

Evaluation of the Outcome of Inappropriate Surgery for Cervical Cancer

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Abstract

Original Research Article

Background: Cervical cancer is a significant health concern for women worldwide, especially in low- and middle-income countries like Bangladesh, due to limited screening, poor health literacy, and restricted access to specialized care. Many women in resource-limited settings undergo inappropriate hysterectomies under the assumption of benign conditions. These non-oncologic surgeries can result in incomplete tumor removal, delayed diagnosis, and compromised treatment outcomes. Misdiagnosis and surgical errors significantly increase recurrence risk, morbidity, and mortality.

Aim of the study: This study aims to evaluate the short-term outcomes of patients who underwent inappropriate surgery for cervical cancer, with follow-up data collected over a period exceeding one year. **Methods:** This retrospective observational study assessed the short-term outcomes of 20 female patients with histologically confirmed cervical cancer who underwent inappropriate surgical procedures from 2016 to 2019 at BSMMU and Central Hospital, Dhaka. Inclusion criteria included non-radical hysterectomies performed without oncologic planning or diagnosis. Data were collected from medical records using a structured form, including demographics, clinical presentation, surgical details, and follow-up outcomes. Short-term outcomes focused on recurrence and survival after at least one year of follow-up.

Results: In this study of 20 patients who underwent inappropriate surgery for cervical cancer, most were middle-aged or older and had high parity. Vaginal bleeding was the most common presenting symptom (70%). The majority (70%) received a total abdominal hysterectomy with bilateral salpingo-oophorectomy, suggesting overtreatment. All patients required adjuvant chemo/radiation, and 50% needed re-operation to correct initial management. Post-treatment outcomes were poor, with only 40% alive and disease-free, 10% deceased within a year, and 10% lost to follow-up.

Conclusion: Inappropriate surgical management of cervical cancer led to poor outcomes, including low disease-free survival, high re-operation rates, and reliance on adjuvant therapy. With only 40% disease-free at one year, the study emphasizes the urgent need for accurate diagnosis, staging, and adherence to standard treatment protocols to improve patient outcomes.

Keywords: Cervical Cancer, Inappropriate Surgery, Treatment Outcomes.

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INTRODUCTION

Cervical cancer remains one of the most common malignancies affecting women globally, particularly in developing countries where healthcare resources and cancer screening programs are limited. According to GLOBOCAN 2018, cervical cancer was the fourth most frequently diagnosed cancer and the fourth leading cause of cancer death among women worldwide, with an estimated 570,000 new cases and 311,000 deaths in 2018 alone [1]. In low- and middle-income countries (LMICs), including Bangladesh, the burden of cervical cancer is disproportionately high due to inadequate screening, poor health literacy, and limited access to specialized oncologic care [2]. The cornerstone

of cervical cancer management involves accurate staging and appropriate surgical or oncological intervention based on disease extent. The International Federation of Gynecology and Obstetrics (FIGO) staging system provides guidelines for treatment stratification, which often includes radical hysterectomy or chemoradiotherapy for early-stage disease [3]. However, in many LMICs, women with undiagnosed or misdiagnosed cervical cancer are subjected to inappropriate surgeries such as total or subtotal hysterectomy, often performed under the assumption of benign gynecologic conditions like fibroids or dysfunctional uterine bleeding [4]. Inappropriate surgical intervention for cervical cancer can result in multiple adverse consequences. These include

incomplete tumor excision, disruption of anatomical barriers, increased risk of local recurrence, and loss of the opportunity for curative treatment [5]. Moreover, these surgeries may complicate subsequent oncologic management by altering pelvic anatomy and delaying proper diagnosis and staging [6]. Studies have shown that up to 10–20% of women with unsuspected cervical cancer are diagnosed only after undergoing a non-oncologic hysterectomy [7]. This phenomenon is especially prevalent in resource-limited settings, where access to trained oncologists, diagnostic tools, and referral systems is often lacking [8]. The psychological, physical, and financial burdens of disease recurrence after inappropriate surgery are substantial. Patients frequently require aggressive adjuvant therapies, which are less effective in the setting of prior incomplete surgeries and may contribute to increased morbidity and reduced survival [9]. Furthermore, these patients often face delays in receiving proper oncologic care, leading to advanced disease at the time of re-evaluation and poorer long-term outcomes [10]. Despite the severity of this issue, there is limited literature addressing the outcomes of patients who undergo inappropriate surgery for cervical cancer, particularly in Bangladesh. Evaluating such patients' clinical course, recurrence patterns, and survival status is critical for understanding the consequences of mismanagement and emphasizing the importance of early, accurate diagnosis and appropriate referral to specialized centers. This study aims to evaluate the short-term outcomes of patients who underwent inappropriate surgery for cervical cancer, with follow-up data collected over a period exceeding one year.

METHODOLOGY & MATERIALS

This retrospective observational study was conducted to assess the short-term clinical outcomes of patients who underwent inappropriate surgical interventions for cervical cancer. The study occurred at the Department of Gynecological Oncology at Bangabandhu Sheikh Mujib Medical University (BSMMU) and Central Hospital, Dhaka, Bangladesh. Data were collected over four years, from January 2016 to December 2019. A total of 20 female patients were included, all of whom had histopathologically confirmed cervical cancer and had undergone inappropriate surgical procedures such as total or subtotal hysterectomy either before or without a definitive oncologic diagnosis at various healthcare facilities across Bangladesh. Each patient demonstrated disease recurrence at least one year following the initial surgery, meeting the criteria for short-term outcome evaluation.

Inclusion Criteria:

- Patients of any age who had undergone inappropriate surgeries (e.g., total abdominal hysterectomy with bilateral salpingo-oophorectomy, subtotal hysterectomy, or other non-radical

procedures) for presumed benign or unclear cervical conditions.

- Histologically confirmed diagnosis of cervical cancer made postoperatively.
- Availability of complete clinical documentation, including demographic data, presenting symptoms, parity, cancer staging, surgical details, and follow-up records.

Exclusion Criteria:

- Patients who received appropriate radical surgery for cervical cancer based on oncological guidelines.
- Incomplete clinical, surgical, or histopathological records.
- Coexisting malignancies other than cervical cancer.

Operational Definition:

"Inappropriate surgery" was defined as any non-oncologic surgical intervention (e.g., non-radical hysterectomy) performed for cervical cancer without prior histopathological confirmation of malignancy or in the absence of proper staging and oncologic planning. Short-term outcomes were assessed in patients with at least one year of postoperative follow-up, focusing on recurrence, residual symptoms, and survival.

Data Collection:

Data were collected retrospectively from patient medical records and histopathology reports using a structured data collection form. The collected variables included demographic information such as age and parity, along with detailed clinical presentations, including abnormal vaginal bleeding, pelvic pain, foul-smelling vaginal discharge, and other gynecological symptoms. A gynecologist general surgeon or whole-body surgeon did surgery. Surgery was done inside of the city or outside the city. Surgical data encompassed the type of procedure performed, the clinical indication for surgery, and the extent of tissue removal. Postoperative outcomes were also documented, including any complications, disease recurrence, adjuvant therapies such as chemotherapy or radiotherapy, completion of surgery, and the patient's survival status at follow-up.

Statistical Analysis:

Data were compiled and analyzed using IBM SPSS Statistics version 26. Descriptive statistics were applied to summarize demographic and clinical characteristics. Categorical variables were presented as frequencies and percentages. Relevant variables such as type of surgery, parity, and presenting symptoms were cross-tabulated to explore potential associations with clinical outcomes. Due to the limited sample size, inferential statistical tests were not applied.

RESULTS

The analysis of patients who underwent inappropriate surgery for cervical cancer (n=20) reveals several important demographic and clinical characteristics. As shown in Table 1, most patients were aged between 45–55 years (35%), followed by 56–65 years (30%), with only 10% being 46 or younger, indicating that middle-aged and older women were more frequently affected. Table 2 shows that the majority had high parity, with 45% having 6–8 births and 25% having eight or more, suggesting a possible association between high parity and cervical cancer in these cases. In terms of clinical presentation (Table 3), the predominant symptom was vaginal bleeding (70%), followed by vaginal discharge (15%), pelvic pain (10%), and other

symptoms like anemia (5%), indicating that abnormal vaginal bleeding was the most common warning sign. Regarding the surgical interventions (Table 4), 70% underwent a total abdominal hysterectomy with bilateral salpingo-oophorectomy, and the remaining had either subtotal or vaginal hysterectomies (each 15%), highlighting a trend of overtreatment or mismanagement. Finally, Table 5 shows that all patients required adjuvant chemo/radiation, and half underwent re-operation to complete the correct treatment. Only 40% were alive and disease-free post-treatment. In comparison, 10% died within a year, and another 10% were lost to follow-up, emphasizing the negative impact of inappropriate surgical interventions on clinical outcomes.

Table 1: Age Distribution of Patients Who Underwent Inappropriate Surgery for Cervical Cancer (n = 20)

Age Group (Years)	Frequency (n)	Percentage (%)
≤46	2	10.00
45-55	7	35.00
56-65	6	30.00
>65	5	25.00
Total	20	100.00

Table 2: Parity Distribution among Patients with Cervical Cancer Who Received Inappropriate Surgery

Parity (Number of births)	Frequency (n)	Percentage (%)
3-5	6	30.00
6-8	9	45.00
≥8	5	25.00
Total	20	100.00

Table 3: Presenting Symptoms Reported by Patients before Inappropriate Surgery for Cervical Cancer

Symptoms	Frequency (n)	Percentage (%)
Vaginal Bleeding	14	70.00
Vaginal Discharge	3	15.00
Pelvic Pain	2	10.00
Other (e.g., anemia)	1	5.00
Total	20	100.00

Table 4: Types of Inappropriate Surgical Procedures Performed on Cervical Cancer Patients

Symptoms	Frequency (n)	Percentage (%)
Total Abdominal Hysterectomy with Bilateral Salpingo Oophorectomy	14	70.00
Subtotal Hysterectomy	3	15.00
Vaginal Hysterectomy	3	15.00
Total	20	100.00

Table 5: Clinical Outcomes of Patients after Inappropriate Surgery for Cervical Cancer

Outcome Category	Frequency (n)	Percentage (%)
Required adjuvant chemo/radiation	20	100.00
Re-operated (Completion surgery done)	10	50.00
Alive and disease-free	8	40.00
Died within 1 year	2	10.00
Lost to follow-up	2	10.00

This study highlights the detrimental outcomes associated with inappropriate surgical management of cervical cancer, emphasizing the urgent need for adherence to established treatment protocols. The

DISCUSSION

findings demonstrate that a significant proportion of patients who underwent improper surgeries, such as non-radical hysterectomies, experienced suboptimal outcomes, including disease progression, the need for re-operation, and poor survival rates. The demographic characteristics of the cohort underscore that cervical cancer inappropriately managed through surgery predominantly affected middle-aged and older women, with 65% of cases occurring in those aged 45–65 years. This age distribution is consistent with global epidemiological data, which indicate that cervical cancer incidence peaks in women aged 35–55 years [1]. Furthermore, the observed high parity among patients notably the 70% with six or more childbirths supports evidence suggesting that multiparity is a recognized risk factor for cervical cancer. Repeated cervical trauma during childbirth may increase the risk of persistent human papillomavirus (HPV) infection, which is a necessary cause of cervical cancer [11]. Clinically, the most common presentation in this cohort was abnormal vaginal bleeding (70%), a typical symptom of cervical cancer, especially in advanced stages [3]. However, despite clear clinical indicators, inappropriate surgical interventions were performed in all patients. Seventy percent underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy an operation typically reserved for benign gynecologic conditions or early-stage, well-staged cervical cancer [12]. The remaining patients underwent either subtotal or vaginal hysterectomies, procedures that are contraindicated in invasive cervical cancer due to their failure to achieve adequate oncologic margins and lymph node assessment. A critical consequence of these misguided surgeries was the need for subsequent adjuvant therapy in all patients. Radiation and/or chemotherapy were required to compensate for the incomplete surgical excision and to address residual or metastatic disease. Notably, 50% of the necessary cohort re-operations reflect both the physical and psychological burden of undergoing multiple invasive procedures. Moreover, only 40% of patients were alive and disease-free after one year, a stark contrast to the significantly better outcomes reported in patients managed appropriately according to stage-based guidelines [13]. The 10% mortality rate within one year and 10% loss to follow-up further reflect systemic failures in diagnosis, staging, and continuity of care. This study's findings align with previous literature emphasizing the dangers of inappropriate management of cervical cancer. Studies have shown that non-radical or non-staging-based surgeries can compromise oncologic outcomes and increase morbidity [14]. The necessity of a multidisciplinary approach, accurate staging (preferably with MRI or EUA), and adherence to evidence-based protocols is paramount in cervical cancer care to prevent such adverse outcomes.

Limitations of the study:

The small sample size (n = 20) restricts the generalizability of the findings and may not fully represent the broader population of cervical cancer

patients. Additionally, as a retrospective study, it is subject to inherent biases such as incomplete documentation and reliance on existing medical records. The follow-up period, although exceeding one year, may still be insufficient to capture long-term outcomes, including late recurrences or complications.

CONCLUSION AND RECOMMENDATIONS

This study underscores the serious consequences of inappropriate surgical management in cervical cancer. A majority of patients underwent non-radical or misapplied hysterectomies, leading to poor outcomes, including disease persistence, need for re-operation, and high reliance on adjuvant therapy. Only 40% achieved disease-free survival after one year, while 20% experienced either death or were lost to follow-up. These findings highlight the need for proper diagnosis, accurate staging, and adherence to established treatment protocols.

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