

# Perspectives

Recovery Strategies from the OR to Home

## In This Issue

**O**varian cancer is often a devastating diagnosis with poor prognosis in large part because few patients present with early disease and the symptoms are usually vague and nonspecific. Treatment of ovarian cancer depends on the extent of metastasis at the time of diagnosis. Chemotherapy, radiation, and surgery form the cornerstones of care for the patient with ovarian cancer. Nurses need to recognize that, for ovarian cancer, surgery is primarily a treatment of control and, only rarely, a cure. In addition to the physical concerns of postoperative healing, nurses play a vital role in the patient's psychological adaptation and quality of life relative to ongoing treatment and care.

Patients who have an endotracheal tube are uncomfortable, frightened, and feel as if they are about to suffocate. They have often described the experience as "like trying to breath through a straw". With their inability to communicate verbally with nurses, they comprise one terrified group of patients. Ms. Schapira's article discusses the key issues that arise when caring for adult, intubated patients immediately after surgery.

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## The Patient with Ovarian Cancer: Diagnosis, Treatment, and Nursing Management of Postoperative Complications

by Pat Christy, RN, BSN, OCN, and Lois Dixon, MSN, RN, BC

**O**varian cancer has been called "the disease that whispers".<sup>1</sup> Because there are no useful screening tools and no specific symptoms, 75% of women with ovarian cancer are diagnosed at advanced stages. Ovarian cancer accounts for a full one-third of all gynecological cancers but results in over 50% of deaths from those cancers. In the year 2002, about 23,300 women were diagnosed with ovarian cancer in the USA and approximately 13,900 women died.<sup>2</sup>

Today, most women with ovarian cancer will achieve remission – even those with advanced disease on diagnosis. However, most ovarian cancer will recur. Improvements in surgical techniques and new chemotherapy agents are the primary reasons for remission. From 1970 to 2001, median survival improved from 12 to 36 months.<sup>3</sup>

### Etiology

There are three types of ovarian cancer. Over 90% are epithelial tumors, arising from the cells that line most of the ovary. It is most common in older women. The other two types of ovarian cancer are germ cell and stromal tumors. These tumors are relatively rare and occur in younger patients.<sup>1</sup>

This article will only discuss epithelial tumors of the ovary.

Ovarian cancer spreads by three routes: direct extension into the peritoneal cavity, via the lymphatic system, and by the bloodstream. Direct extension into the peritoneal cavity occurs as "seeding" into the areas bathed by peritoneal fluid: liver, diaphragm, bladder, spleen, and intestines. About 85% of patients with ovarian cancer present with ascites as a result of peritoneal irritation from this seeding.<sup>4</sup>

### Symptoms

Ovarian cancer has no specific symptoms. Vague symptoms, such as gas, nausea, indigestion, frequent or urgent urination, unexplained changes in bowel habits, abdominal fullness or bloating, and ongoing fatigue are often ignored by women as not being serious enough to warrant medical evaluation. These signs and symptoms may be attributed to other conditions and diagnoses. Many patients have no symptoms at all. Some claim that they just "haven't felt right" for some time.<sup>1</sup>

### Risk factors

The primary risk factor for the development of ovarian cancer is increasing age.



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# Postoperative Care of Patients with an Endotracheal Tube

by Kathleen Schapira, BSN, RN

## Breathing is a prerequisite for life.

There is no debating that patients who have an endotracheal tube are uncomfortable, frightened, and feel as if they are about to suffocate. They have often described the experience as “like trying to breath through a straw”. With their inability to communicate verbally with nurses, they comprise one terrified group of patients.

Nurses in today’s ever-changing health-care system are faced with less patient time, more patients, higher acuity levels, and less clinical support. This article will discuss the key issues that arise when caring for adult, intubated patients immediately after surgery.

The purpose of intubation in postoperative patients is to maintain sufficient ventilation, usually after general anesthesia.<sup>1</sup> When caring for patients with an endotracheal tube, it is essential to maintain adequate oxygenation, prevent complications, and provide some means by which patients can communicate with the clinical staff.

This article will focus on patients who experience short-term intubation, e.g., those in the post-anesthesia care unit. If these patients do not receive proper care, serious complications may develop, prolonging the length of hospital stay. For patients who experience prolonged intubation and mechanical ventilation, several additional issues need to be addressed.

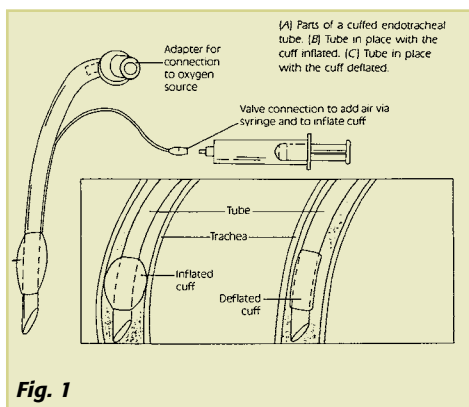


Fig. 1

## Assessment with nursing interventions

Although an endotracheal tube can be inserted either orally or nasally, the oral route is quicker and more often used, unless contraindicated, e.g., after oral surgery.<sup>2</sup> The size of adult endotracheal tubes ranges from 6.5 to 9 French. The larger the tube, the easier it is for the patient to breathe.

The tube is placed from 3 to 7 cm above the carina (Figure 1).<sup>3</sup> The nurse should note the centimeter mark on the tube at the patient’s lips or nares, if nasally intubated. The tube must be secured to eliminate the possibility of downward or upward movement. This can be done by using tape or, preferably, with a device that is specifically designed to secure endotracheal tubes. The nurse needs to pay particular attention to skin integrity when benzoin® and tape are used. Some of the Velcro® type-holders are available not only reduce the incidence of extubation but also prevent skin damage which often occurs with traditional taping and skin drying agents, such as benzoin. These holders are available with and without bite-blocks. To prevent displacement, the tape should be changed at least daily. Tube placement should be assessed at every shift.<sup>2</sup>

Adult endotracheal tubes (ETs) are cuffed to maintain proper placement, i.e., to prevent their expulsion or slippage into one of the bronchi, which would impair air exchange in one lung. The ET cuff pressure should be less than 30 mm Hg to prevent damage to the trachea and laryngeal nerve.<sup>3</sup> The nurse should auscultate patients’ lungs to ensure adequate and bilateral breath sounds.<sup>4,5</sup>

## Suctioning

If patients are unable to cough up endotracheal secretions, then a nurse must remove them by suctioning. Patients should

be suctioned only if necessary. This procedure is extremely anxiety-provoking for the patient and may cause suction-induced hypoxemia. The preferred method for preventing hypoxemia is hyperinflation,<sup>6,7</sup> which can usually be accomplished by asking patients to take three deep breaths before the procedure. If unable to do so because they are too weak or uncomfortable, the nurse may manually inflate the lungs with a resuscitation bag.

Before suctioning, the nurse must explain this procedure to patients. Inform them about what to expect and how long it will take. Reassure patients that they will have an opportunity to breathe between passes with the suction catheter.

The use of normal saline, although widely practiced, is not supported by research.<sup>8</sup> It can decrease the PaO<sub>2</sub> and has a deleterious effect on alveolar capillary oxygen exchange. It can also be terrifying for patients, who may feel as if they are choking on their own secretions. As an alternative, it has been suggested that rotating the suction catheter during withdrawal may ease the removal of secretions.

## Communicating with intubated patients

The endotracheal tube interferes with patients’ ability to communicate by affecting the vocal cords. Patients say that the most distressing part of being intubated is the inability to speak and use traditional methods of communication.<sup>9,10</sup>

Although nurses are taught to explain procedures, so that patients will be better prepared for the tasks at hand, this directive is even more critical for intubated patients. Because these patients cannot ask questions or request a more detailed explanation, nurses need to be extremely thorough in their instructions.

Both nurses and patients will benefit if a simple method of communication is initially established. For example, nurses could ask simple yes-or-no questions or, ideally, use a communication board (Figure 2).

If patients can write, offer them a pencil and clipboard. It is important to keep in mind that postoperative patients are recovering from anesthesia and will probably need to be reoriented to their surroundings. Instructions should be repeated slowly and succinctly.

Experience tells us that when pa-

tients are our partners in care, their recovery will be more successful. Nurses must make every attempt to interpret patients' verbal and nonverbal messages. There is no way to adequately describe the fear that is experienced by intubated patients who are unable to talk to their nurse. The inability to describe pain, request medication, or relay feelings of anxiety creates a sense of isolation.

As nurses, we often wonder if we are capable of handling what our patients must endure. Many nurses who care for intubated patients believe that they would be unable to tolerate an endotracheal tube. This author knows, first hand, that with proper explanations, clinical support, and care, intubated patients can recover successfully or more easily without complications.

### Extubation

When a physician determines that a patient no longer needs an endotracheal tube, a number of steps must be followed during extubation to prevent complications. It is often helpful to invite a family member to sit with the patient to provide emotional support prior to extubation.

First, the patient should be sitting upright, unless contraindicated. The nurse should explain how the tube will be removed, then ask the patient to cough after its removal. Coughing eases secretion removal and helps to prevent aspiration. The patient should be awake during the procedure and able to take deep breaths spontaneously. The nurse then follows these steps:

1. Suction the endotracheal tube prior to removal.
2. Loosen the tape or endotracheal tube holder.
3. Deflate the endotracheal cuff.
4. Instruct the patient to take a deep breath, then cough.
5. Remove the endotracheal tube swiftly and gently.
6. Explain that the patient may feel hoarse for a while.
7. Instruct the patient to rest the voice immediately after extubation.
8. Administer oxygen therapy, as ordered.

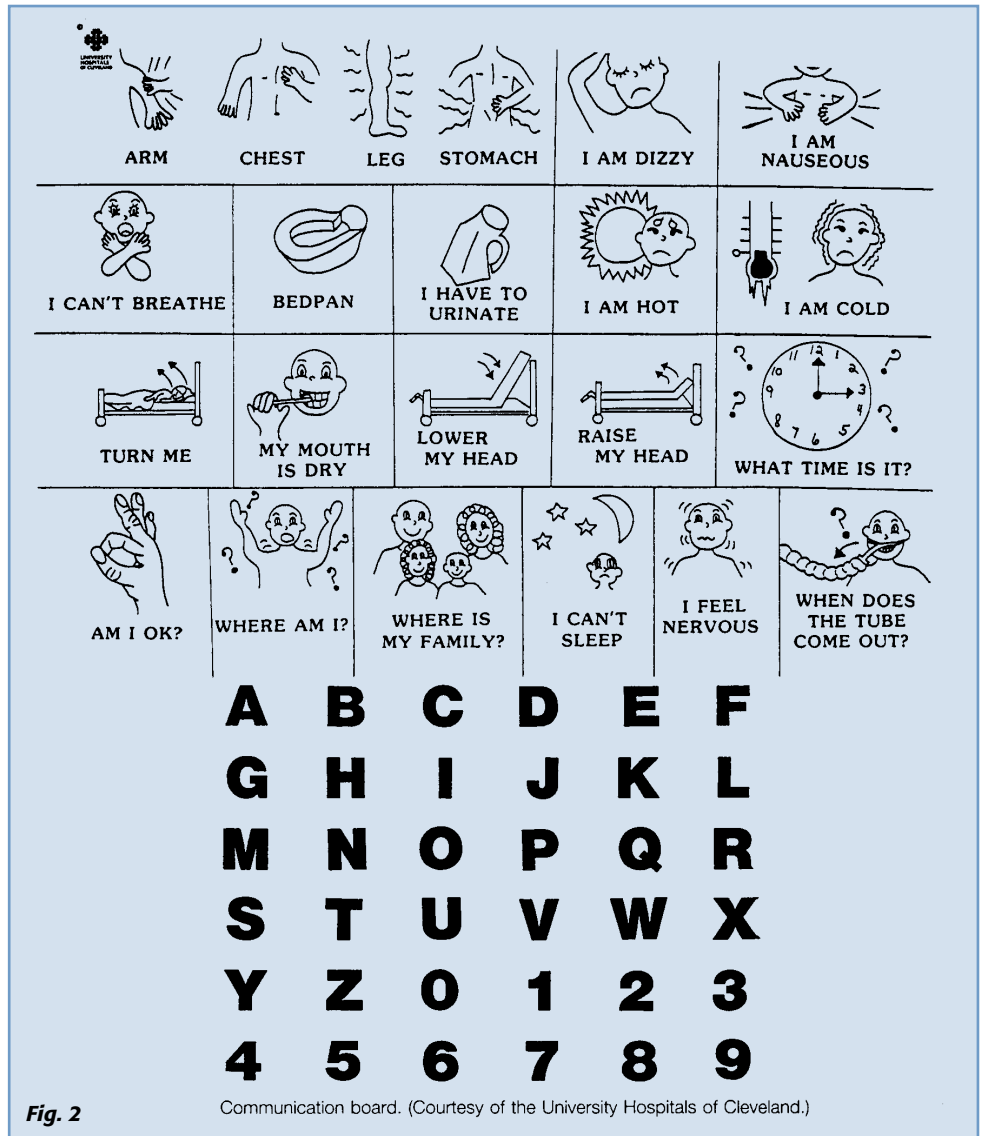
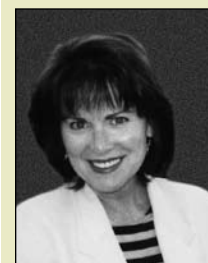


Fig. 2

Communication board. (Courtesy of the University Hospitals of Cleveland.)

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**The patient With Ovarian cancer**  
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The median age at diagnosis is 62 years. About 80% of patients who are diagnosed are postmenopausal. Older women generally have the most aggressive forms of ovarian cancer.<sup>4</sup>

Other risk factors seem to be related to the overall number of ovulatory cycles that a woman experiences, such as early menarche, nulliparous or first child after the age of 30, menopause after the age of 50, and lack of the use of birth control pills. The ovulatory-cycle theory states that, when the ovary repairs itself after each ovulation, genetic mutations can occur. These mutations eventually cause the cells to become cancerous.<sup>1,5</sup>

The use of fertility drugs has been listed as a possible risk factor. Genetic and familial risk factors include a personal or family history of breast, ovarian, endometrial, or colon cancer. The presence of inherited BRCA<sub>1</sub> and BRCA<sub>2</sub> gene mutations may be associated with an increased risk of ovarian cancer.<sup>1,4</sup> The study of these genetic tendencies and alterations is still under development. There are ethnic differences in the incidence of ovarian cancer around the world and even in the different ethnic communities of the United States. In general, whites have the highest incidence of ovarian cancer, followed by African Americans and Asian Americans.<sup>4</sup>

**Diagnosis**

The diagnosis of ovarian cancer involves the detection of key signs and symptoms as well as selected diagnostic testing. A definitive diagnosis is made through the use of exploratory laparotomy.

**Key signs and symptoms**

The most characteristic signs of ovarian cancer is ascites, which develops in response to tumor irritation of the peritoneal lining. A bimanual pelvic exam allows palpation of the vagina, uterus, and ovaries. An ovarian mass is relatively immobile or irregular. A normal-sized ovary in a postmenopausal woman is cause for concern, because ovaries shrink with aging and postmenopausal status.

**Diagnostic testing**

The best method for evaluating the

**Table 1. Comprehensive staging laparotomy of suspected early ovarian cancer**

- Vertical incision that allows adequate visualization and palpation of structures in the upper abdomen and retro peritoneum
- Peritoneal washings (Pelvis, paracolic gutters, hemi diaphragms)
- Inspection/palpation of all peritoneal and mesenteric surfaces
- Biopsy of any lesions or adhesions
- Total abdominal hysterectomy and bilateral salpingo-oophorectomy
- Infracolic omentectomy
- Random peritoneal biopsies (bladder, cul-de-sac, bilateral pelvic peritoneum, paracolic gutters hemi diaphragms)
- Pelvic and para-aortic lymphadenectomy (inspection and palpation only are inadequate)
- Appendectomy (optional)

From Boente, Chi and Hoskins. The Role of Surgery in the Management of Ovarian Cancer: Primary and Interval Cytoreductive Surgery. *Seminars in Oncology* 1998;25(3). Permission to reprint granted from W.D. Saunders

ovary is an ultrasound exam.<sup>4,6</sup> Serum CA-125 may be elevated, but the non-specificity of this test limits its usefulness. The diagnosis of ovarian cancer is only suggested by the presence of an abnormal pelvic exam, abnormal findings on a transvaginal ultrasound, and an elevated CA-125. An exploratory laparotomy is required for definitive diagnosis.<sup>4</sup>

**Exploratory laparotomy**

Surgical exploration is performed first to determine the diagnosis and to evaluate the extent of disease. The surgical staging laparotomy is extensive and is the single most important factor in giving physicians information to select the appropriate management options of early-stage disease. Table 1 reviews the components of the staging laparotomy. The extent of lymph node dissection in early-stage ovarian cancer is controversial, but if dissection is performed in advanced stages, it includes pelvic and aortic lymph nodes.<sup>7,8</sup>

During the exploratory (or staging) laparotomy, the surgeon has two surgical options: perform the standard total abdominal hysterectomy and bilateral salpingo-oophorectomy or perform a procedure to spare the uterus and contralateral ovary in order to preserve fertility. Fertility-preserving surgery is controversial and is reserved for younger patients who may have early-stage vs. late-stage ovarian cancer.<sup>7,8</sup>

**Treatment**

Treatment of ovarian cancer depends on the extent of metastasis at the time of diagnosis. Chemotherapy, radiation, and surgery form the cornerstones of care for the patient with ovarian cancer.

**Chemotherapy**

Current chemotherapy modalities greatly increase the likelihood of remission but do not prevent recurrence. Ovarian cancer is highly sensitive to chemotherapy, which treats any disease that remains after surgery. Today, two agents are used together as first-line chemotherapy: cisplatin (or carboplatin) and Taxol. Carboplatin is often used instead of cisplatin, as it is more easily tolerated.

The nurse administers chemotherapy drugs intravenously over several hours in an outpatient setting. Each time the drugs are given is called a cycle. Cycles are repeated about every 3 weeks for a total of 6 cycles.<sup>1,4</sup>

In addition to chemotherapy, other drugs may be used for recurrent disease. Approximately 15 different chemotherapy drugs are active in the treatment of ovarian cancer (Table 2). Typically, if the disease is not arrested with one drug regimen, another is given.

Measuring the serum CA125 level monitors disease progression. If the level decreases, the chemotherapy regimen is considered successful in disease control. If the level rises, the physician may switch to another regimen.<sup>4</sup>

**Radiation**

After surgery, radiation therapy may be used to treat any remaining local disease. Radiation therapy is given either by external beam or by placing radioisotopes into the peritoneum. External beam radiation therapy is only appropriate for early-stage disease with remaining localized disease. It requires daily treatment of the entire abdominal cavity and pelvis. It has significant toxicity and side effects, includ-

ing severe nausea and vomiting, diarrhea, dysuria, and anorexia.

Radioisotope therapy involves the placement of a low-dose radioisotope, such as phosphorus-32, in a suspension that is injected into the peritoneal cavity. The use of this therapy is still investigational.<sup>4</sup>

## Surgery

Surgery is the cornerstone of management of ovarian cancer. It has broad application throughout the clinical course of disease, from initial diagnosis to palliative care.<sup>9</sup> Nurses need to recognize that, for ovarian cancer, surgery is primarily a treatment of control and, only rarely, a cure. In addition to the physical concerns of postoperative healing, nurses play a vital role in the patient's psychological adaptation and quality of life relative to ongoing treatment and care.

**Cytoreduction surgery.** Maximal cytoreduction at the time of the initial staging laparotomy is beneficial in even the most advanced stages of ovarian cancer. This procedure is the primary reason for the marked improvements in median survival rates over the past 35 years. Postoperative tumor burden (size) measurement criteria of less than or equal to 2 cm is considered maximal or optimal. Reduction of tumor burden to 2 cm or less may decrease the number of chemotherapy cycles required to achieve clinical remission, improve gastrointestinal function, and improve performance status and quality of life. The surgeon balances these benefits with the possibility of increased postsurgical morbidities, including prolonged recovery time.<sup>7,8</sup>

The nurse must be aware that patients with a larger initial tumor burden will require more extensive and lengthy surgery, involving many organs in the peritoneal cavity. This will result in the need for increased diligence, surveillance, and care in the immediate postoperative setting.

Secondary cytoreductive surgery may help to enhance the effectiveness of additional chemotherapy in some patients at the time of large tumor recurrence. Ovarian cancer cells develop multiple-drug resistance to chemotherapeutic agents and the surgical removal of most of these resistant cells improves responses to additional chemotherapy.

**Debulking surgery.** Patients whose tumors cannot be optimally cyto-reduced

**Table 2. Drugs for treatment of ovarian cancer**

Carboplatin
Cisplatin
Cyclophosphamide
Docetaxel
Doxorubicin
Epirubicin
Etoposide
5-Fluorouracil
Ifosfamide
Melphalan
Methotrexate
Mitoxantrone
Paclitaxel
Thiotepa
Topotecan
Vinorelbine

by surgery may be candidates for interval debulking surgery after three cycles of chemotherapy. This second attempt to remove tumor mass improves the median survival time for these patients.<sup>7</sup> As chemotherapy cycles are generally 3 to 4 weeks in length, these patients will undergo two major abdominal surgeries in less than 4 to 5 months.

**Palliative surgery.** Surgery for the palliation of symptoms from gastric outlet obstruction to small- or large-bowel obstructions may be helpful in improving quality of life by relieving or bypassing the obstruction. Gastric outlet obstructions are managed with the placement of a gastric tube either endoscopically, under radiographic guidance, or surgically. Small-bowel obstructions can be managed surgically with a resection or bypass procedure; colonic obstructions may require a diverting or loop colostomy.

These patients tend to be severely debilitated from prolonged chemotherapy, multiple abdominal surgeries, and poorer renal function, related to the chemotherapy regimen. This debilitation results in a postoperative morbidity as high as 32%.<sup>7</sup>

## Postoperative complications

Patients undergoing a staging laparotomy are usually hospitalized for 5 days. More extensive tumor burdens necessitate more extensive surgery and longer postoperative recovery times. Major complications include fluid and electrolyte imbalance, abdominal distention and prolonged ileus, pulmonary infections, wound infections, urinary tract infections, and pain.

Deep vein thrombosis, a risk for any major surgical procedure, is a consideration for the postoperative ovarian cancer patient.

Nursing care in the immediate postoperative time focuses on both prevention and early recognition of complications. Management of pain, return of the patient to full ambulation, and resumption of oral intake of food and fluids are primary concerns.<sup>10</sup>

**Fluids and electrolytes.** Fluid and electrolyte management is an essential part of nursing care. Fluid shifts and third spacing of fluids are related to the length of surgery, removal of large amounts of ascitic fluid, and blood loss during surgery. Nursing interventions may include accurate fluid volume measurement, monitoring of electrolyte status, replacement with albumin and electrolyte-rich fluids, and blood transfusions.

Some patients will require very close hemodynamic monitoring in the immediate postoperative period and will have central venous catheters in place. Other patients will receive intravenous therapy peripherally. In both cases, the nurse pays meticulous attention to intravenous site inspection for signs or symptoms of phlebitis or extravasations. Multiple peripheral sites may be required to administer the prescribed intravenous therapy, requiring the nurse to be aware of potential drug interactions and compatibilities with the prescribed intravenous medications and fluids.

**Pulmonary.** Basic nursing interventions are key in the prevention of postoperative respiratory complications. The nursing assessment includes thorough lung auscultation with assessment for adventitious or diminished breath sounds, monitoring of vital signs (blood pressure, respirations, and temperature) every 2 to 4 hours, and monitoring blood counts, electrolytes, and other laboratory results.

The use of incentive spirometer will encourage the patient to cough and deep breathe which will help to reverse atelectasis and prevent pneumonia. The nurse teaches and assists patients with coughing and deep breathing and the use of the incentive spirometer every 1 to 2 hours.

**Wound infection.** Ovarian cancer patients are particularly vulnerable to developing wound infections. Abdominal incisions are large and extend from the symphysis pubis to the epigastrium.<sup>7</sup> Healing of these incisions is particularly compromised

in patients who have ascites. Although the peritoneal fluid is removed during surgery, continued irritation to the peritoneal lining may result in continuous production of fluid. This ascitic fluid can leak from the wound site and around drains, causing skin irritation and delayed healing.

The nurse assesses the incision and surrounding skin for signs and symptoms of infection, monitors vital signs closely, and administers intravenous antibiotics as ordered. It is critical to record the drainage amounts and characteristics from any dressings and drains. To help prevent accidental pull-out of drainage bulbs the nurse may apply a Velcro®-type drainage bulb holder (Fig. 1, Dale Medical Products, Plainville, MA).

In addition to the presence of irritating fluids on the skin's surface, the skin integrity may be compromised by the application of various tapes and topical agents.

The nurse teaches the patient and assists with splinting of the abdomen with coughing, deep breathing, and position changes to help to reduce the possibility of wound dehiscence and to help alleviate pain. Close nursing surveillance for any subtle changes in the patient's condition enables early medical intervention.

**Urinary tract infection.** Urinary catheters are placed in the operating room. They are typically left in place for a minimum of 48 hours. Urinary output is monitored at least every 8 hours as a measure of fluid balance. The nurse secures the drainage tubing with a commercial Velcro®-type Foley catheter holder (Dale Medical, Plainville, MA) to help to reduce meatal friction that may lead to urinary tract infection, as patients are moved and ambulate. Fluid intake is encouraged to prevent urinary stasis, another cause of urinary tract infection.

**Pain.** A patient's ability to participate in her postoperative care requires appropriate and aggressive pain management. Postoperative pain is most acute in the first 24 to 48 hours after surgery. In the post-laparotomy patient, pain is most often managed intravenously, via patient-controlled analgesia (PCA).

Intravenous narcotic analgesics are used for pain control during the first several days postoperatively. Oral narcotic and non-narcotic analgesics are started once



Fig. 1

the immediate postoperative pain intensity has been controlled.

A complete and thorough pain assessment by the nurse is absolutely necessary and includes pain intensity measurement on a standardized rating scale, pain location, and the patient's description of the pain in a systematic and around-the-clock method.<sup>10</sup> By recording these results, the nurse is able to assess the effectiveness of the prescribed pain regimen and work with the surgeon in making necessary adjustments to enhance patient comfort.

**Deep vein thrombosis.** Postoperative cancer patients are at a higher risk for developing deep vein thrombosis and pulmonary embolus. The nurse will administer low-dose anticoagulants and assist the patient to walk early in the postoperative period as preventive measures. The nurse will teach the patient about regular position changes, range of motion exercises, and the use of antiembolism stockings or compression stockings to help prevent the development of venous stasis.

### Long-term complications

Even with a smooth immediate postoperative recovery, the patient with ovarian cancer is at risk for the development of long-term complications, such as bowel obstruction, lymphedema, fistula formation, and ascites. These complications occur as a result of radiation treatments, surgical interventions, or tumor recurrence.

**Bowel obstruction.** Bowel obstruction is the most common late complication associated with abdominal surgery and can occur months or years after surgery. It is 4

to 5 times more common in patients treated with postoperative pelvic or abdominal radiation therapy. In addition, bowel obstructions may occur because of tumor recurrence.

The nurse teaches the patient about the symptoms of bowel obstruction such as abdominal pain, nausea and vomiting, abdominal distention, and the absence of bowel sounds.<sup>10</sup> Educated and knowledgeable patients can help with the early diagnosis and intervention of bowel obstruction.

**Lymphedema.** Lymphedema is the gradual accumulation of protein-rich fluid in the interstitial spaces of an extremity, causing chronic inflammation and fibrosis in the surrounding tissue.<sup>10</sup> Surgical resection of lymph nodes interferes with their normal pressure gradients and valve patency, allowing fluids and protein to leak into the surrounding tissue. Lymphedema causes pain, numbness, and decreased range of motion in the affected extremities.

Ovarian cancer patients whose surgery involved lymph node dissection are at risk for lymphedema of the lower extremities and pelvis. The nurse teaches the patient about these risk factors as well as preventative measures. These measures include protection of the extremity from injury, friction, and trauma, as well as good skin care, which includes keeping the skin clean, dry, and well hydrated with emollients. The nurse also instructs the patient to watch for early signs and symptoms of lymphedema, such as erythema, warmth, and a feeling of tightness in the affected area.<sup>10</sup>

**Fistula formation.** The risk of developing fistulas increases with additional surgeries but may occur in any ovarian cancer patient, even as a delayed complication. A fistula is an abnormal opening between internal organs or between an organ and the exterior of the body. Most late fistulas are associated with recurrent cancer and usually begin in an area of necrosis, infection, or inadequate blood supply. Conversely, early fistulas are due to infectious complications. When possible, aggressive surgical management of the fistula is warranted. In late-stage ovarian cancers, this may be impossible, and nursing management of drainage and odor become the most important considerations. Nurse referral to the

wound ostomy nurse will enable the design of an individualized treatment plan for the optimal management of drainage, odor, and protection of the surrounding tissues.<sup>10</sup>

**Ascites.** Ascites is indicative of advanced disease and is present in 85% of ovarian cancer patients, either at the time of diagnosis or after treatment failure. Paracentesis by either a surgically implanted abdominal port and accessed by a special needle or by intermittent placement of a paracentesis needle is the most common treatment for ascites. Additionally, the administration of diuretics and restriction of oral fluid intake and sodium are used to manage the fluid surplus.

Patient teaching about medication side effects, drug interactions, and the rationale for dietary changes are important nursing interventions. In addition, the nurse provides support and understanding for patients who often find it difficult to adhere to fluid and sodium restrictions.<sup>10</sup>

### Ongoing care

Knowing the long-term and far-reaching effects of both physical and psychological issues associated with ovarian cancer allows the nurse to provide care within a holistic framework. Much of the required care will occur long after the postoperative nurse discharges the patient from the acute care setting. Providing information about support groups, educational programs, and resources along with the routine discharge instructions will provide the patient and family with information when they need it. Ensuring contact and follow up with social workers, nurse case managers, or oncology nurses who will be administering chemotherapy helps to provide a continuity of care.

As the nurse remembers, listens, values, and practices compassionate caring, the ovarian cancer patient's long and difficult journey is eased. The authors believe psychosocial recovery is just as, if not more important than physical recovery. A discussion of this is beyond the scope of this article.

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After reading this article, the learner should be able to:

1. Identify the risk factors for the development of ovarian cancer.
2. Describe the various treatment options for the patient with ovarian cancer.
3. Identify three postoperative complications and associated nursing interventions for prevention and treatment.

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- Over 90% of ovarian cancers arise from what type of cells?**
  - germ cell
  - oat cell
  - stromal
  - epithelial
- The primary risk factor for the development of ovarian cancer is:**
  - advancing age
  - early menarche
  - fertility drugs
  - family history
- Signs and symptoms of ovarian cancer may include:**
  - pain
  - ascites
  - abnormal bleeding
  - abdominal pain
- Which of the following will provide a definitive diagnosis of ovarian cancer?**
  - ultrasound
  - serum CA-125
  - pelvic examination
  - exploratory laparotomy
- The cornerstone of management of ovarian cancer is:**
  - palliation
  - chemotherapy
  - radiation
  - surgery
- Ovarian cancer patients who undergo surgery are at higher risk for which postoperative complication?**
  - deep vein thrombosis
  - urinary tract infection
  - wound infection
  - pneumonia
- Fluid and electrolyte disturbances may occur postoperatively because of all of the following except:**
  - dehydration
  - blood loss
  - length of surgery
  - removal of ascitic fluid
- The most common late postoperative complication is:**
  - ascites
  - lymphedema
  - bowel obstruction
  - fistula formation
- Early signs of lymphedema include:**
  - decreased range of motion
  - feeling of tightness
  - numbness
  - pain
- Ascites is indicative of advanced disease and is present in what percentage of ovarian cancer patients?**
  - 85%
  - 75%
  - 65%
  - 55%

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

1	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	3	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	5	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	7	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	9	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D
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**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 disagree to 6= Strongly agree 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. Identify the risk factors for the development of ovarian cancer.	1	2	3	4	5	6	
■ 2. Describe the various treatment options for the patient with ovarian cancer.	1	2	3	4	5	6	
■ 3. Identify three postoperative complications and associated nursing interventions for prevention and treatment.	1	2	3	4	5	6	

Have you used home study in the past?  Yes  No

3. How many home-study courses do you typically use per year? \_\_\_\_\_

4. What is your preferred format?  video  audio-cassette  
 written  combination

5. \_\_\_\_\_

6. What other areas would you like to cover through home study? \_\_\_\_\_

For Iowa nurses, you may submit the evaluation to Iowa Board of Nursing.

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