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Pelvic Exenteration and laterally extended endopelvic resection (LEER) for residual and recurrent carcinoma cervix: Experience at a tertiary cancer hospital

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ABSTRACT

Introduction: Concurrent chemoradiation (CCRT) is standard of care for the patients with locoregionally advanced carcinoma cervix. Up to 45% patients can have residual disease after CCRT. Five years progression free survival (PFS) ranges from 46-63% based on stage of the disease. Pelvic exenteration and LEER are options in the management of carefully selected patients with residual or centrally recurrent carcinoma cervix after CCRT. **Aims and Objectives:** We present a series of 3 consecutive cases of residual and recurrent carcinoma cervix post CCRT managed with Pelvic exenteration and laterally extended endopelvic resection (LEER) during a period of 2012-2016. **Patients and methods:** These three consecutive patients were diagnosed with locally advanced carcinoma of the cervix (IIA2-IIIB) and received Cisplatin based CCRT as primary treatment. Two patients who had residual disease after the treatment and one who had recurrence after disease free survival of 18 months were managed with anterior pelvic exenteration and LEER respectively. The diagnosis was Adenocarcinoma carcinoma in one patient, Adenosquamous in second and Squamous cell carcinoma in the third patient. Two patients had stage FIGO Stage IIA2 disease and one had III B disease. **Results:** The mean age of the patients was 41.6 years. Average duration of surgery was 6.67 hours, mean blood loss was 700 ml and all patients underwent margin negative excision. The mean blood transfusion was 3 units in the perioperative period. Infectious complications developed in 2 patients and one patient developed renal dysfunctions requiring dialysis. The mean postoperative hospital stay was 24 days. The mean follow up duration is 28 months (12-59 months). One patient developed stomal stenosis and required refashioning. One patient developed recurrence after 33 months of surgery and received palliative chemotherapy for the same. She is alive with disease till last follow up (July 2017). In Anterior pelvic exenteration group one patient is disease free 12 months post surgery and second patient died 13 months after surgery due to renal complications. **Conlusion:** Pelvic exenteration and LEER are surgical options in cases of recurrent and residual advance carcinoma cervix treated primarily with CCRT. Patient selection is of utmost importance and margin negative resection should be the surgical aim.

INTRODUCTION

Carcinoma of the cervix is a common cancer in India. Majority of the cases present with advanced locoregional disease. Concurrent chemoradiation (CCRT) is standard of care for such patients. Up to 45% patients can have residual disease after CCRT[(1)]. Five years progression free survival (PFS) ranges from 46-63% based on stage of the disease[(2)]. Pelvic exenteration is an option in the management of residual or centrally recurrent carcinoma cervix after CCRT.

AIMS AND OBJECTIVES:

We present a series of 3 consecutive cases of residual and recurrent carcinoma cervix post CCRT managed with Pelvic exenteration and laterally extended endopelvic resection (LEER) during a period of 2012-2016.

PATIENTS AND METHODS

These three consecutive patients were diagnosed with locally advanced carcinoma of the cervix (IIA2-IIIB) and received Cisplatin based CCRT with intracavitatory brachytherapy (ICR) as primary treatment.

Two patients who had residual disease after the treatment and one who had recurrence were managed with anterior pelvic exenteration and LEER respectively. The diagnosis was Adenocarcinoma carcinoma in one patient, adenosquamous in second and squamous cell carcinoma in the third patient. Two patients had stage FIGO Stage IIA2 diseases and one had III B disease. In residual disease cases patients underwent anterior pelvic exenteration after 8 and 16 weeks of completion of CCRT. One patient with recurrent disease underwent LEER after DFS of 18 Months.

RESULTS

The mean age of the patients was 41.6 years. Two patients had residual disease and one had recurrent disease after DFS of 18 months. Average duration of surgery was 6.67 hours, mean blood loss was 700 ml and all patients underwent margin negative excision. The mean blood transfusion was 3 units in the perioperative period. Infectious complications developed in 2 patients and one patient developed renal dysfunctions requiring bilateral percutaneous nephrostomy and dialysis. The mean postoperative hospital stay was 24 days. The mean follow up duration is 30 months (12-59 months). One patient developed stomal stenosis and required refashioning. One patient developed recurrence after 33 months of surgery and received palliative chemotherapy for the same. She is alive with disease till last follow up (July 2017). In Anterior pelvic exenteration group one patient is disease free 12 months post surgery and second patient died 13 months after surgery due to renal complications.

DISCUSSION

Carcinoma cervix is a common cancer in India. It is the second most com-mon cancer in women aged 15-44 years [(3)]. Most of the cases (85%) present in advanced and late stages, and more than half (63%-89%) have regional disease at the time of presentation[(4)]. Concurrent chemoradition is the standard of care for treatment of carcinoma cervix stage IIB-III. In one study residual disease was present radiologically in up to 57% of the patients and on hysterectomy 45.3% contained residual tumor [(1)]. An Italian multicentre study of 327 patients with recurrent carcinoma cervix treated primarily using chemotherapy, surgery, radiation alone or with chemotherapy showed incidence of central pelvic recurrence was 36.7%, vault recurrence 20.5% and distant recurrence in 24.2 % patients [(5)]. Rose et. al. in their landmark paper showed PFS rate of 63%, 58% and 46% respectively in patient treated with Cisplatin based concurrent chemoradition (CCRT) for stage IIB, III and IVa patients [(2)]. They also noted local progression in 22% of the patients treated with Cisplatin based CCRT[(2)]. In RTOG 9001 local failure rates and distant metastasis were 18% each in chemotherapy with pelvic radiation arm [(6).] Surgery is one of the options available for locally recurrent carcinoma cervix after definitive CCRT but is fraught with high morbidity and mortality. Pelvic exenteration was first reported in 1948 as a palliative operation for advanced pelvic carcinoma by Dr. Alexander Brunschwig [(7).]

Pelvic exenteration is an option for limited central pelvic recurrence. Classically exenteration is divided in anterior, posterior and total pelvic exenteration based on the viscera removed. Magrina and Chiva suggested classification into three types supralevator, infralevator and with vulvectomy [(8–10)]. This classicfication uses levator ani as reference point. Historical series have shown that up to one third of the patient explored for pelvic exenteration will have their procedure abandoned. Patient selection is very important. The patient with central mobile recurrent tumors of not more than 3 cms in size and disease free interval of at least 1 year post surgery has best chances of cure by exenteration [(11)]. With improvement in anesthesia, surgical reconstruction, pre and postoperative care, there has been considerable improvement in the results. Berek et. al. reported the results of 74 patients who underwent pelvic exenteration for recurrent gynecological tumors at UCLA over a period of 45 years (1956-2001)[(12)]. Approximately 71% of their patient underwent the procedure for cervical cancer, 61% had total exenteration, 31% had anterior and 8% had posterior exenteration. The mean duration of surgery was 7.76 hours, mean blood loss 2.5 litres, mean blood transfusion 4.9 units and mean duration of stay was 23.4 days. In our study mean duration of surgery was 7 hours which is almost similar to that reported by Berek et.al. but mean blood loss and transfusion is less in our study. Improvement in intraop hemostasis due to use of harmonic scalpel and less extensive nature of the surgeries (only one total exenteration and absence of reconstructive procedures) might be the reason for reduced blood loss. They reported infectious complications in 86% of the patients and these included wound infections, pyelonephritis , sepsis and pelvic abscess. In our study 66% (two out of three patients) of the patient developed infectious complications in the form of surgical site infection and delayed postoperative fever. In both cases patient responded to escalation of the antibiotics. In their study most common late morbidity was urinary and gastrointestinal fistulae which occurred in 23 % of the patients. None of the patients developed fistulae in our series. They reported 57% survival at 3 years and 54% survival at 5 years in patient who underwent these procedures for cervical and vaginal carcinomas [(12)]. Two of our patients are alive till the time of writing this report. One patient had recurrence after DFS of 33 months. She was given palliative paclitaxel and carboplatin based chemotherapy and she is alive with disease at the time at writing of this report. We had one mortality due to renal complication which required bilateral percutaneous nephrostomy and dialysis. Negative margin was an important predictor of survival with 64% survival at 3 years for the patient who underwent negative margin excision compared to 0% for those who had margin positive excision[(12).] All the patients in our series underwent margin negative resection. Patients with recurrent cervical cancer involving the pelvic side wall are traditionally unfit for exenteration. Laterally extended endopelvic resection (LEER) proposed by Höckel et al. is a novel surgical approach for these patients.

This operation is characterized by the inclusion of the internal iliac vessel system, endopelvic part of the obturator internus muscle, coccygeus, ilio-coccygeus and pubo-coccygeus muscles at the side of tumour fixation into the exenteration specimen [(13)]. Höckel reported their series of 100 patients with recurrent or advanced gynaecological tumours, mainly represented by cervical cancer (63%) treated with LEER. Peri-operative mortality was 2%, major iatrogenic morbidity occurred in 70% of the patients, and the 5-year recurrence-free and disease-specific overall survival rates were 62 and 55%, respectively[(14)]. In our series one patient underwent LEER. She required ionotropic support in the immediate post operative period along with non invasive ventilation. She is on follow up one year post surgery and is free of disease.

CONCLUSION

Pelvic exenteration and LEER are surgical options in cases of recurrent and residual advance carcinoma cervix treated primarily with CCRT. Patient selection is of utmost importance and margin negative resection should be the surgical aim.

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