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Surgeon's Errors in the Managment of Patients with Cervical Cancer

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ABSTRACT

Background & aim: Generally, in patients with cervical cancer, careful preliminary evaluation is necessary for avoiding improper surgical procedures and making effective clinical decisions for treatment. The aim of this study was to determine surgeon errors, which necessitate a combination of surgery and radiotherapy for cervical cancer patients.

Methods: In this retrospective study, medical records of all cervical cancer patients, undergoing hysterectomy at tumor clinics of Ghaem and Omid Hospitals, were collected from 1988 to 2008. In total, the medical records of 93 subjects with postoperative radiotherapy were examined. All records were assessed in terms of surgeons' errors, patients' follow-up after radiotherapy, rate of disease recurrence, and mortality rate. In addition, survival factors were recordedandassessed, and cumulative 3- and 5-year disease-free survival (DFS) rates as well as overall survival (OS) rate were determined by Kaplan–Meiertest.

Results: The overall rate of surgeons' errors was 41%. The most common surgical error was improper surgical care due to surgeon's lack of knowledge about the cervical cancer treatment. The 3-year DFS rates were 86% and 64% in cases without surgeon's error and those affected by surgeon's error, respectively. In addition, the 5-year DFS rate was 53% in the non-affected group and 47% in cases affected by surgeon's error (P=0.05).

Conclusion: Pre-treatment evaluation as well as proper treatment is necessary for the prevention of adverse effects, caused by inappropriate surgical interventions. It is suggested that more time and attention be allocated to the improvement of surgical outcomes.

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Introduction

Invasive cervical cancer is the second cause of mortality among women, worldwide. The mortality rate of cervical cancer was reported to be 50% in our country (1). This disease is treated by surgical intervention and/or radiotherapy. Primary radiotherapy is used for the treatment of all stages of the disease, though surgery is only performed in cases with stage II disease.

The reports of National Cancer Institute about the epidemiology of cervical cancer andintervention outcomes indicate that surgical procedures are associated with higher survival rate, compared to radiotherapy (2, 3). In fact, radiotherapy after surgery might expose patients to some risk factors (high or medium risks); it is also accompanied by various complications, given the use of multimodality treatment. Greimel et al. in 2008, reported that quality of life was lower in patients with cervical

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cancer, treated by adjuvant radiotherapy, compared to patients treated by surgery alone (4).

Simple hysterectomy for the treatment of cervical cancer is one of the causes of decreasing survival rate; this is in fact due to the inadequacy of preoperative evaluation. In these cases, due to surgeon's misdiagnosis of tumors as benign or premalignant conditions, simple hysterectomy is inevitable.

Munstedt et al. (2004) illustrated that 4-15% of invasive cervical cancers are found, after an inappropriate hysterectomy is performed (5). One study in Greece, which aimed to determine the reasons leading to inappropriate simple hysterectomy for the treatment of cervical cancer, recommended adherence to cervicalcancer screening guidelines and proper evaluation of presenting symptoms (6).

According to previous studies in Iran, a common reason for inappropriate simple hysterectomy in the presence of invasive cervicalcanceris lack of performing preoperative Pap smear (7). The aim of this study was to evaluate surgeon errors in patient treatment, which necessitate a combination of surgery and radiotherapy.

Materials and Methods

In this cross-sectional study, all referred patients with cervical cancer, who were candidates for radiotherapy after hysterectomy at tumor clinics of Ghaem and Omid hospitals in Mashhad, Iran, were evaluated from 1988 to 2008.

During the first visit, a gynecologist evaluated the patient's status via systemic and pelvic examinations. Then, a radiotherapist made a clinical decision about performing post-operative radiotherapy, based on pathological results, prognostic factors, and the patient's health status. At the end of radiotherapy period, clinical examination and paraclinical evaluation were recommended in the patients' follow-ups. The patients were followed-up every 3 months for 2 years, then every 6 months for three years, and once per year thereafter.

The inclusion criterion was undergoing radiotherapy after hysterectomy in patients with cervical cancer. The patients with incomplete medical records were excluded from the study. Finally, 93 cases were enrolled, and the patients' medical records were retrospectively reviewed.

Afterwards, a checklist was completed, which consisted of two parts. The first section included the following information: 1) patients' health status at admission including the type of hysterectomy (radical, simple, or supracervical), macroscopic parametrial involvement, and the stage of disease before surgery, based on the examination and surgery reports; 2) pathological results; 3) adverse effects associated with radiotherapy; and 4) duration and site(s) of recurrence. All records were evaluated in terms of indications for postoperative radiotherapy to determine if there were any errors during the treatment. The second section consisted of information related to patients' follow-ups after treatments, which was obtained via phone interviews or medical files.

The 1-year, 18-month, 2-year, 3-year, and 5-year overall survival (OS) and disease-free survival (DFS) rates were determined, and then the relationship between survival rate and the type of hysterectomy was assessed.

Statistical analysis was performed using SPSS version 17. Chi-square test and log-rank method were used for the evaluation of the relationship and comparison between the factors. OS and DFS rates were calculated by Kaplan–Meiertest.

Results

Among 93 patients, 28 (30.1%), 55 (59.1%), and 10 (10.8%) cases had undergone radical, simple, and supracervical hysterectomies, respectively. In one case, the pathological evaluation of hysterectomy specimen had not been performed. One patient had undergone simple hysterectomy, due to abnormal uterine bleeding before the pathological report of invasive cancer. In three cases, the subjects had refused to undergo radiotherapy, due to unknown reasons; also, one subject had undergone simple hysterectomy despite the pathological report of cervical cancer. Overall, out of 93 patients, 19 cases (20.4%) with active disease manifestations had received external beam pelvic radiotherapy after surgery.

Surgeon errors (inappropriate surgicalintervention) were reported in 64 patients (41%), despite the clinical diagnosis of

cervical

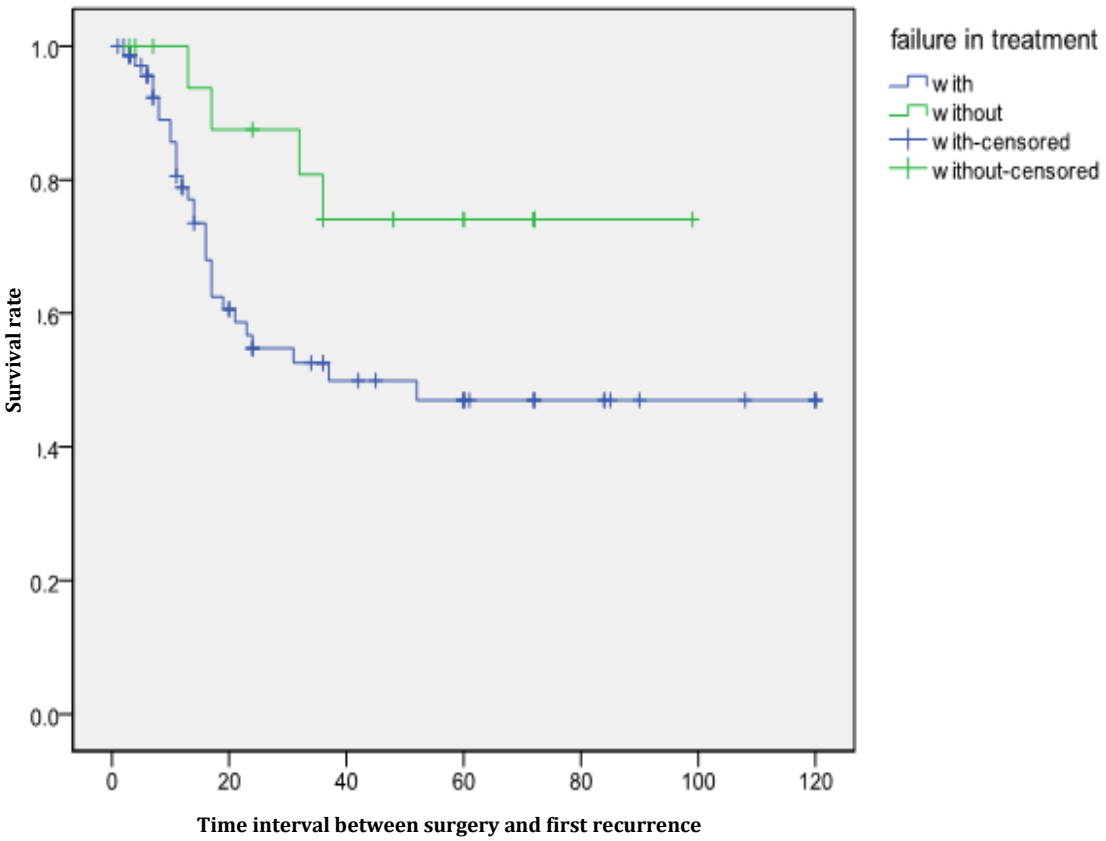

Figure 1. Comparison of the overall survival rates according to treatment failure

Table 1. Comparison of the rate of disease free survival according to type of surgery

Time	Type of hysterectomy		
	Radical	Simple	Supra servical
1 year	95.8%	77.7%	77.1%
1.5 years	79.2%	60.7%	77.1%
2 years	74.8%	53.4%	77.1%
3 years	65.4%	53.4%	51.4%
5 years	65.4%	46.2%	51.4%
Result of Log rank test	P = 0.25	$\chi 2$ =2.771	

cancer and lack of cervical biopsy or even Pap smear (pathological proof), they underwent hysterectomy before surgery. Comparison between different types of surgery in terms of DFS rate is illustrated in Table 1. This rate was higher in the radical method, but the difference was not statistically significant (P=0.25).

During the follow-up period, the rate ofdisease recurrence was 35.5% in 33 patients; fifteen cases (48.4**%**) were in the group, affected by surgeon errors. The cumulative 5-year OS rate wasestimated to be 52.8%; however, the 5-year DFS rate was 53% in the non-affected group and 47% in cases affected by surgical errors(Figure 1). Also, the cumulative 3- and 5-year DFS rates were 86% and 64%, respectively; these rates were 53% in the non-affected group and 47% in cases affected by surgeon errors(P=0.05) (Figure 1).

All patients were followed-up (minimum of 1

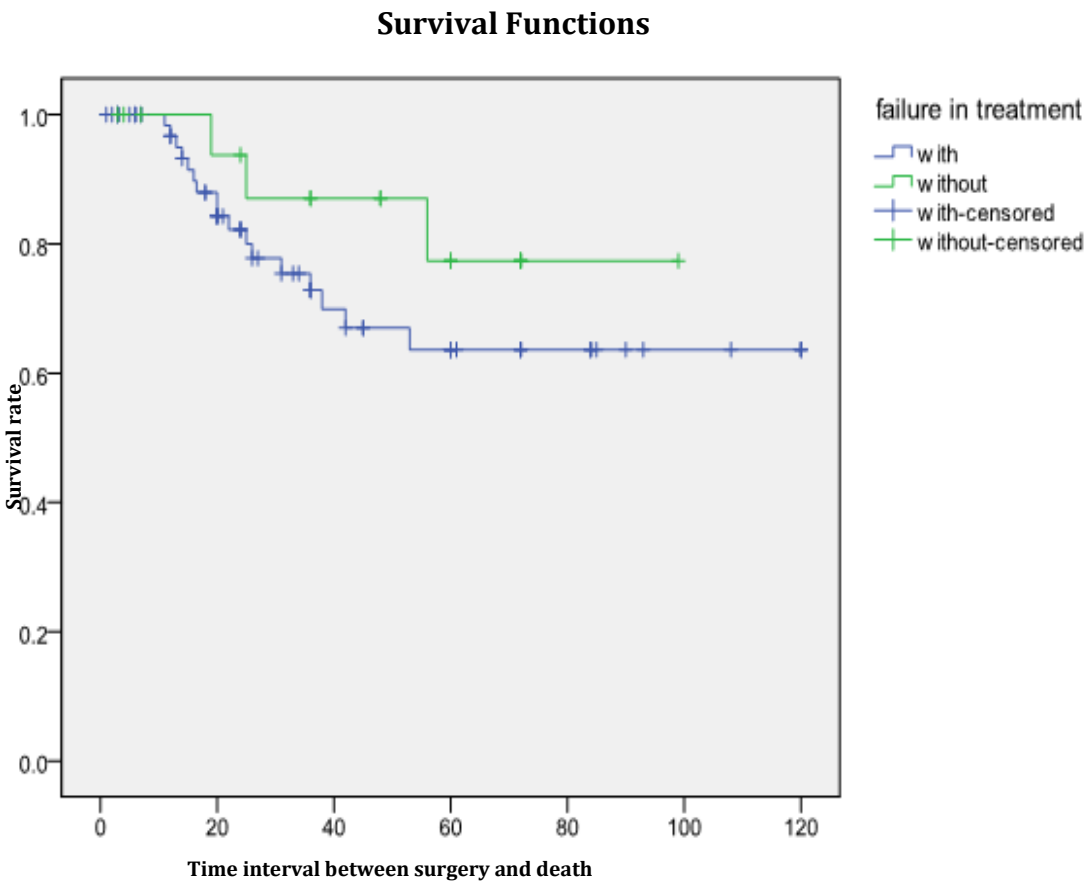

Figure 2. Comparison of DFS rates according to treatment malpractice

month and maximum of 120 months) after the interventions, and the mean follow-up period was 37.3 months (Figure 2).

Discussion

In the present study, the major factor, which led to approximately half of surgeon errors (41%), was inappropriate cervical cancer surgery. The most common errors of surgeons were lack of preoperative cytologic evaluation, inadequate evaluation of abnormal Pap smear results, and unconfirmed diagnostic procedures in patients who were candidates for hysterictomy.

The second most common error was lack of patient examination before hysterectomy and unawareness of tumor extension and the involvedorgans. Errors were reported in 69.9% of the cases, which shows the high rate of these errors. Therefore, surgeons, through more careful examinations, should eliminate these errors.

Previous studies, which aimed to determine the reasons for inappropriate simple hysterectomy for the treatment of cervical cancer, reported the following factors: lack of preoperative Pap smear, deliberate hysterectomy for biopsy-proven cancer, inadequate evaluation of abnormal Pap smear, positive Pap smear, and failure to perform conization (7-9). Prognosis in patients with residual disease after a simple hysterectomy is poor. Such patients have a lower survival rate, compared to patients treated by primary irradiation. In fact, the survival rate reduced to 16% in patients with tumor infiltration at surgical margins; the reports demonstrate that the cumulative 5-year survival rate was 63.5% in patients (10). In this study, 5-year OS rate was 52.8%, which is lower than the results of studies by Pieterse et al. and Lasry et al. (11, 12). This might be due to the inappropriate surgery (simple or

supracervicalhysterectomy) and increasing rate of treatment failure in patients with residual tumor after surgery.

According to reports by Oncology Center Medical Hospital,in extensive residual disease, DFS rate was lower, compared to patients with a similar stage of the disease, who had not been treated by hysterectomy (13). Overall, in this study, DFS rate in the group with suitable surgery was statistically significant; however, the difference in OS rate was not significant.

One of the limitations of the current study, which must be considered in the interpretation of data, is absence of the patients from follow-up examinations; also, some medical records of the patients were incomplete.

In order to avoid complications due to staff negligence, proper management, as well as precise pre-treatment evaluation, is necessary to avoid inappropriate surgical interventions. By allocating more time and attention, it might be possible to improve the outcomes over time and minimize surgeon errors, which necessitate the use of multimodality treatments.

Conflict of Interest

The authors declare no conflicts of interest.

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