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Geriatric patients with gynecological malignancy: our surgical experience

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ABSTRACT

Objectives: Global improvements in health care and an increased life expectancy have led to a significant increase in the geriatric population. Because the prevalence of comorbidity increases with age, when confronted with a geriatric patient, there is common tendency to avoid radical surgery. However, new developments in the field of anesthesiology, peri-operative care and surgical techniques have modified the scenario. The aim of our study is to analyze the distribution of gynecological malignancy among geriatrics, to evaluate the surgical feasibility and outcome in terms of operative morbidity. **Methods:** In a retrospective analysis, we evaluated tumor site, comorbidities, details of surgery, intra operative and post operative morbidity and mortality for women (≥ 65 years) operated on for gynecological malignancies at the department of Gynecologic Oncology, Gujarat Cancer & Research Institute from January 2008 to December 2011.Results: In 153 patients, 7 patient were operated for cervical, 85 patients for ovarian, 33 patients for endometrial and 28 patients for vulvar cancer. Co-morbid illness was found in 58.82% patients. Overall intraoperative and postoperative morbidity was encountered in 1.3% and 10.46% patients respectively**, Conclusion:** Our study suggests that radical surgery is reasonably feasible and well tolerated by geriatric patients with an acceptable incidence of complications, in specialised units. The presence of routinely encountered co-morbid conditions should not deter us from providing curative treatment in this age group, but aggressive perioperative monitoring should be used for these patients. Improving clinical outcome and preserving quality of life both must be priorities even in geriatric cancer patients.

Keywords: Geriatric patient, Gynecological malignancy, surgery

Introduction

During the past half decade, global improvements in health care and an increased life expectancy have led to a significant increase in the number of geriatric population worldwide [1-5]. The definition of 'elderly' is controversial, with traditional demographic definitions including those patients exceeding 65 years of age. Census statistics show that this group represents about 12.5% of the population, although this proportion is expected to rise to near 40% by the year 2035 [6]. Geriatric women are at high risk of developing gynecological cancer [1, 7, 8]. Thus, the gynecologic oncologist will face an increasing proportion of geriatric patients in the near future [4, 9]. Surgery is, in many instances, the cornerstone for treatment of cancer patients at any age. However, because the prevalence of co morbidity increases with age, serious concern often exists as to the feasibility of major surgical treatment in geriatric patients. When confronted with an elderly patient with gynecologic cancer, radical surgical procedures are still regarded with fear and caution [4,9,10]. Patients with carcinoma cervix may be referred for radiation therapy and those with ovarian malignancy may be referred for chemotherapy with palliative intent from the outset and some may be offered palliative care only. Surgery in geriatric patient has experienced a great development over the past decades because of the better understanding of the aging process and tumorigenesis. In addition, due to new developments in anesthesiology, perioperative medical care, and surgical techniques, the exclusion criteria for surgery in geriatric patients have been reduced and the operative safety and rate of operability has been increased [1-5, 9, 11]. In addition, most elderly patients want the best available treatment for

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their cancer, despite their age [2]. Therefore, in our institution we consider that age alone is not a contraindication for surgery. Contrary to popular opinion, geriatric patients tolerate radical surgery remarkably well, provided they are medically fit for anesthesia [4, 12].The aims of the current study were to analyze in the geriatric patients who underwent surgical procedures: clinical features of the patients, the technical features of the procedures, and the outcome in terms of operative morbidity and mortality.

Material and methods

In a retrospective study, we evaluated patients aged 65 years or older, who underwent surgery for gynecological malignancies between January 2008 to December 2011 at the Department of Gynecologic Oncology, Gujarat Cancer & Research Institute.Clinical and surgical data were collected from patient charts and the following variables were recorded: age, weight and height, site and stage of the tumor, associated diseases, previous chemotherapy and radiotherapy, type and duration of surgical procedures and anesthesia, preoperative and postoperative hemoglobin counts, blood transfusions, intraoperative and postoperative morbidity, mortality and hospital stay. A complete history was taken and thorough physical examination of each patient was done. All patients underwent preoperative routine blood investigations, a chest x-ray examination, electrocardiography, 2-D echocardiogram and a thorough cardiological evaluation. Before surgery, the anesthetic risk was evaluated by the Standard Physical Status Classification System of American Society of Anesthesiology (ASA). Body mass index (BMI) was calculated and women with BMI $\geq$ 30 kg/m^2 were considered obese [2]. All surgeries were performed under close cardiovascular monitoring and postoperative surveillance in an intensive care unit.Stage was determined according to the International Federation of Gynecology and Obstetrics (FIGO) staging criteria [3, 9].We calculated patients' distribution by tumor site, clinical and surgical characteristics and evaluated the results of surgery on the entire series. Statistical analysis was done by Chi Square test at 95% significance level.

Results

We analyzed 153 patients aged 65 years or older who underwent surgery at our department from January 2008 to December 2011.The distribution of patients by age, tumor site, stage of disease, obesity, presence of associated diseases and ASA physical status classes is presented in Table 1. The mean age of the elderly group of patients was 69±5.19 years (range 65-87). 55.56% of the elderly group had ovarian tumor, 21.57% endometrial, 4.58% cervical and 18.30% vulvar cancer. Overall, 46 patients (30.07%) were given some neo-adjuvant treatment. Forty five patients (29.41%) of ovarian cancer underwent neo-adjuvant chemotherapy (CT). One patient (0.65%) of vulvar cancer underwent preoperative concomitant chemo-radiotherapy (CT-RT) as vulvar lesion was involving urethra. The type and frequency of the comorbid conditions are summarized in Table 2. The most common problem was hypertension (50.98%). Type of anesthesia during surgical procedure is enumerated in table 3. Seventy five patients (49.01%) were operated under combined epidural and general anesthesia, 49 patients (32.02%) under general anesthesia, 26 patients (16.99%) under combined epidural and spinal anesthesia and in 3 patients (1.96%) spinal anesthesia was used. Given the heterogeneous nature of the series, several types of operation were performed. The type and frequency of each surgical procedure are detailed in Table 4. Overall, a systemic lymphadenectomy was performed in 86 patients (56.21%). Nine cases (5.88%) were deemed inoperable. Among them 6 cases were of carcinoma ovary, 2 cases were of carcinoma cervix and 1 case was of endometrial cancer.The surgical parameters are presented in Table 5. Average operative time was 172.78 minutes and blood loss was approximately 252.45 ml. In only 1 patient, there was delayed recovery from anesthesia. She was kept on ventilator for 4 hours postoperatively. She recovered on same day after intensive ICU care. One patient developed respiratory depression intraoperatively but was managed vigorously by anesthetist and recovered from it during the surgery itself.Post operative complications are summarized in table 6. In the present study, superficial wound dehiscence was reported in 18 (11.76%) of patients and 2 (01.31%) patients had total wound dehiscence. Febrile morbidity occurred in 14 patients (9.15%). Four patients (2.61%) who developed breathlessness in the post operative period were managed by medical therapy and intensive physiotherapy. Of the 4 (2.61%) patients who had dypnoea preoperatively, only one developed significant breathlessness requiring intensive physiotherapy in postoperative period. Three patients (1.96%) who developed paralytic ileus in their postoperative period were treated conservatively by correcting electrolyte imbalance. One patient (0.65%) was suspected to have pulmonary embolism. After investigations and intensivist's opinion, she was treated with anticoagulant therapy and adjuvant symptomatic treatment, leading to a complete recovery. The one

patient (0.65%) who developed Deep Vein Thrombosis (DVT) had not been given anticoagulant therapy in postoperative period. She was managed with anticoagulant therapy. One (0.65%) patient was diagnosed with intraperitoneal hemorrhage and was re-explored on the second postoperative day. No obvious source of bleeding could be located and the patient did well after this. Four patients (2.61%) required post operative ventilator support in the immediate postoperative period (within 14 days of surgery). All four were on ventilator support due to peritonitis, Acute Renal Failure (ARF) or septic encephalitis. There was no association between radicality of surgery and need for ventilator support. In the whole series, no patient died during surgery or in the postoperative period.

Discussion

Our results support the view, already reported by others [8,11,13,14] that in elderly patients with gynecologic malignancies surgical treatment should not be withheld based only on chronologic age. In addition, our experience suggests that definitive surgical treatment is feasible and well tolerated. Obviously the greatest surgical finesse is required in these patients. Although it has not influenced intra-operative morbidity in the series, we have observed that tissues are more friable with loss of pliability. Awareness of these and extra care will reduce the postoperative complications. Careful perioperative monitoring is mandatory in these patients. In particular, caution is advised in the management of elderly patients who have received preoperative radiotherapy and/or chemotherapy [11].It has been reported that aging produces a multitude of physiologic changes that require perioperative consideration. Cardiovascular and pulmonary changes in the elderly include loss of tissue elasticity and decreased physiologic function and organ reserve [3,7]. Obesity and prevalence of medical conditions may compound these problems. A preoperative assessment is useful to identify factors associated with increased risks of specific complications and to recommend a management plan that minimizes the risks. Each person should be assessed individually, and judgments should be based on an individual's performance status, not on chronological age alone [7,15,16].In our series, 90(58.82%) patients had one or more co-morbidities. Among them, hypertension complicated 50.98% of the admissions. Medical & anesthetic consultation was mandatory in all admissions. Preoperative cardiac consultation and determination of pulmonary function was performed in all cases. Chest physiotherapy was explained and initiated preoperatively so that it could be performed in immediate postoperative period. The management of perioperative pulmonary problems in elderly patients is of particular importance in the prevention of morbidity and mortality [7]. Four patients (2.61%) had respiratory problems preoperatively in our study. Only 1 of these patients (0.65%) developed dyspnoea in the postoperative period despite treatment. She improved with medical management and vigorous physiotherapy. We preferred to maintain hemoglobin level > 11 gm%. Fluid and electrolyte balance is very important in these patients [7]. Preoperative electrolyte imbalance should be corrected, though this was not a problem in our series. Intraoperative fluid overload must also be avoided. The elderly patient may also experience an increased sensitivity to anesthetic agents as a result of decreased clearance by the lungs, livers or kidneys. Less medication is usually required to achieve a desired clinical effect and drug effect is often prolonged [7]. In elderly patients, shock is insidious, easily produced and recovery is slow; hence intra-operative hypotension should be avoided [14,15]. Preoperative co-morbid disease is a greater determinant of postoperative complications than anesthetic management. Perioperative care should be tailored to co-morbid diseases and requirements of the surgical procedure [7]. In our study, only one patient with ASA class III status had delayed recovery from anesthesia and required ventilator support. She recovered after intensive ICU care on the same day. Of the 153 patients, 9 (5.88%) proved surgical unresectable. Radical surgeries were performed in the remaining 144 (94.12%) patients, including systemic lymphadenectomy in 56.21% patients. The post operative complication rate was 10.46%, which is comparable to that reported in other studies that ranged from 17% to 29% [1, 2, 4,8,9,11,14]. Introduction of new surgical techniques, as well as the advances in perioperative care, may account for acceptable low morbidity rate. In particular, the use of coagulator forceps and hemoclips for meticulous hemostasis resulted in a relevant reduction of blood loss and operative time. In our study the average blood loss was 252.45 ml and average operative time was 172.78 minutes (60-300 minutes). Avoidance of intra-abdominal drain unless deemed necessary, and early removal of urinary catheter reduced postoperative discomfort and facilitated early ambulation [2,11]. In our study, early ambulation was encouraged in all patients. Early postoperative ambulation resulted in decreased incidence of pneumonia, circulatory failure & pulmonary embolism. Early ambulation, frequent change of position and deep breathing was vigorously

encouraged. Adequate pain relief in postoperative period was maintained [14,15]. Elderly patients are more prone for deep vein thrombosis and pulmonary embolism [15]. Depending on patient's mobility, clinical condition, baseline risk factors and nature of surgery, use of low dose heparin for prevention of thrombi was individualized during the study period [14,15]. Since then DVT prophylaxis is a routine practice in our institute. It is known that radical gynecologic surgery is associated with major infectious morbidity because of extensive surgical trauma and bacterial contamination from the vagina. In our study routine prophylactic preoperative antibiotic administration along with strict surgical asepsis reduced the incidence of superficial and total wound dehiscence (13.07%) which is comparable with 8% -13 % incidence reported by other authors [4,8,11]. When we correlated postoperative complications with various factors demonstrated in Table 7, increased morbidity was found in patients who had received neo-adjuvant therapy and with advanced disease stage. Co-morbid conditions surprisingly were not found to increase the post-operative complications. In the study by Patrizia De Marzi *et al*, correlation between preoperative co-morbidities and the rate of perioperative complications did not reach a statistical significance [9].This is in contrast with study by other authors [1, 2]. They demonstrated a significant correlation between severe postoperative co-morbidities and major postoperative complications [1].There was no perioperative/postoperative mortality in our study. This result compares with those found by other published study [1, 8, 9, and 11].In addition to physiologic changes; the psychologic aspects of the elderly female patient with cancer must be considered. These patients require patience, repeated explanations and clarification of procedures and reassurance. Our patients were in positive mindset, willing to undergo surgical procedure and were very cooperative. In light of the escalating costs in all areas of medicine, it is also important to consider the financial implications of treating the elderly patient with gynecologic cancer [14].Krischner CV *et al* have delineated five principles of good geriatric care. These are familiarity with the specific medical problems of the elderly, restoration of functional capacity, allowance of time for healing of older tissues, avoidance of iatrogenic illness and consideration of social, familial, financial and psychological factors [14].Our study reinforces the idea previously set forth by others that primary surgical treatment should not be denied to elderly patients with gynecological cancers [11].Limitations of our study include its retrospective design, relatively small size, the heterogeneity of the patient population and the referral bias in a tertiary treatment centre. However selection bias with respect to treatment protocols was minimal because this study included all patients with invasive gynecologic cancer referred over the study period, all of whom were evaluated by the same consultants [8, 17]. Strength of our study is that in our institute we had advantage of new development in the field of anesthesia, perioperative care and surgical techniques. Management is done in multidisciplinary manner with the help of physician, pulmonologist, intesivist, physiotherapist, gynecologic oncologist, intensive ICU care and trained nurses. These all together probably led to reduction in surgical exclusion criteria, increased general safety and rate of operability.

Conclusion

It is clear that the elderly population with gynecologic cancer is increasing rapidly [16]. This study demonstrates that, in specialized units, surgical treatment for gynecologic cancer is feasible & well tolerated with an acceptable incidence of complications. Selection for radical surgical procedure should not be based on chronological age but on the patient's performance status [10]. It should be remembered that radiation and chemotherapy, which are frequently considered more appropriate therapeutic options in the elderly, are actually associated with a high rate of severe complications and treatment-related deaths in this age group [10,11,16]. The presence of routinely encountered co-morbid conditions should not deter us from providing curative treatment to patients in this age group [10]. However surgical acumen & careful perioperative monitoring with a multidisciplinary approach are essential for these patients [5, 8, and 10]. Our findings support the conclusions of the other studies that optimal patient care should depend on good medical and surgical judgment and individualization of treatment and not on age [3, 8,9,11,14]. Improving clinical outcome and preserving quality of life must both be priorities in elderly cancer patients [10, 17]. Emphasis is now on cure, not on palliation. As the field of geriatric oncology evolves, our aim is to develop a subspecialty for cancer in the elderly

Table 1: Patient characteristic

Patient Characteristic	No. (%)
Age (years)	**69±5.19 (65-87)**
Tumor site	
Ovary	**85 (55.56)**
Uterine corpus	**33 (21.57)**
Cervix	**7 (04.58)**
Vulva	**28 (18.30)**
Tumor stage	
Early	**87 (56.86)**
Advanced	**66 (43.14)**
Obesity	**31 (20.26)**
Co morbidity	**90 (58.82)**
Preoperative/neo-adjuvant treatment	**46 (30.07)**
ASA physical status	
Class II	**111 (72.55)**
Class III	**42 (27.45)**

Table 2: Co morbid illness

Co morbidity	No. (%)
Cardiovascular	
Hypertension	**78 (50.98)**
Others	**07 (04.58)**
Metabolic	
Diabetes Mellitus	**18 (11.76)**
Thyroid Dysfunction	**01 (0.65)**
Respiratory	**04 (02.61)**
Renal	**02 (01.31)**
>2 associated co morbid conditions	**21 (13.73)**

Table 3: Type of anesthesia during surgical procedure

Type of anesthesia	No. (%)
Epidural + General	75(49.01)
General	49(32.02)
Epidural +Spinal	26(16.99)
Spinal	03(01.96)

Table 4: Surgical procedures

Procedures	No. (%)
Radical Type 3 Hysterectomy with Bilateral Pelvic Lymph Node Dissection	**5 (03.27)**
Staging laparotomy for endometrial cancer	**32 (20.92)**
Staging/ Cytoreductive surgery for ovarian cancer	**35(22.86)**
Interval cytoreduction for ovarian cancer	**44(28.76)**
Radical Vulvectomy	**3 (01.96)**
Radical Vulvectomy + Bilateral Inguinofemoral Lymph Node Dissection	**25 (16.34)**
Inoperable	**9 (05.88)**

Table 5: Surgical parameters

Parameters	No. (%)
Operative time (min.)	**172.78 (60-300)**
<90	**05 (3.27)**
90-119	**09 (5.88)**
120-179	**57 (37.25)**
180-240	**52 (33.99)**
>240	**30 (19.61)**
Intra-operative surgical complication	**-**
Intra-operative anesthetic complications	**2 (1.31)**
Blood loss (ml)	**252.45 (50-800)**

Table 6: Post operative complications

Complications	No. (%)
Wound dehiscence (superficial)	**18 (11.76)**
Wound dehiscence (total)	**02(01.31)**
Febrile morbidity	**14 (09.15)**
Respiratory Problem	**04 (02.61)**
Paralytic Ileus	**03 (01.96)**
Acute Renal Failure	**02 (01.31)**
Cardiac Problem	**02 (01.31)**
Deep Venous Thrombosis	**01 (0.65)**
Intestinal obstruction	**01 (0.65)**
Relaparotomy	**01 (0.65)**
Peritonitis	**01 (0.65)**
Pulmonary embolism	**01 (0.65)**
Septic Encephalitis	**01 (0.65)**

Table 7: Post cooperative complications correlation with various factors

Post Op complications correlating factors	p value
Co Morbidity	**0.066**
Stage	0.030
Neo-adjuvant CT/RT	0.000

- p>0.05. i.e. "There is no correlation between Post Op Complications and Co Morbidity of patients." i.e. Co Morbidity of patients do not effect on Post Op Complications significantly.
- p<0.05. i.e. "There is correlation between Post Op Complications and Stage of patients." i.e. Advanced Stage patients have more Post Op Complications then Early Stage patients.
- p<0.05. i.e. "There is correlation between Post Op Complications and Pre Op Treatment." i.e. Pre Op Treatment effect on Post Op Complications significantly.

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