12% of cervical cancer during this period.

The age of the 40 patients in the study ranged from 30 to 65 years (median age 45 years). Thirty-eight patients had undergone total abdominal hysterectomy with or without bilateral salpingo-oophorectomy. One had subtotal abdominal hysterectomy and one had vaginal hysterectomy.

Histopathology showed squamous cell carcinoma in 37 patients, adenosquamous carcinoma in two and adenocarcinoma in one.

Most simple hysterectomies had been performed by gynecologists (22 patients) and general surgeons (six patients). Many of them were done at private hospitals (25 patients) but such inappropriate simple hysterectomies were also done at institutions or general hospitals (six patients) (Fig. 1 and 2).

Abnormal uterine bleeding was the most common indication for hysterectomy (25 patients). In this retrospective analysis, there was no evidence of preoperative cervical smear and colposcopy done to rule out cervical cause of abnormal uterine bleeding. Cervical cancer was the indication for hysterectomy in four patients. In six patients, the indications were not clear (Table I).

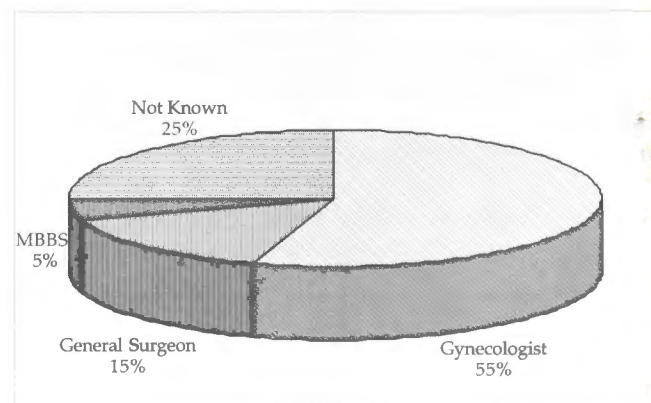


Fig 2 : Operating surgeon

Table I : Indications of hysterectomy

Indications	No. of patients
Abnormal uterine bleeding	25 (62.5%)
Fibroid uterus	02 (5.0%)
Tubo-ovarian mass	02 (5.0%)
Bad cervix	01 (2.5%)
Carcinoma cervix	04 (10.0%)
Not known	06 (15.0%)

Table II Post-hysterectomy treatment

Type of treatment	No. of patients
Radiotherapy	31
Surgery + radiotherapy + chemotherapy	01
Chemotherapy	01
Non-compliance of treatment	07

Table III : Analysis of 33 patients after post-hysterectomy treatment

Type of treatment	Radiotherapy	Surgery + Radiotherapy + Chemotherapy	Chemotherapy
No. of patients	31	01	01
Disease free	11	01	-
Recurrence	08	-	-
Residual disease	10	-	-
Patient expired	02	-	01

Table IV : Analysis of prognostic factors

Prognostic factor	No. of patients	Treatment taken	Free of disease
<b>Residual disease</b>			
No	16	14	07 (50%)
Yes	24	19	05 (26.3%)
<b>Stage</b>			
I	12	10	03 (30%)
II	08	08	04 (50%)
III	09	06	03 (50%)
Unstaged	11	09	02 (22.2%)
<b>Time of referral</b>			
< 6 months	26	21	10 (47.62%)
> 6 months	14	12	02 (16.67%)

*Post-hysterectomy treatment* Out of 40 cases, 33 took further treatment. Radiotherapy was given to 31 patients. In one patient, radical re-operation was performed followed by radiotherapy and chemotherapy, as the nodes were positive. In one case chemotherapy was given because of lung metastasis (Table II).

All 33 patients were followed up to December 2002 (range 6 to 48 months). Among 33 patients who received radiotherapy, 11 became free of the disease. One patient who underwent surgery followed by radiotherapy and chemotherapy is free of the disease. Eight patients developed recurrence and 10 had gross residual disease in spite of receiving post-hysterectomy treatment. These 18 patients are still alive with the disease. Two patients who received radiotherapy expired due to gross residual disease. One patient, who received chemotherapy, expired due to advanced disease (Table III).

*Prognostic Factors* Presence of gross disease, retrospective stage, and time lapse between surgery and referral to higher center were found to be significant prognostic factors. Patients with no residual tumor at onset of post-hysterectomy treatment had 50% disease free survival, while patients with gross residual tumor at onset of post-hysterectomy treatment had only 26% disease free survival.

In our study, even in the 10 patients with stage I disease, the prognosis was very poor. Only four patients became free of disease, six had either residual disease or recurrence, of which two expired.

The survival rate was just 16.67% in patients in whom referral was delayed beyond 6 months. While in patients whose treatment was started within 6 months, disease free survival was 48%.

## Discussion

Simple hysterectomy performed in the presence of cervical cancer is a major problem despite increasing emphasis on cervical cancer screening and early detection. The number of such referrals to our institute is increasing day by day.

It is very important to know the reason for this unfortunate situation. Rodolakis et al<sup>3</sup> showed that the absence of preoperative cytology and inadequate evaluation of abnormal Pap smears were the main causes leading to an inappropriate simple hysterectomy. More recently Behtash et al<sup>4</sup> found that failure to perform a Pap smear or conization,

incomplete evaluation of an abnormal Pap smear or cervical biopsy and deliberate hysterectomy for cervical cancer were the main reasons. In our study abnormal uterine bleeding was the commonest (62.5%) indication for total hysterectomy. In none of these cases preoperative evaluation of the cervix was done to rule out cervical neoplasia. In one case 'bad cervix' was the indication. Bad cervix as such is not an indication for hysterectomy. Bad cervix may be due to chronic cervicitis, erosion or cervical neoplasia. Proper evaluation and management of its cause is required. Four patients had preoperative diagnosis of cervical carcinoma, but still deliberate hysterectomy was done. Four patients were operated for benign disease (fibroid uterus, tubo-ovarian mass) of the uterus without preoperative cytologic evaluation of the cervix. In six of our patients preoperative details were not available and hence, reasons for inappropriate hysterectomy could not be found.

Many studies have reported poor results after total hysterectomy alone for invasive carcinoma of the cervix even when the disease is entirely limited to the uterine cervix (Stage I). Jones and Jones<sup>5</sup> reported 41.6% five year survival rate in 36 patients with early stage I cervical carcinoma who had been treated with hysterectomy alone.

Schmidt<sup>6</sup> reported a five-year survival rate of 60% when the lesion was confined to the cervix and only 16% with involvement of surgical margin. In our study, survival of stage I after inappropriate hysterectomy was just 30% even after receiving further treatment. Our follow up was less than 5 years.

On the other hand, after proper management of invasive cervical cancer the results are much better especially in early stage disease with five year survival ranging between 80 to 90% for stage I and 65 to 70% for stage II.

At our institute, after Werthiem-Meig's hysterectomy (with or without radiotherapy) for stage I cancer cervix, disease free survival is 82% with recurrence rate of 18%. But in patients in whom inappropriate hysterectomy has been performed elsewhere, disease free survival is just 30% even after further treatment.

As a rule total hysterectomy is not curative in invasive cervical carcinoma because the paravaginal and paracervical soft tissues including the upper vaginal and pelvic lymph nodes are not removed. For these reasons, further treatment has to be supplemented to improve survival<sup>7</sup>. This can be in

the form of either radiotherapy or radical re-operation, depending on the individual patient. Results of further treatment depend upon the residual disease and the time lapse between surgery and further treatment.

Five year survival rates after post-hysterectomy radiotherapy in invasive cervical cancer patients who had no apparent residual disease ranged from 71% to 90%. For similar patients undergoing radical parametrectomy and pelvic lymphadenectomy, a survival rate of 96% after median follow up of three years was reported by Orr et al<sup>1</sup>. In our study, all patients received radiotherapy but in one patient radical parametrectomy and pelvic lymphadenectomy was performed followed by radiotherapy and chemotherapy, as the nodes were positive. Overall survival rate with no residual disease is only 50% in our study. Perhaps this is due to late referral of most patients.

Survival of patients with gross disease at the time of post-hysterectomy treatment has been uniformly poor. Reported survival rates for patients with gross disease receiving radiotherapy range from 23% to 43%. Our survival rate at 6 to 48 months follow up with gross disease was 26%.

The unexpected finding of invasive cervical cancer in a total hysterectomy specimen should prompt immediate consultation or referral to a higher center. In such patients, results of post-operative therapy depend upon the residual disease. Still survival can be improved if further treatment starts early. Roman et al<sup>2</sup> reported 75% five year survival in patients without clinical disease who were treated immediately after surgery and 39% in patients with clinical persistence or recurrence at the time of initial radiation therapy.

In our study, the survival rate was 48% in patients in whom post-hysterectomy treatment was started within 6 months of hysterectomy. While the survival rate was just 17% in patients in whom the treatment was started more than 6 months after hysterectomy.

Simple hysterectomy represents inadequate treatment of cervical carcinoma. Such treatment greatly increases morbidity and decreases survival. Patients with gross residual disease remaining after hysterectomy have poor prognosis. If simple hysterectomy is inadvertently performed, the patient must be referred immediately for further management.

Such types of "cut through" procedures are potentially preventable. Patients with abnormal uterine bleeding require proper evaluation of the cervix, and dilatation and curettage prior to hysterectomy. Most cases of inappropriate hysterectomy performed in the presence of cervical cancer could be avoided by careful adherence to well established guidelines for cervical cancer detection. Importance and practical aspects of Pap smear should be emphasised in the undergraduate curriculum. Training of postgraduate students for thorough preoperative evaluation should be mandatory. Gynecologists play a critical role in prevention, screening, diagnosis, and treatment of gynecological malignancies.

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