

Perspectives

Recovery Strategies from the OR to Home

In This Issue

At least half of US population over the age of 65 will undergo a surgical procedure at some point in their remaining lifetime. The high incidence of this occurrence underscores the need for nurses to understand the special needs of elderly men and women in post-operative recovery. Ms. Dixon identifies the specific complications associated of the elderly including poor wound healing and higher risks of infection, respiratory, circulatory and lower GI problems. Ms. Dixon points out that the primary goal in caring for the post-operative elderly patient is the prevention of complications.

Colon and rectal cancers are the third most commonly diagnosed malignancies and third leading cause of cancer death in men and women. An estimated 120,000 new cases of colorectal cancer are diagnosed each year. The five-year survival rate remains less than 50%. Ms. Leafgreen outlines the nursing care for patients with colorectal cancer as a part of a multidisciplinary approach that meets the needs of patients and caregivers.

Omission: The illustration appearing in Dr. Gray's article (Vol.2, No.2) was reprinted from Pontieri-Lewis, V, Vates, TS. *Med Surg Nursing* Vol. 2, No.5, Oct. 1993

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Post-operative Complications and the Older Adult

By Lois Dixon, MSN, RN

Maxine Windish, 74, who lives alone in her own home, has been ill for several weeks. She has entered the hospital with a diagnosis of endometrial (uterine) cancer. She has a history of chronic obstructive pulmonary disease (COPD), for which she takes multiple medications. After a total abdominal hysterectomy, she returns to your surgical unit.

About 50% of people over the age of 65 will have surgery at some point in their remaining lifetime. This number underscores the need for nurses to understand the special needs of aging men and women who have and are recovering from surgery. One of nurses' primary goals in caring for the post-operative patient is to prevent complications. The physiologic changes that occur during the normal aging process places the older adult at increased risk for the development of post-operative complications (see Table 10). This article will discuss the physiological changes of aging, identify important assessment parameters, and discuss nursing interventions for the management of post-operative complications in the elderly.

Poor wound healing

Etiology

The aging process alters all phases of wound healing. Vascular changes impair circulation to the wound site. Reduced liver function alters the synthesis of clotting factors. The inflammatory response slows. The formation of antibodies and lymphocytes is reduced. Collagen and scar tissues are less pliable and elastic.¹ These changes lead to prolonged or delayed wound healing.

Older adults are often in poor nutritional health as a consequence of dependency or disability, social isolation, and inappropriate or inadequate food and fluid intake. Protein-energy malnutrition is the most underdiagnosed nutritional disorder worldwide, and the older adult who has been hospitalized for two weeks or longer is at highest risk. The inadequate intake of nutrients for tissue growth and repair contributes to poor wound healing.

Nursing care

Peripheral vascular status should be assessed concurrently with the skin assessment. Decreased peripheral vascular sup-



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Care of Patients with Colorectal Cancer

By Pamela K. Leafgreen, BSN, RN, CWOCN

Colon and rectal cancers are the third most commonly diagnosed malignancies and third leading cause of cancer death in men and women.¹ An estimated 120,000 new cases of colorectal cancer are diagnosed each year. The five-year survival rate remains less than 50%.²

Nursing care for patients with colorectal cancer is part of a multidisciplinary approach that meets the needs of patients and caregivers.

Etiology

The cause of colorectal cancer remains unknown; however, several factors have been identified as increasing an individual's risk of developing the disease. The risk of colorectal cancer increases steadily after the age of 40. Its occurrence is most common in adults of 50 to 80 years of age. Among men, the greatest number of deaths from colorectal cancer occurs from 55 to 74 years of age, in women, from 75 years of age.^{1,2}

Genetic predisposition is found in patients who have been diagnosed with specific hereditary syndromes, including familial adenomatous polyposis (FAP) or Gardner's syndrome. Multiple adenomatous polyps of the colon characterize this syndrome. Colorectal cancer is inevitable in all individuals who are affected. Prophylactic proctocolectomy of the affected colon/rectum is usually completed before colorectal cancers can develop.^{2,3}

A diet high in fat and red meat may increase an individual's risk of colorectal cancer. High-fat diets increase the production and change the composition of bile salts,

which are converted to potential carcinogens by the intestinal flora.¹ A high-fiber diet is thought to reduce the exposure of potentially harmful carcinogens by reducing intestinal transit time and diluting carcinogens in bulky stool.⁴

Diagnosis

Because colorectal cancer often has no outward symptoms, adults easily dismiss it. Initial symptoms may include bloody or tarry stools, a change in bowel habits, anemia, abdominal mass or pain, intestinal obstruction, and unexplained weight loss.^{1,2}

An individual who presents with any of these symptoms should have a diagnostic work-up, which may include laboratory and radiological studies as well as colonoscopy. Fecal occult blood tests are not diagnostic tools, yet they play a role in the detection of early, smaller colorectal lesions. If a fecal occult blood test is positive, it is important to pursue follow-up testing, which may include a barium enema or proctoscopy/flexible sigmoidoscopy.⁵

The staging system for colorectal cancer appears in Table 1.

Treatment

The management of colorectal cancer requires the involvement of a multidisciplinary team of caregivers to ensure the best possible patient outcome.

The primary treatment of choice for colorectal cancer is surgery. Surgical ad-

vances have made laparoscopic techniques possible for colon resection and cryosurgery for metastatic liver disease. After post-operative recuperation, the use of radiation therapy, chemotherapy, and immunotherapy may be prescribed. The use of adjunctive therapy is now recommended to improve long-term patient outcome.¹

The type of operative procedure chosen to treat colorectal cancer depends on the tumor location within the colorectal area and adjacent organ involvement. The procedure of choice for cancer of the cecum or ascending colon is a right hemicolectomy. A transverse colectomy is the procedure of choice for a middle-to-left transverse colon lesion. Cancer of the descending/sigmoid colon is resected by a left hemicolectomy.

Table 1. Staging System for Colorectal Cancer: Modified Dukes' Classification System (GITSG*)

A	Tumor limited to mucosa (carcinoma in situ)
B1	Tumor penetrates muscularis mucosa
B2	Tumor penetrates through muscularis propria (serosa when present)
C1	one to four tumor-involved lymph nodes
C2	Five or more tumor-involved lymph nodes
D	Distant metastases

Resection of a cancer in the rectum depends on the level of the lesion. A cancer in the upper third of the rectum can usually be removed with a low anterior resection (LAR). An abdominoperineal resection is performed when anal sphincter function cannot be preserved and the anus must be removed.^{2,5}

A permanent colostomy is created with an abdominal perineal resection. Selection of the colostomy site is best completed prior to surgery. Preoperative selection may prevent poor stomal placement and facilitate the patient's adaptation to the new stoma.

Preoperative teaching

Preoperative education sessions should include the patient and caregivers. The patient's physician is responsible for explaining the operative procedure and answering any questions. Nursing staff is responsible for reinforcing the information that patients received from their physician and to review

general post-operative expectations, including the number of tubes and holders. (Ed note: The patient should be informed of the many tubes that will be held in place by various tube holders, including IV lines, Foley catheters, nasogastric tube and colostomy bag. If indicated, the application of an abdominal binder may be applied to hold “open wound” dressings in place, and additionally Velcro® straps can secure drainage lines and ostomy bags.

Preoperative preparation includes cleansing of the colon and rectum. While the colon and rectum can never be completely free of bacteria, the goal of cleansing is to reduce the number of bacteria as low as possible.¹ The patient achieves a thorough bowel cleansing by following a low residue or clear liquid diet and drinking an isotonic lavage solution or GoLYTELY. Prophylactic broad-spectrum antibiotics are given at scheduled times on the day before surgery. Intravenous (IV) antibiotics may be ordered prior to the operative procedure on the day of surgery.²

Post-operative care

Nursing care of post-operative patients immediately after a colon resection includes monitoring the patient for signs of post-operative complications, controlling pain, assisting the patient with activity progression, and preparing the patient and caregivers for hospital discharge. Maintaining invasive lines (IV solutions) is also a post-operative concern and the clinician may choose to apply a bendable armboard to prevent displacement of the invasive line.

The patient is generally kept NPO until bowel function returns. A nasogastric (NG) tube is connected to low suction to drain air and fluid from the intestinal tract to prevent distention. Nursing staff should monitor the amount, color, and consistency of NG output. To help prevent NG tube movement, an adhesive-back holder with a releasable locking device can be used for 2 or more days. Holders with adjustable locking tabs are also helpful to keep NG tubes in place. After the return of GI function, the



Fig.1

NG tube may be discontinued. A clear liquid diet is begun, with orders to progress to a soft/general diet.

IV fluid replacement maintains a patient's fluid and electrolyte balance during the post-operative period. Intake and output is recorded every 8 hours. A Foley catheter may remain in place for 4 to 5 days to avoid overdistention of the patient's bladder and to accurately record the patient's urinary output. The application of a Velcro®-type legband holder (Fig. 1) can prevent accidental catheter movement. These holders can be moved from leg to leg to prevent meatal irritation. Electrolytes, especially potassium, are monitored through laboratory draws. IV antibiotics may be administered for 24 to 48 hours post-operatively, unless the patient is exhibiting signs or symptoms of infection.

A Ted® hose with or without sequential compression device (SCD) may be ordered to facilitate venous return and prevent deep vein thrombosis and pulmonary emboli. If prolonged bedrest is anticipated, the patient may be placed on anticoagulant therapy, e.g., subcutaneous heparin.

Early and frequent ambulation is essential to prevent post-operative venous stasis and lung atelectasis. Early ambulation also stimulates the return of GI function.

To provide adequate pain relief, the patient may have a patient-controlled analgesic (PCA) pump or epidural catheter. The latter patient must be evaluated frequently for potential side effects, which may include respiratory depression, sedation, itching, and nausea.

Deep breathing is encouraged every hour. The use of an incentive spirometer may further encourage the patient to deep breathe. An abdominal binder may be used in conjunction with an incentive spirometer to encourage the patient to deep breathe.

If the patient has an abdominoperineal resection, the perineal dressing may need periodic changing due to drainage from the perineal space. Abdominal dressing holders can prevent additional skin trauma and allows for quick dressing changes. A surgically implanted drain may also be in place.

Evaluation of a colostomy stoma should reveal a dark pink or red color. If the stoma turns a dusky color, the physician should be notified, as blood flow may be compromised.⁵

Post-operative complications

Nursing involvement is essential in early detection and intervention to minimize post-operative complications. After surgery for colorectal cancer, these complications may include wound infection, anastomotic leakage, intestinal obstruction, urinary retention, and intra-abdominal abscess.¹

Long-term effects after an abdominoperineal resection may include sexual dysfunction and impotence.¹ Sexual dysfunction may vary from partial to complete and depends on the surgical technique, patient's age, and preexisting medical conditions.^{1,2}

Discharge planning

The average length of stay for an individual who has an operative procedure for colorectal cancer is less than 5 days.¹ Appropriate referrals need to be made at the time of hospital admission. The patient is referred to a Wound/Ostomy/Continence Nurse if he or she will have an abdomino-

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**Post-operative complications –Continued
from page 1**

ply will impair Mrs. Windish's ability to mount an inflammatory response to any wound infection. Mrs. Windish may have problems with wound healing if she shows signs of vascular impairment, such as decreased peripheral pulses, prolonged capillary refill time, or pale and cool extremities.

Normal wound healing requires proper nutrition. The physiological processes of wound healing depend on the ready availability of proteins, vitamins (especially A and C), and trace elements, particularly copper and zinc. For Mrs. Windish, nutritional therapy is especially important. Even when well nourished, she still needs at least 1,500 kcal/day for nutritional maintenance.

A dietitian can assist nurses in planning Mrs. Windish's nutritional intake. Alternatives to oral intake, such as enteral feedings and parenteral nutrition, may be necessary to ensure or maintain adequate food intake. If enteral feedings are required, Mrs. Windish may need a nasogastric or gastrostomy tube. In either case, tube stability may be enhanced with commercially available NG Tube or G-Tube Holders. Skin-friendly adhesive-backed holders are available to hold NG tubes in place. G-tube holders have a soft, comfortable pocket that stores the G-Tube when not in use and lowers the tube profile which can discourage patient "pull-out." (Dale™, Plainville, MA. Fig. 1)

Infection

Etiology

Throughout the lifespan, susceptibility to infection changes. Defenses against infection change with age, as the immune system becomes less effective in warding off invading substances.² As immune competence declines, the incidence of infection increases.³ Homeostatic mechanisms that are important for the older adult's response to infection are often impaired. Some changes include delayed and lower fever responses, decreased cardiac output, decreased concentrating ability of the kidney, and changes in fluid and electrolyte balance.

The occurrence of fever is often delayed by 24 to 48 hours and the older adult's temperature does not rise as high as in a younger adult.⁴ The decline in vascularity also leads to a diminished inflammatory response.

Dehydration is significant problem among older adults. Even minimal deprivation affects bodily functions. Older adults have decreased thirst perception, less voluntary oral intake, and poorer renal-concentrating ability. Illness increases the risk of dehydration and electrolyte imbalance. If nutritional needs are not met within three days of acute illness, the decline in immune, hepatic, and gastrointestinal function appears to contribute significantly to higher morbidity and mortality as well as prolonged hospital stays.

Nursing care

Infection in older adults may not present with typical signs and symptoms. Often, it may be well advanced before identification. Careful monitoring of hydration status is essential. Maintaining the patient's fluid intake prevents or corrects dehydration.

When the nurse offers fluids, Mrs. Windish states that she just can't drink any more. At this point, the nurse should carefully assess the patient's hydration status by looking at I & O records, skin turgor, and mucus membranes. Mrs. Windish may need to continue intravenous fluids in addition to oral fluids to assure adequate intake. Generally, she will need at least 1,500 mL/day just to maintain normal fluid output. This volume is increased if Mrs. Windish develops a fever or diaphoresis.

Mrs. Windish is afebrile, but she has a surgical wound infection that requires frequent dressing changes. Special dressings, such as the Abdominal Dressing Holder make frequent dressing changes less time-consuming for the nurse. The nurse also administers antibiotics and other treatments, watches for adverse reactions, and assesses the progress of infection.

Respiratory Problems

Etiology

Respiratory complications, such as

atelectasis (collapse of the alveoli in lung sections) and pneumonia (acute infection causing lung inflammation), are the more common complications that may occur post-operatively. Pulmonary problems typically develop in the first 48 hours after surgery. Atypical clinical presentations and altered drug metabolism complicate the management of pneumonia in the older adult.

The older adult is at greater risk of developing pneumonia and other respiratory complications because of normal physiological changes that occur with aging. The efficiency and effectiveness of the respiratory system decreases with age. Weakened intercostal muscles, reduced chest-wall elasticity, and less efficient lung emptying reduce the respiratory reserve.⁴ A less effective cough reflex, decreased mucus production, and less capable mucociliary system



Fig. 1

inhibit normal respiratory clearance. A smaller respiratory reserve and clearance, coupled with other diagnoses, such as congestive heart failure and chronic pulmonary disease, heighten morbidity and mortality of respiratory complications in the older adult.⁴

The classic presentation of fever, productive cough, purulent sputum, and tachypnea is not always seen in older adults with pneumonia. Leukocytosis, usually present in bacterial infections, may not exist. The older adult may present with normal or decreased white blood cell (WBC) counts. Infiltrates on chest radiographs may not become apparent, until the older adult receives adequate hydration, and infiltrate resolution often lags behind clinical improvement. A respiratory rate of more than 26 breaths per minute is a reliable indica-

tor of lower respiratory infection among adults older than 60 years of age.⁵ Often, confusion or deterioration in baseline function and the performance of daily activities are the only hallmarks of pneumonia among older adults. Subtle changes, such as a decreased appetite, altered mental status, and change in normal activity pattern, may be the earliest indicators of infection. Other clinical symptoms of pneumonia in older adults are presented in Table 1.

Nursing care

The nurse plays a pivotal role in the prevention and early recognition of respiratory infection. Careful examination of the respiratory system is essential in all patients. Mrs. Windish is at particular risk for respiratory problems because of her long history of COPD. An inspection may reveal thoracic abnormalities, such as scoliosis or kyphosis, which can decrease chest expansion and increase the risk for atelectasis. Careful auscultation of the lungs is important, because early recognition of changes by the type and characteristics of breath sounds, presence of crackles and wheezing, and rate and depth of respirations, can enhance the early recognition of pneumonia. Assessment of subtle changes in mental status, physical functioning, appetite, and behavior may be even more important as early indicators of infection.

Infections like pneumonia increase metabolic and oxygen needs in older adults. Increased heart and respiratory rates normally meet increased oxygen needs. The older adult is not as able to meet these needs effectively, and often hypoxia results. Careful monitoring of Mrs. Windish's vital signs (including pulse oximetry), color, peripheral circulation, and hydration status is essential.

The three pillars of post-operative respiratory care – coughing, deep breathing, and position change – take on special significance in Mrs. Windish's post-operative care. Maintaining hydration will help to thin secretions, enhance respiratory clearance, and lessen the risk of respiratory obstruction. Supporting the incision with a pillow

Body System	Changes	Post-Operative Implications
Skin and connective tissue	Decreased vascularity Loss of collagen	Poor wound healing
Respiratory	Reduced lung elasticity Weakened intercostal muscles Decreased respiratory clearance	Ineffective cough Shallow breathing Increased risk for pneumonia and atelectasis
Cardiovascular	Reduced cardiac output Reduced blood flow	Delayed wound healing Increased risk for DVT Altered response to infection
GI	Decreased intestinal absorption of nutrients Decreased peristalsis Loss of elasticity of abdominal muscles	Dehydration and malnutrition Delayed wound healing Paralytic ileus Intestinal obstruction
Renal	Decreased glomerular filtration rate Decreased concentrating ability	Prolonged drug metabolism and clearance
Hepatic	Diminished blood flow	Prolonged drug metabolism and clearance
Immune	Reduced formation of antibodies and lymphocytes Slowed inflammatory response Delayed fever response	Delayed wound healing Increased risk of infection

or use of an abdominal binder (Dale™; Plainville, MA) will enhance compliance with deep-breathing and coughing activities.

A drop in exercise tolerance is often an early sign of respiratory infection. Reduced mobility will lower respiratory clearance and increase the risk of mucus obstruction. Respiratory excursion diminishes with bed rest and can increase the risk of atelectasis and pneumonia. It will be important to remind Mrs. Windish to reposition at frequent intervals and to encourage early ambulation to help enhance chest-wall expansion and stimulate a higher respiratory rate.

After a diagnosis of respiratory infection, the nurse administers intravenous antibiotics; some improvement in the patient's condition is expected within three to four days. Should Mrs. Windish's condition deteriorate, with no improvement evident on the chest radiogram, antibiotic therapy may be inadequate or inappropriate and require re-evaluation.

Circulatory problems

Etiology

Age-related changes in veins predispose older adults to a slower return of venous blood to the heart, leading to venous stasis and thrombophlebitis.² Major surgery and limited post-operative mobility can set the stage for deep vein thrombosis. Any surgical patient is at risk of developing perfusion problems, but the older adult is at higher risk. Thrombophlebitis usually involves a thrombus of the peripheral veins, particularly the calf veins. It occurs because of direct pressure on venous walls during surgery or due to venous stasis. Post-operative thrombophlebitis generally occurs 7 to 14 days after surgery. The great danger of thrombophlebitis is that a clot will break loose from the venous wall and travel as an embolus to the lungs, heart, or brain.

Nursing care

Early measures aimed at avoiding circulatory complications prevent circulatory sta-

Table 2. Common and Less Common Symptoms of Respiratory Problems in Older Adults*

Common	Less common
Change in mental status	Normal or decreased white blood cell count
Failure to thrive	Fever
Sepsis	Cough with sputum
Falls	Crackles
Tachycardia	Pleuritic chest pain
Tachypnea (rate above 26/min)	Bronchial breath sounds
Concurrent congestive heart failure	
Incontinence	<i>*Adapted from Meck 1997; Fraser 1997</i>

GI motility, not absorption. Even when bowel sounds are absent, the small bowel may be capable of absorbing nutrients. Early enteral feeding after surgeries that do not involve the GI tract can produce a faster resolution of the ileus, fewer post-operative infections,

Nursing care

Although some pain is normal after most surgeries, it can interfere with recovery if poorly controlled. The incisional area may be one source of pain. Irritation from drain tubes, manipulation during surgery, and muscular strain during surgical retraction can make the older patient feel very uncomfortable.

Pain-control measures generally fall within two classifications: pharmacological and nonpharmacological. While there are many nonpharmacological pain-relief measures, e.g. positioning, distraction, and guided imagery, it is the administration of analgesics that poses the higher risk for Mrs. Windish.

Age related physiologic changes account for unexpected drug responses and the need to adjust Mrs. Windish’s analgesic dosages.

Typically, around-the-clock analgesia is administered for the first 24 hours post-operatively. Diligent attention to nonverbal expressions of pain and other subtle cues are essential, because verbal communication may not be reliable. If a reason exists to suspect pain, such as Mrs. Windish’s recent surgery, she should be treated for pain.

Mrs. Windish’s post-operative pain should be managed with extra care. A typical narcotic dose for younger patients may produce profound respiratory depression in Mrs. Windish. Most older adults need a lower analgesic dose to control pain without adverse respiratory effects. The nurse will be responsible for⁷:

- administering adequate analgesic doses to achieve pain control
- anticipating possible side effects
- evaluating and documenting treatment effectiveness

Conclusion

Since an increasing number of older adults are expected to have surgery, nurses need to understand the physiological changes that impact the post-operative recovery. Careful assessment and aggressive attention to impending wound, infectious, ventilatory, circulatory, or gastrointestinal

sis. Nurses routinely assess for Homans’ sign in the post-operative period and document their findings. Mrs. Windish is taught the role of leg exercises and early ambulation in lowering the incidence of deep vein thrombosis. Other measures to promote normal venous return and circulatory blood flow include elastic thromboembolic stockings, pneumatic antiembolism stockings (sequential-compression devices), and maintaining adequate hydration. Nurses may also administer low-molecular-weight dextran, low-dose subcutaneous heparin, or low-molecular-weight heparin to reduce the incidence of deep vein thrombosis in post-operative patients.

Paralytic ileus

Etiology

Post-operative patients may have significantly decreased peristalsis, causing temporary bowel inactivity. Intestinal obstruction is one of the more common problems of the aging gastrointestinal (GI) tract. Age-related changes include reduced intestinal muscle tone, which may result in slower peristalsis and loss of elasticity in abdominal muscles.

Nursing care

Bowel sounds occur because food, fluid, or gases are passing through the GI tract. Common post-operative circumstances, such as NPO status, endotracheal intubation, and nasogastric suctioning, prevent the normal passage of gas and fluid through the bowel. In the past, the rule was to withhold enteral feeding until bowel sounds returned. However, bowel sounds are an indicator of

and a quicker return home.⁶

Rather than wait for bowel sounds, the nurse assesses Mrs. Windish for abdominal distention or pain. Unless there is evidence of mechanical obstruction, complete lower bowel obstruction, or GI bleeding, the nurse may begin enteral feedings as ordered.⁶ Another important nursing intervention that helps resolve ileus is early ambulation.

Pain

Etiology

Pain is an expected outcome of surgery, yet pain management in older adults warrants discussion because of special considerations. Changes in peripheral vascular function, skin, and the neural transmission of pain impulses place the older adult at risk of being unable to perceive pain.¹ In addition, older adults may believe that pain is something that they must accept and endure. They may also believe that it’s unacceptable to show any response to pain.

Age-related changes in total body water, percentage of body fat, and alterations in protein binding significantly influence how drugs are distributed within the body. Diminished drug clearance is the most clinically significant age-related change; it occurs because of diminished liver blood flow and enzyme activity, slower renal blood flow, and a decreased number of renal glomeruli. All of these elements affect how rapidly drugs are metabolized and eliminated from the body. With increased age, a great number of drugs are excreted more slowly through the kidneys.⁷

complications are crucial in the post-operative care of older adults.

References

1. Potter PA, Perry AG. Fundamentals of Nursing: Concepts, Process, and Practice. 4th ed. St. Louis: Mosby, 1997.
2. Saxon SV, Etten MJ. Physical Change & Aging: A Guide for the Helping Professions. 3rd ed. New York: Tiresias Press, 1994.
3. Kart CS, Metress EK, Metress SP. Human aging and Chronic Disease. Boston: Jones and Bartlett, 1992.
4. Fraser D. Assessing the elderly for infections. *J Gerontol Nursing* 1997;23(11):5-10.
5. Fein AM. Pneumonia in the elderly: special diagnostic and therapeutic considerations. *Medical Clinics of North America* 1993;78:1015-33.
6. Brenner ZR. Preventing post-operative complications: what's old, what's new, what's tried-and-true. *Nursing* 1999;29(10):34-40.
7. Lee M. Drugs and the elderly: do you know the risks? *Am J Nursing* 1996;96(1):25-32.



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perineal resection and permanent colostomy. Dietary services may be required to determine the patient's caloric needs or dietary modifications secondary to the operative procedure. A social worker may become involved to aid with a smooth transition from hospital to home.¹

Nursing staff should instruct the patient and caregiver about untoward complications, which may include fever, chills, shortness of breath, erythema of the incision line, wound separation, and more. These complications necessitate a call to the physician.

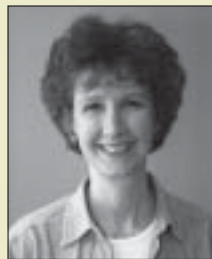
Should the patient require adjunctive therapy, arrangements may be made at hospital discharge for follow-up evaluations by an oncologist or radiation oncologist.

Conclusion

Caring for patients with colorectal cancer requires a multidisciplinary approach. Each team member adds his or her particular expertise in a different specialty to the overall management of the patient with colorectal cancer. The ultimate goal is to improve the patient's outcome and quality of life.

References

1. Groenwald S, Frogge-Hansen M. Cancer Nursing: Principles & Practice. Jones & Bartlett, 1997.
2. Hampton B, Bryant R. Ostomies & Continent Diversions: Nursing Management. Mosby, 1992.
3. Finne, CO III. Advances in colorectal cancer. *J Enterostomal Therapy* 1991; 18:82.
4. Foltz AT. Nutritional factors in the prevention of gastrointestinal cancer. *Seminars in Oncology Nursing* 1988;4:239.
5. Schwartz S, Shires G, Spencer F. Principles of Surgery. WB Saunders, 1994.



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After reading this educational offering, the reader should be able to:

1. Explain how the normal physiologic changes that occur in the older adult may lead to an increased risk for post-operative complications.
2. Identify at least four (4) post-operative complications that are related to the aging process.
3. List at least two (2) nursing interventions for each of the post-operative complications identified.
4. Discuss post-operative pain management in the older adult, including the impact physiologic changes have on pharmacologic management.

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1. Physiologic changes of aging that delay wound healing in the older adult include:
 - A. increased formation of antibodies and lymphocytes.
 - B. adequate inflammatory response.
 - C. decreased intake of protein.
 - D. adequate circulation.
2. At the minimum, an acceptable dietary intake for Mrs. Windish would include how many calories?
 - A. 1200 kcal/day
 - B. 1500 kcal/day
 - C. 1800 kcal/day
 - D. 2100 kcal/day
3. Homeostatic mechanisms impaired by aging that affect the older adult's response to infection include:
 - A. increased cardiac output
 - B. increased renal concentration
 - C. decreased potassium intake
 - D. decreased fever response
4. Assessment of Mrs. Windish's hydration status includes all except which of the following methods?
 - A. Vital signs
 - B. Skin turgor
 - C. Mucous membranes
 - D. Intake and output records
5. The best indicator of lower respiratory infection in the older adult is:
 - A. white blood cell count
 - B. presence of cough
 - C. temperature > 101F
 - D. respirations > 30
6. The older adult can best avoid post-operative pneumonia and atelectasis by:
 - A. using bronchodilators
 - B. receiving oxygen therapy
 - C. splinting and deep-breathing after surgery
 - D. reducing cigarette consumption before surgery
7. The older adult is at increased risk for the development of deep vein thrombosis because of:
 - A. increased fluid intake
 - B. reduced venous return
 - C. increased clotting factors
 - D. reduced pain response
8. Pain management for the post-operative older adult is based on which of these principles?
 - A. Analgesic administration is on a PRN basis.
 - B. Non-pharmacologic measures are preferred.
 - C. Narcotic dosages may need to be adjusted.
 - D. Older people do not experience much pain.

Mark your answers with an X in the box next to the correct answer

1 A B C D

3 A B C D

5 A B C D

7 A B C D

2 A B C D

4 A B C D

6 A B C D

8 A B C D

Participant's Evaluation

1. What is the highest degree you have earned? 1. Diploma 2. Associate 3. Bachelor's 4. Master's 5. Doctorate
 Using 1 =Strongly agree to 6= Strongly disagree rating scale, please circle the number that best reflects the extent of your agreement to each statement.

	Strongly Disagree				Strongly Agree
2. Indicate to what degree you met the objectives for this program:					
■ 1. Explain how the normal physiologic changes that occur in the older adult may lead to an increased risk for post-operative complications.	1	2	3	4	5 6
■ 2. Identify at least four (4) post-operative complications that are related to the aging process.	1	2	3	4	5 6
■ 3. List at least two (2) nursing interventions for each of the post-operative complications identified.	1	2	3	4	5 6
■ 4. Discuss post-operative pain management in the older adult including the impact physiologic changes have on pharmacologic management.	_____				
3. Have you used home study in the past? ■ Yes ■ No	_____				
4. How many home study courses do you typically use per year?	_____				
5. What is your preferred format? ■ Video ■ Audio-cassette ■ Written ■ Combination	_____				
6. What other areas would you like to cover through home study?	_____				

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