

Impact of Pre-Operative Walking on Post- Operative Bowel Function in Patients with Gynecologic Cancer.

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Abstract

Aim of the Study

It was observed in multiple cases that walking before surgery had positive impacts upon the recovery and bowel functions of patients who went through gynaecological cancer. Patients who walked before their surgery showed less chances of post-operative paralytic ileus. As walking was found an effective act before and after surgery, so a study was made to understand it precisely.

There is a paucity of data and research papers that defines the association of walking with bowel movements and either it impacts the post-operative gastrointestinal functions in patients who are treated for gynaecologic cancers or not. For this purpose, a randomized trial was made from February 1st, 2019 to August 31st, 2019. All patients, which were included in the study, were diagnosed with endometrial/ ovarian cancer. Patients were divided into groups; those who did not walk one last night before surgery and those who walked for at least 30 minutes a night before surgery.

After studying their conditions, this research paper was compiled up to give an overview of the impacts of walking.

There is a paucity of data on whether

A total of 85 patients were enrolled: 43

Walking before surgery is associated with faster recovery of bowel function after surgery for malignant gynecologic

Introduction

Post-operative paralytic ileus is a condition that occurs after gynaecologic cancer surgery. In this condition patients faces, abdominal distension, oral intolerance, vomiting, delayed defecation and flatulence. If a patient's stay in hospital is prolonged then that person is vulnerable to many other infectious diseases as well, like thrombosis, pulmonary compromise and associated issues. ¹ the post-operative ileus can occur in patients who have undergone surgery for malignant gynaecologic cancer. The risk rate for catching this issue ranged from 13% to 33.2% after the operation. ¹

A number of strategies were summarized to manage healthy bowel functioning in patients like, gum chewing, adequate pain control, epidural anesthesia, coffee consumption, minimal invasive surgery, administration of drugs like erythromycin, neostigmine, metoclopramide and alvimopan, euvolemia, prophylactic nasogastric tubes, assurance of normal salt to electrolyte balance in pre-operative period and the immediate start of food and drink consumption after surgery. ^{2,3}

In the study of association of walking with the bowel functioning in patients, the enhanced recovery after surgery (ERAS) guidelines in gynaecologic oncology were used to accommodate

the return of patient to daily life's routine activities. In these guidelines, post-operation activities like eating

meals on proper time in a chair, staying out of bed 8 hours/ day and ambulation eight times a day. ⁴

However, a systematic review of some medical literatures revealed that no proper and extensive study was done before on the effects of walking on gastrointestinal functions of patients who have gone through surgery of gynaecologic cancer. Therefore, this paper was compiled up to throw the light on the benefits and positive impacts of walking at night before surgery, and to prevent issues like post-operative paralytic ileus.

Modus Operandi

A randomized survey was carried out from February 1st, 2019 to August 31st, 2019 after gaining approval from the Committee of Ethics of the hospital, along with the permission of patients who were added in the list. A written consent was signed by them and was also submitted in the archives of hospital for safety.

An appropriate medical history layout was designed and patients' data was added to make list of those who were going to be a part of this survey and who were not. Patients who were diagnosed with ovarian cancer and scheduled for surgery were recruited. Patients who had chronic constipation issues, cervical cancer, inflammatory bowel diseases, compromised liver functions, irritable bowel syndrome, thyroid disorder, orthopedic problems linked with issues in walking, cardiac arrhythmia, past abdominal irradiation, a history of abdominal bowel surgery, neoadjuvant chemotherapy, hyperthermic intra-peritoneal chemotherapy and had a previous history of the use of multi visceral approach for debulking surgery, then they were excluded from the list. Additional exclusion criteria was set for those who had early complications during the first week of surgery like massive blood transfusion and re-laparotomy, intensive medical care for less than 24 hours post-surgery, bowel anastomosis and requirement for nasogastric tube drainage during the operation.

The survey design, its all aspects and charts were discussed with all enrolled patients. The study started as soon as the patients were admitted to the hospital for gynaecologic oncology treatment. Patients were randomly assigned to 2 groups by the researchers. Group A consisted of those patients who didn't walk regularly as per instructions last night before an operation. While, group B had those patients who walked for 30 minutes with an average speed of 3km per hour from 8:00pm to 8:30pm and 9:30pm to 10:00pm, a night before surgery under the nurse supervision.

A step counting wrist watch was also assigned to all patients that aided in counting all the steps taken by them 24 hours before surgery. A standard clinical protocol was started after registration for ERAS. Patients who were scheduled for surgery, were given a proper meal that complied with the clinical protocol. The diet included light meal given before 8 hours of surgery, and clear fluids, including carbohydrate drinks 2 hours before anesthesia initiation. Patients' bowels were not mechanically prepared, they received low molecular weight heparin last night before surgery and at the time of incision, intravenous antibiotics were also administered. Anesthetic protocol, which included intravenous insertion of propofol and tracrrium, and inhalation via epidural catheter analgesia of nitrous oxide and sevoflurane, were used in all the patients. Same team took care of all the surgical operations. The post-operative procedures included the treatment with stress gastric ulcer prophylaxis in form of H2 histamine blockers, low molecular weight heparin, and prokinetic agent metoclopramide as antiemetic agent 8 hours after the surgery. Fluids were also given after an operation at a rate of 40 ml/ hour and fluid bolus of 250- 500 ml for proper urine output.

Results

During the study, total 90 patients were added. 45 were added in Group A who did not do any walking, and 45 were added in Group B who walked last night before surgery. 5 patients were excluded after randomization, 2 from the control group and 3 from the treatment group, because they did not comply with the clinical protocol and criteria.

Some patients faced abrupt issues in the control group, one had bowel injury during operation, other had massive bleeding in the walking group, one patient had thromboembolic event, one faced excessive bleeding during operation and third patient faced trocar site hernia. Ultimately, 41 patients were in Group A and 42 were in Group B for further analysis.

After the operation, patients who received prokinetic agents like metochlopramide were 26.1% as n= 11 patients in the control group and in the walking group 19% patients were added, n= 8. The total steps which were counted in both, control and walking group, were 4430 ± 670 and 4620 ± 325 respectively. The outcomes of this study showed that the mean time of first flatus in walking group was shorter than that in the control group. The defecation time in walking group was also shorter in comparison to control group. In addition, the mean time of tolerating solid food was also different in the walking and the control group, 3.5 ± 0.6 days vs 4.3 ± 0.7 days respectively.

A total of 9 patients from the study (walking) group (21%) and 17 patients (41%) from the control group needed extra analgesics. In addition, 15 patients from the control group and 6 from study group required ancillary anti-emetic treatment. The requirements of both the groups showed a significant difference.

Control group showed more frequent ileus symptoms than the walking group. Even 2 patients from the control group

were readmitted to the hospital after 1 month of surgery due to wound infections, 1 patients was readmitted owing to abdominal pain and other issues. Patients who showed no signs of mechanical obstruction and abnormalities depicted the success of conservative therapy.

3 patients from the walking group and 9 from the control group showed mild symptoms. All the patients were treated with fluid administration and fasting to balance their electrolyte abnormalities and anti-emetic pills. In addition, 4 patients from the walking group and 7 from the control group needed insertion of nasogastric tubes for treating gastric depression; these patients were classified in the group of those having moderate post-operative paralytic ileus.

Statistical Representation

Table: Control group and walking group, outcomes of the survey conducted on patients

Outcome	Control Group n= 45	Walking Group n= 45
Mean time of first flatus	41 ± 16.9	32.5 ± 11
Mean time of 1 st bowel movement	40 ± 17	33 ± 15
Mean time of 1 st defecation	90 ± 51.2	62 ± 27
Mean time of solid food digestion	4.3 ± 0.7	3.5 ± 0.6
Hospital stay	9.2 ± 5.8	7 ± 4.3
Additional analgesic requirements	17	9
Readmission to hospital	1	2
Additional	15	6

antiemetic requirements		
Ileus symptoms		
Mild	9	4
Moderate	8	4
Severe	3	0

Discussions

This randomized controlled study depicted that walking before gynaecologic cancer surgery played a significant positive role in shortening the time to bowel movement and ability of tolerating/ digesting food.⁵ Moreover, keen observation and deep study showed that pre-operative walking also reduces the risk of paralytic ileus associated with post-operation conditions.⁶

The definition of post-surgery paralytic ileus varies from paper to paper, but the general meaning it holds is the absence of intestinal contractions which is responsible for delayed physiological bowel movement.⁸ This problem is common after abdominal and gynaecologic surgeries. Although, this condition (paralytic ileus) is self resolving, but it can be highly uncomfortable and sometimes painful for patients that can lead to multiple other issues. Paralytic ileus double the surgery costs and stay of patient at the hospital.⁸

Conclusion

The study made on patients’ post-operative complications regarding bowel movements revealed so many things. As the study was carried out in one same hospital by with the help of the same team who carried out almost all the surgeries which were on our list, this strengthened the validity of results. As patients were not sedentary and to minimize the bias results, step count wrist watches were assigned to them to carefully monitor each step.

However, study was carefully carried out in both the groups by following the standard protocols. The results

showed that walking before surgery was very helpful in fast recovery, normal bowel functioning and decreasing the risks of post-operation paralytic ileus. Patients who walked more for 30 plus minutes faced less post-surgery complications and issues in digesting solid food. The hospital stay of patients in the walking group was also less in comparison to the control group. Intra-operative complications were also less faced by the patients in the walking group.

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