

Perspectives

Recovery Strategies from the OR to Home

In This Issue

The diagnosis of esophageal cancer is a devastating one and is often a life-altering event for the patient and family. Approximately 11,000 new cases will be diagnosed this year. In this article, Ms. Caffery discusses treatment options, focusing on surgery and endoscopic procedures. Postoperative nursing interventions including, the critical monitoring period in ICU to the discharge planning are explored in depth. The importance of discharge planning at all levels of care is critical. Ms. Caffery focuses on the care to ensure the best possible outcome, including home care and case management.

In our second article, Ms. Sieggreen discusses lower extremity arterial reconstruction. Individuals undergoing this surgery suffer from atherosclerotic arterial occlusive disease. The aim of surgery is limb salvage. Ms. Sieggreen carefully outlines nursing interventions on a daily basis from the first postoperative day to discharge planning.

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Care of the Patient with Esophageal Cancer

by Lisa Caffery, BSN, RN, C, Cm, CGRN

To earn CE credits, refer to page 7

Approximately 11,000 new cases of esophageal cancer will be diagnosed this year.¹ The diagnosis can be devastating. Because the disease is usually discovered at a late stage, the five-year survival rate is only 10%.¹

Caring for a person diagnosed with esophageal cancer is a multidisciplinary effort. The expertise of all team members is needed to address the needs of patient and family.

Etiology

Most esophageal cancers are diagnosed in the sixth and seventh decades of life. The diagnosis is usually made when the patient presents complaining of dysphagia, at which point the circumference of the esophagus has become occluded by about 90%. Weight loss and chest pain can also be presenting signs.

Esophageal cancer is more common in African-American people, and it occurs more often in males than females. Possible causes are heavy alcohol consumption, smoking, and a diet high in tannins (found in teas), phenols, and nitrosamines (products of the transformation of nitrate and nitrite food additives).³

Barrett's esophagus, which is thought to result from gastroesophageal acid reflux, is another possible cause.³ The acid stasis provokes cellular changes in the lower esophagus that may be a precursor to adenocarcinoma.³ Most esophageal cancers are squa-

mous and are found in the body of the esophagus.³

Diagnosis

Esophageal cancer is difficult to diagnose in the early stages, because the symptoms tend to be nonspecific. Unlike the case with other cancers, there is no routine screening exam available in the United States.⁴

In China, where esophageal cancer is endemic, routine screening is available.⁴ The test involves swallowing a nasogastric (NG) tube with netting attached to obtain cells for cytology. Diagnosis based on such screenings is 90% accurate.⁴ In countries with screening procedures, there is a high cure rate with surgery, but in countries with no routine screening, diagnosis is made later in the disease development, when a cure is unlikely.⁴

Metastatic areas arising from tumors in the cervical esophagus commonly include the carotid arteries, pleura, laryngeal nerves, and trachea. Tumors of the mid-esophagus include the main stem bronchi, thoracic duct, aortic arch, subclavian artery, intercostal vessels, azygous veins, and right pleura, while the distal esophagus is most likely to have metastasis to the left pleura, pericardium, and descending aorta.¹ Other areas of metastasis include the liver, lungs, stomach, peritoneum, kidney, adrenal glands, brain, bone, and lymph system.¹



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Lower Extremity Arterial Reconstruction

by Mary Sieggreen, MSN, RN, CS, NP

People who complain of foot pain at night (rest pain) or calf muscle pain when walking (claudication) may suffer from atherosclerotic arterial occlusive disease. Typically, these patients are elderly smokers with diabetes or renal failure.

Improving blood flow often lessens pain, increases mobility, and allows ulcerated tissue to heal. Life expectancy of people with advanced atherosclerosis is poor, but surgery or angioplasty may improve quality of life.

Pathophysiology and symptoms

Atherosclerotic lesions form most often at bifurcations and areas where vessels change size or position. Turbulance at these points may induce intimal damage. Blood viscosity increases as the rate of flow slows. Dehydration increases blood viscosity and provokes symptoms in people with arterial occlusive disease.

Claudication, a common symptom, is reported as calf-muscle cramping after walking a predictable distance. It may occur in the thigh or buttocks. This pain is reproducible and relieved when walking stops. If cramping continues or the person must sit to obtain relief, pain is probably neurogenic rather than vasculogenic.

Rest pain is a symptom of severe ischemia. Patients complain that pain across the dorsum of the foot awakens them at night. Walking, due to the effects of gravity and increased distal blood pressure, may relieve pain. People with diabetic neuropathy often have no pain, even when severe, open ischemic ulcers are present.

Diagnostic work-up

Palpating pulses

A significant finding is the absence of foot pulses. Palpate all pulses bilaterally on each patient visit. People with claudication may have foot pulses at rest that diminish or disappear with exercise.

Doppler

Doppler signals demonstrate arterial wall changes. As disease progresses and the arterial wall becomes less compliant, the

triphasic Doppler signal has a biphasic or monophasic signal. Changes are recorded on waveform tracings. Doppler signals are recorded for femoral, popliteal, posterior tibial, and dorsalis pedis arteries.

Ankle brachial index

The ankle brachial index (ABI) indirectly measures distal perfusion, while the patient is supine. The higher of the two brachial pressures is divided into ankle pressure of the leg in question. The expected A:B ratio is 1. An ABI of 0.8 is considered as normal. People with claudication may

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have a normal resting ABI that significantly drops after exercise. Patients with rest pain usually have an ABI \leq 0.4. ABIs are falsely high in diabetic patients.

Arteriogram

The arteriogram determines the location and extent of lower-extremity atherosclerotic disease. This “gold standard” is not without risk, including hematoma or hemorrhage at the puncture site, renal impairment, distal plaque embolism, and anaphylactic reaction to the dye. Risks vary, depending on location and physician expertise – those with the most experience have fewer adverse events.

If serum creatinine is high, fluids may normalize creatinine levels before arteriography. Intravenous and oral fluids after the procedure dilute the dye and minimize renal effects.

Treatment

Indications for surgery

Gangrene, ischemic rest pain, non-healing ulcers, and acute arterial occlusion are indications for lower-extremity bypass surgery. Dry gangrene without infection does not require urgent attention, as it may remain stable for a long time. Gangrenous areas must remain dry, because wet tissue can get infected. Wet gangrene should be debrided and revascularized, if indicated.

Ischemic rest pain is a limb-threatening condition that requires urgent attention. Rest pain heralds oncoming tissue death. Non-healing ulcers have a high risk of infection. They will not heal with a proximal arterial occlusive lesion. Acute arterial occlusion can be caused by thrombus within the vessel lumen or embolus from the heart or atherosclerotic aorta.

Surgical preparation

Patients who require a lower-extremity bypass operation are usually elderly. Their response to stress and systemic functions differ from younger patients.

People with atherosclerosis of the lower extremities are at a high risk for cerebral and cardiovascular disease. A cardiac evaluation is necessary before surgery. Myocardial infarction is the major cause of death in vascular surgery.

Physical examination includes listening to carotid bruits and asking about transient ischemic attacks (TIAs). Some people may brush off transient symptoms as insignificant.

Bypass surgery

Bypass surgery is the most durable vascular procedure that restores blood flow to stenotic arteries. Bypass grafts can extend anywhere from the aorta, all the way to the plantar arch. The preferred graft material is autogenous vein from the legs or arms. Prosthetic grafts may be used when no vein is appropriate. Synthetic grafts are not used for distal bypasses to the foot, as the patency rate is unsatisfactory.

Veins are closer to the skin than arteries; it is easier to palpate the pulse of an in-situ graft. However, it is also easier to injure the artery from external compression. If wound healing is problematic, the graft is at risk.

In a reversed vein bypass, the vein is removed, reversed, and anastomosed to the

artery. The valves are not removed, but a discrepancy may exist between the size of the vein and the anastomatic sites of the recipient artery.

Balloon angioplasty/stenting

Single, discrete arterial lesions may be amenable to balloon angioplasty and/or stent placement. Short lesions have better outcomes than long or multiple tandem lesions. Atherosclerotic plaque is not removed by balloon angioplasty; it is compressed against the vessel wall.

Balloon angioplasty may be recommended for patients who cannot withstand lengthy anesthesia or who have surgically inaccessible lesions. Balloon angioplasty has been augmented by the use of stents. The long-term patency of stenting is unknown.

Postoperative care

The goals of nursing in the postoperative period are to stabilize the patient, anticipate and prevent complications, and promote recovery. Surgery and angioplasty aim to restore adequate blood flow into an ischemic limb, so the patient can resume functional activity. Postoperative care is planned with this aim in mind. Nurses should check nursing admission databases and medical records to determine the patient's preoperative status.

First Postoperative Day

Immediately after intervention, vital signs are assessed every 15 minutes for one hour, then every hour for the first 24 hours or more, until the patient stabilizes. Circulation is checked by palpating all pulses every hour.

After in-situ bypass operations, pulses are assessed along the vein graft. Its exact location should be noted by the surgeon. Nurses should document the most distal, palpable pulse. Changes in temperature, color, sensation, and motion of the leg, foot, and toes should be checked every 15 minutes. This information is recorded and reported to each oncoming shift.

Changes in pulses, temperature, color, and sensory or motor activity are reported immediately. Early intervention is more likely to result in a favorable outcome.

Pain

Postoperative pain may emanate from the surgical incision or reperfusion edema. Patients may describe the sensation as sharp or burning. Patients rate their pain on a scale from 0 to 10; zero represents no pain, 10 is great pain.

Pain is best managed by epidural infusion. Medications are titrated to relieve pain

and minimize side effects. Itching is common with epidural analgesia and a standing order for an antihistamine is usually needed. A stool softener can reduce the constipating effects of analgesia.

Activity

Patients may spend the first postoperative day on bedrest. Walking should begin on the second postoperative day. When not walking, patients should elevate the operated leg to reduce edema, which causes pain and interferes with wound healing.

Incision management

The incision should be kept dry. Watch for drainage, redness, or swelling. Carefully check the incision line for swelling that may cause skin necrosis. Prevent any non-healing ulcers on the same limb from contami-

Abdominal support

(binder) may help

deep breathing

and coughing.

nating the incision.

Groin incisions are particularly problematic. The groin is a common site of wound breakdown, due to natural moisture from the eccrine and apocrine sweat glands. Incisions must be protected by dry gauze, which is placed between the groin folds and lower abdomen. To secure dressing, avoid using tape. Gauze rolls, netting or tape-free (Velcro[®]) dressing holders are recommended.

Neurologic status

Neurologic status is checked every hour for the first 24 hours. Routine postoperative orientation and level-of-consciousness checks are combined with a motor and sensory assessments of the leg and foot.

Swelling can cause compartment syndrome in the affected leg. Symptoms include tense muscle tissue, pain, paresthesias, and decreased motor function. When diagnosed, emergency fasciotomy is required to relieve pressure. Treatment delay may cause permanent nerve and muscle damage. Any change in sensation should be reported immediately.

Patients who complain of toe or foot pain should be assessed for distal embolization. Surgical manipulation may loosen bits of

atherosclerotic plaque, which lodge in small, distal arteries. Tissue fed by the artery becomes ischemic. The patient develops blue, painful areas, often first noticed at a toe tip. Treatment is symptomatic, but tissue is monitored closely for ischemic changes.

Medications and fluid management

Effects of drugs and anesthesia may be exaggerated in the elderly due to diminished liver function and decreased gastric motility. Postoperative drugs may include antihypertensives, antilipids, and anticoagulants. Their effects should be monitored carefully.

Oxygen is ordered immediately after surgery. Patients may continue oxygen in the acute care unit and after discharge.

Intravenous dextran may be given in the recovery room or ICU to prevent platelet thrombosis. After vascular surgery, patients are prescribed daily aspirin to reduce intravascular platelet aggregation.

A fluid volume deficit may occur postoperatively due to perioperative bleeding or third spacing. Vital signs, such as blood pressure, heart rate, and pulmonary wedge pressure, if a catheter is in place, are monitored closely. Urine output is measured hourly. Fluids should be replaced with crystalloids. Patients are assessed for signs and symptoms of bleeding.

Nutrition

While on mechanical ventilation, the patient's nutritional intake is limited. After one to two days, parenteral nutrition is considered. When oral intake is possible, the patient is given ice chips, fluids, and food, as tolerated. The gastrointestinal tract of elderly patients absorbs less vitamins and minerals, which may lead to impaired wound healing and a higher risk of infection. Supplements should be considered.

Complications

Myocardial infarction (MI) is the most common cause of postoperative death. Elderly patients should be questioned carefully, as signs or symptoms of dyspnea, syncope, stroke, or gastrointestinal distress may indicate MI. The classic symptom of chest pain is often not present.

Other age-related complications include pulmonary and gastrointestinal problems. Respiratory muscles atrophy with age, leading to chest wall rigidity and a reduction in coughing effectiveness. Abdominal support (binder) may help deep breathing and coughing.

Patients are checked hourly for bleeding or hematoma. Report uncontrollable bleeding or oozing immediately. Hematoma

may cause compartment syndrome or wound disruption.

Patients who have vascular surgery are often at high risk for pressure ulcers due to reduced mobility, age, and decreased arterial flow. Prophylactic nursing interventions include a pressure-reduction mattress overlay and heel elevation.

Patients may be on a ventilator postoperatively. Once it is removed, incentive spirometer should be used during waking hours to reduce the risk of pulmonary complications. Intermittent compression pumps may help to prevent deep vein thrombosis. Ideally, patients should sit up and walk on the first postoperative day.

Second postoperative day to discharge

Incision

Wounds are inspected for drainage, peri-incisional necrosis, and limb edema. Significant limb edema is not unusual. If the incision crosses the popliteal area, it becomes painful for patients to bend the knee while walking. If the patient had a previous vascular operation or impaired mobility, a physical therapy consultation is indicated.

Dressings are discontinued when wound drainage ceases. If a groin incision breaks down, notify the surgeon immediately. A prosthetic graft under the incision may become contaminated and need removal at the risk of limb loss.

Pain

An epidural catheter may stay in place postoperatively for one to three days, depending on the patient's pain tolerance and surgeon's preference. Patient-controlled analgesia may be used as first-line intervention or started after epidural removal. Oral medication may be ordered immediately after epidural removal for patients with minimal pain. To hasten walking, the patient should be pain-free.

Medication and fluids

Intake and output are carefully monitored immediately after surgery. Weight is compared to baseline weight at admission to determine fluid retention. The patient's diet is resumed as soon as possible. After abdominal surgery, oral intake is resumed when bowel activity returns.

Patient/family education

Patient and family education can assure a smoother hospital and post-discharge course. Before surgery, patient and family members receive information about ad-

Advice for patients

1. Be active! Frequent short walks will reduce edema. Do not lift more than 10 pounds. Avoid lengthy car rides or sitting spells.
2. Do not drive for at least 6 weeks. Place a pillow between the abdomen and seatbelt to protect an abdominal incision from trauma.
3. Bathing is restricted to showers, if wounds are closed or not draining. Avoid soaking or baths.
4. Keep the incision dry. Dressings are only needed for open wounds. Call the surgeon if any drainage, redness, or increase in tenderness occurs. The affected leg may be swollen for many days after discharge. Leg elevation and walking will reduce swelling.
5. Palpate pulses over the grafts. Report loss or changes of pulse to the surgeon immediately.
6. Smoking is strongly discouraged. Persons who continue to smoke after bypass surgery have a higher risk of graft failure.
7. Meticulous foot care must continue. Ulcers must be managed, and vigilant monitoring for new lesions is essential. Tape-free dressing holders may help prevent additional trauma to the site.
8. Call the surgeon if there is any infection, loss of pulses, decrease in skin temperature, or leg pain distal to the graft.
9. Schedule a follow-up visit for 2 to 3 weeks after discharge.

vanced directives, pre- and postoperative expectations, pain management, and incision care. Families are encouraged to remind the patient to keep the operative leg straight and elevated, when out of bed.

If heparin anticoagulation is used postoperatively, serum platelets must be monitored for thrombocytopenia. If the patient's temperature is high, a fever work-up is performed, including complete blood count, chest x-ray, and urinalysis.

Anticoagulation may be indicated, if the patient had previous graft occlusion. Otherwise, the patient goes home on daily aspirin. Prophylactic antibiotics are administered to patients with artificial grafts whenever an invasive procedure is performed.

Discharge planning

Patients are ready for discharge if the temperature and vital signs are stable. Wounds should be clean and dry. Oral medications are used for pain management. Patients should walk independently, have full bowel and bladder function, and eat adequate meals.

Patients with problem wounds, multiple medical problems, or no one to provide post-discharge care may benefit from home-care nursing. Home physical therapy may speed the return of function. Patients should be assessed for equipment needs, such as a cane, walker, or special orthopedic appliances.

Conclusion

An arterial bypass is a poor substitute for a natural arterial conduit. Patients must understand that lifestyle changes, such as a cholesterol-lowering diet, weight loss, exercise, and smoking cessation can slow atherosclerotic progression. Patients who have bypass surgery need regular surveillance. Unfortunately, the benefits of arterial bypass surgery do not last indefinitely.

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Treatment options

The primary treatment of esophageal cancer is surgery, with the objective of either palliation of symptoms or cure. The procedure of choice is an esophagogastrectomy. This involves resection of the tumor and mobilization of the stomach with anastomosis to the remaining portion of the esophagus.

The surgical approach depends upon the location of the tumor. There are currently three approaches being used: left thoracotomy with a thoracoabdominal incision; right thoracotomy with laparotomy; or both a cervical and an abdominal incision. Right thoracotomy with laparotomy is the standard approach used by most surgeons. The laparotomy permits evaluation of the abdominal cavity for metastasis. Left thoracotomy facilitates a higher intrathoracic resection of the esophagus and involved areas. The neck incision allows for access to cervical esophageal tumors and resection of the area.⁵

Reconstruction after esophagectomy can be achieved by various procedures. If a gastrectomy has been performed previously or the stomach is not suitable for reconstruction, a colon interposition might be done. This usually includes a vagotomy with pyloroplasty or pyloromyotomy.¹

A jejunostomy tube is placed so that tube feedings can be initiated early in the postoperative period. An NG tube will be inserted for decompression and should not be manipulated postoperatively. A chest tube will be inserted if the pleural space has been entered. These three tubes should be securely held in place; frequently, an elastic holder with a storage pocket will be placed on the patient to secure the NG or jejunostomy tube. An asogastric holder is commonly placed on the nose to prevent manipulation of the NG tube, while a chest tube is held securely in place with tape.

Prior to surgery, the patient might undergo chemotherapy and/or radiation therapy. The goal of this treatment is to reduce the size of the tumor, allowing for easier resectability and relief of symptoms. The chemotherapy protocol most often used involves cisplatin and 5 fluorouracil (5-FU),¹ a combination that has been shown to enhance survival and to reduce tumor recurrence.

The goals of radiation therapy include reduction of tumor size, reduction of distant metastatic spread, and prevention of tumor invasion into adjacent structures not accessible to surgical intervention.¹

High-dose radiation produces the best

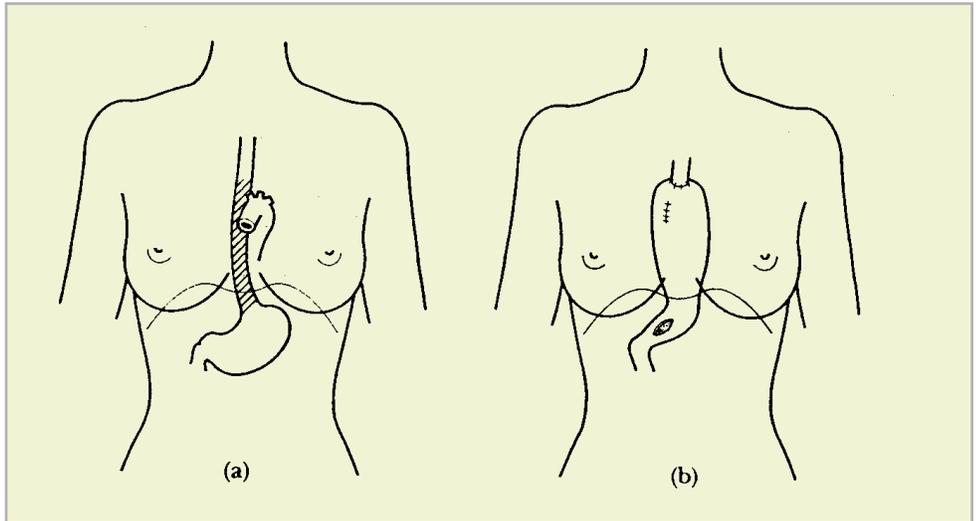


Figure 1. The technique of esophagectomy for cancers involving the mid-esophagus. (a) The extent of esophagus removed is shown by the darkened area. (b) The esophagogastrostomy above the aortic arch and pyloroplasty is illustrated.

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outcome, but patients with significant weight loss and high-grade obstruction might not respond well. The radiation is usually given over four weeks, with surgical intervention, if indicated, four to six weeks after the end of treatment.¹

Radiation can be given intraoperatively or during the postoperative period. Intraoperative therapy is high-dose radiation administered directly to the site. Radiation administered postoperatively is necessary for patients with positive tumor margins or positive regional lymphnodes.¹

Patients must be assessed for complications related to radiation therapy, such as pneumonitis; pericarditis; esophagitis; tracheal strictures; and fistulas in to the trachea, bronchus, or aorta.¹

Pre-operative teaching

Preoperative teaching is, as always, essential. The patient and family members must be included in all aspects of this.

It is the physician's responsibility to explain the surgical procedure. Patients with esophageal cancer need general pre-op instructions with additional information related to the specific surgical procedure to be performed. As the nurse caring for the patient and family, you will be reinforcing this information.

The pre-op assessment includes careful evaluation of pulmonary, cardiovascular, and nutritional status.³ A nutritional assessment should be done prior to chemotherapy and/or radiation therapy, and a registered dietitian should be consulted about nutritional supplements. Oral supplements or tube feeding might be needed during this time.

Patients and their families need to know that an NG tube will be in place, as will

Foley catheter, intravenous access, jejunostomy tube for tube feedings, chest tube, and possibly a tracheostomy tube, if the larynx is removed.⁵

The patient must be instructed about the importance of early ambulation to prevent pulmonary complications and thrombus. Pain control can be achieved through intramuscular, intravenous, or epidural methods. Adequate pain control is essential to recovery and to decreasing the possibility of postoperative complications.

Postoperative care

Immediately postop, the patient might be transferred to the ICU for 24 to 48 hours.³ Along with the usual hemodynamic monitoring done during the post-op period, the patient is also monitored for signs of potential¹

Life-threatening complications

A chest tube will have been inserted, if a thoracotomy was performed. The tube might be connected to suction or left to gravity drainage. It is important to assess the dressing for drainage and to replace loose tape. The tubing should remain free of kinks and dependent loops. The area around the chest tube should be palpated for subcutaneous emphysema. The patient must be assessed for any signs of respiratory distress, and distress or subcutaneous emphysema should be reported to the surgeon as soon as possible.

The drainage from the chest tube might be bloody initially, but it should become serosanguineous within a few hours postoperatively. During the first postoperative day, expect drainage amounts of 100-200mL/hr. This amount should decrease

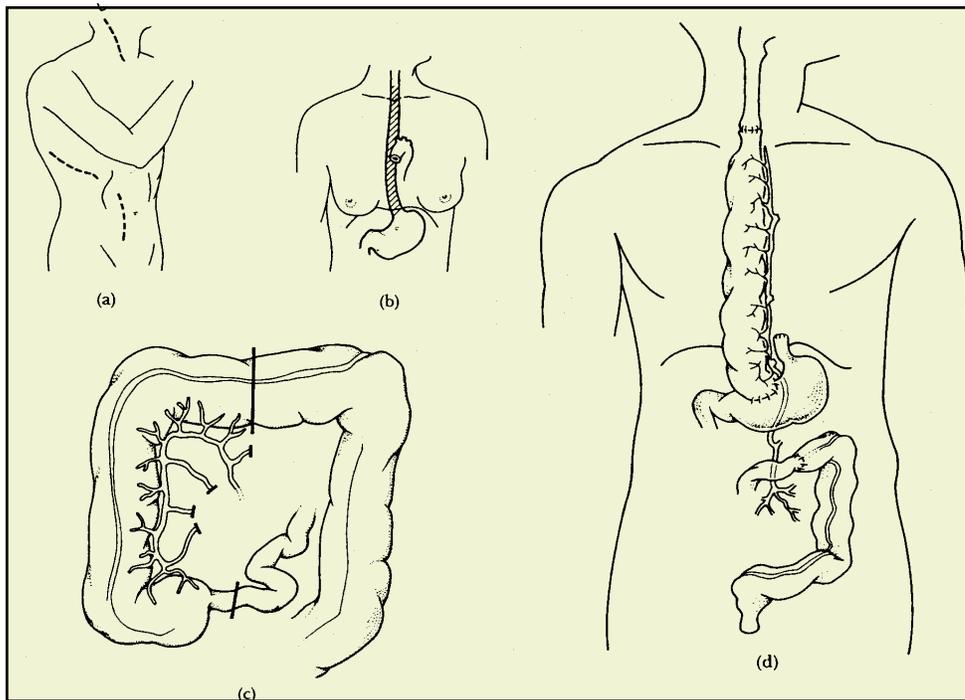


Figure 2. A right colon substernal transplant and total esophagectomy. (a) The cervical and abdominal incisions are made at the first stage of the operation. The right thoracic incision is used at the second stage to remove the esophagus. (b) The right colon on a pedicle consisting of the midcolic artery and vein is illustrated. (c) The completed operation is shown.

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over the next several days.³ Any increase in bloody, purulent, salivary or excessive drainage might indicate a complication and should be reported at once to the surgeon.⁵ The tube may be left in place until an astomotic patency is demonstrated, regardless of whether there is any drainage.³

Patients are at risk for developing anastomotic leaks and fistulas. Monitoring patients for anastomotic leaks requires knowing the type of surgical procedure performed, so that the anastomosis sites are identified.

General signs of anastomotic leak are pain, fever, and pleural effusion. A leak of a thoracic anastomosis is indicated by excessive bloody or purulent drainage from the chest tube. A pneumothorax or hydrothorax canal also indicate a thoracic leak.⁴ Indications of an intestinal leak are diffuse abdominal pain, which is worse with movement, distention, nausea, vomiting, and decreased or absent bowel sounds.⁶

Maintaining patency of nasogastric tubes and/or gastrostomy tubes will help to prevent the build-up of tension and pressure at the anastomotic site.³ The tubes should never be manipulated except by a physician.¹ The use of a gastrostomy tube holder will reduce likelihood of patient tampering. The patient is maintained on strict NPO status until the seventh postop day, when a Gastrografin swallow is performed. The Gastrografin will reveal an anastomotic leak, if one is present. If there is no leak, then

the tube will be removed and oral feedings will be started. The chest tube will be removed when drainage has decreased and no evidence of a leak is found.¹

A fistula canal so occur during the postop period. Indications of fistula formation are fever, tachycardia, tachypnea, and malaise. Tracheoesophageal fistula formation may be indicated by pneumonia or respiratory difficulty. Signs of a cutaneous fistula include a suture-line inflammation, drainage, edema, and necrosis.⁴ Prevention of fistula formation is the same as for anastomotic leaks.

Respiratory complications can be reduced or prevented with early ambulation, aggressive pulmonary care, and antibiotic therapy.

Patients with esophageal cancer typically enter surgery in a poor nutritional state. Enteral feedings via the jejunostomy tube should be started as soon as possible postop. Enteral feedings are preferable, since they maintain gastrointestinal integrity and reduce translocation of bacteria.¹

Because of their poor nutritional status, patients are more susceptible to infections and should be monitored closely. Nursing assessment includes pulmonary auscultation and monitoring vital signs, edema, redness, or drainage from the suture line. The ability to inspect the wound site without causing additional trauma can be achieved by using a tape-free method to secure the

wound, such as a secondary wound dressing and a holder with Velcro® closures. If a segment of the colon is used to reconstruct or to bypass the esophagus, pulmonary hygiene, prevention of infection, reflux, control of odor, and nutrition are nursing priorities.⁵

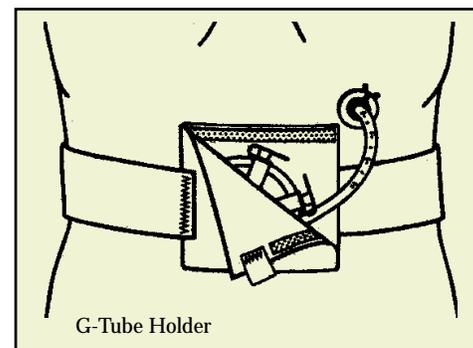
Postoperative nursing care of the patient with esophagogastrrectomy includes anticipation and prevention of reflux aspiration.⁵ The head of the bed should be elevated at all times. The patient should be upright when ingesting any foods and liquids and for 20-30 minutes after eating. Small, frequent meals are better tolerated than large meals. Patients should be taught to avoid bending at the waist or any activity that would increase intra-abdominal pressure.

Discharge planning

Prior to discharge, the patient and caregiver(s) must be instructed on four care issues: esophageal reflux, dysphagia, nutritional support, and wound care.

The patient and family should receive instructions regarding esophageal reflux brought about by removal of the cardiac sphincter. Some surgical techniques used during the procedure might minimize the severity of the reflux. In addition to surgery, anti-reflux measures, such as dietary modification, postural changes, and medications might be used.³ Anti-reflux measures include eating small, frequent meals; eliminating spicy, acidic, and fatty foods and beverages such as coffee, tea, cola, and alcohol. Instruct patients and caregivers that patients should eat in an upright position and remain upright 30-60 minutes after the meal. The head of the bed should be elevated on six-inch blocks to help reduce reflux at rest. The medications commonly ordered are those that reduce acid production and increase gastric emptying.

It is not uncommon for patients to experience dysphagia postop. The dysphagia is usually due to the development of a stricture at the esophageal anastomosis. The patient must report this symptom to the physician as soon as possible, since it could



mean the recurrence of disease.³ The treatment of the stricture is esophageal dilation.

Patient and caregivers should be instructed to check the incision daily for redness, drainage, or swelling. These signs should be reported to the surgeon as soon as possible.

If an anastomotic leak has occurred during the patient's hospital stay, the surgeon might have reopened the incision to allow for drainage. The incision could need to be irrigated and packed at the bedside as well as at home after discharge.⁵ A home-care referral might be needed to assist patient and caregivers with this task.

If the patient is to be sent home with total parenteral nutrition, enteral feedings, or wound care, a referral to a home-care agency will be needed. Patients and caregivers must understand how to perform the procedures involved in the delivery of TPN, tube feeding, or dressing changes before discharge from the hospital. The home-care nurses will continue the teaching started in the hospital as well as address new issues that arise. For example, if an NG tube is necessary, the clinician may instruct the patient or caregiver to secure the tube with a special NG tube holder. If a gastrostomy or jejunostomy tube is in place, it can be secured with a soft pouch with elastic waistband, stores the NG tube and prevents the tube from being accidentally dislodged or pulled out by a confused or agitated patient.

Referrals to cancer support groups, the American Cancer Society, social workers, dietitians, and counselors might be needed to make the transition home a smooth one.³ These groups can provide ongoing support as the disease progresses.

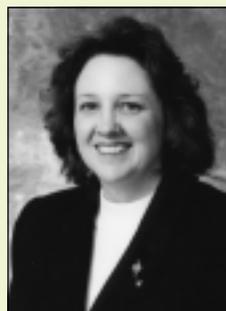
Conclusion

Caring for a person diagnosed with esophageal cancer is a multidisciplinary team effort. The expertise of all team members is essential to address the needs of patients and their families. The goal of the team should be to provide the patient as much quality time as possible.

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

1. Identify possible causes of esophageal cancer.
2. Describe warning signs of esophageal cancer.
3. Describe possible treatment options for patient with esophageal cancer.
4. Develop a discharge plan for patient undergoing esophagogastrectomy.
5. Identify three postoperative complications following esophagogastrectomy.

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1. Esophageal cancer commonly occurs in this decade of life:

- A. Third & fourth
- B. Eighth & ninth
- C. Sixth & seventh
- D. Second & third
- E. None of the above

2. Presenting signs and symptoms of esophageal cancer may include:

- A. Dysphagia
- B. Weight loss
- C. Chest pain
- D. All of the above
- E. None of the above

3. The primary goal of pre-operative chemotherapy and radiation is:

- A. Cure of disease
- B. Palliative treatment
- C. Reduce the size of tumor
- D. Enhance survival and reduce tumor recurrence
- E. C and D

4. Possible complications of radiation therapy are:

- A. Pneumonitis
- B. Esophagitis
- C. Fistulas into the trachea, bronchus, or aorta
- D. All of the above
- E. None of the above

5. The preoperative assessment of a patient with esophageal cancer includes:

- A. Nutritional assessment
- B. Cardiopulmonary assessment
- C. No special preop assessment is needed.
- D. A and B
- E. None of the above

6. Preoperative teaching for the patient undergoing an esophagogastrectomy includes:

- A. The importance of bedrest
- B. The type of equipment that may be used postoperatively
- C. The importance of early ambulation
- D. The importance of pain management
- E. All of the above except A

7. Potential postoperative complications following an esophagogastrectomy include

- A. Fistula formation
- B. Respiratory complications
- C. Anastomotic leak
- D. Wound infections
- E. All of the above

8. Discharge planning for the patient and family includes information on:

- A. Esophageal reflux
- B. Dysphagia
- C. Nutritional support
- D. Wound care
- E. All of the above

9. All of the following are esophageal reflux precautions except:

- A. Maintaining the head of the bed in an elevated position at all times
- B. All food and liquids ingested in an upright position
- C. Eating highly seasoned foods.
- D. Remaining in an upright 20-30 minutes after eating and drinking
- E. Eating small frequent meals

10. Referrals to which of the following are appropriate:

- A. Cancer support groups
- B. Home care for nursing and dietician support
- C. Medical social worker
- D. Referrals are not necessary
- E. All of the above except D.

11. Most esophageal tumors are located in which portion of the esophagus and are of what cell type?

- A. Cervical esophagus and of a mixed cell type
- B. Squamous cell and found in the body of the esophagus
- C. Adenocarcinoma and found in the body
- D. At the gastroesophageal junction and squamous
- E. None of the above

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

1	<input type="checkbox"/>	3	<input type="checkbox"/>	5	<input type="checkbox"/>	7	<input type="checkbox"/>	9	<input type="checkbox"/>	11	<input type="checkbox"/>																								
2	<input type="checkbox"/>	4	<input type="checkbox"/>	6	<input type="checkbox"/>	8	<input type="checkbox"/>	10	<input type="checkbox"/>																										

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 Agree					Strongly Disagree
2. Indicate to what degree you met the objectives of this program.						
■ Identify possible causes of esophageal cancer.	1	2	3	4	5	6
■ Describe warning signs of esophageal cancer.	1	2	3	4	5	6
■ Describe possible treatment options for patient with esophageal cancer.	1	2	3	4	5	6
■ Develop a discharge plan for patient undergoing esophagogastrectomy.	1	2	3	4	5	6
■ Identify three postoperative complications following esophagogastrectomy.	1	2	3	4	5	6
3. How long did it take you to complete this home-study program?	_____					
4. Have you used home study in the past? <input type="checkbox"/> Yes <input type="checkbox"/> NO	_____					
5. How many home-study courses do you typically use per year?	_____					
6. What other areas would you like to cover through home study?	_____					
7. Would you like to author a self-study program? <input type="checkbox"/> Yes <input type="checkbox"/> NO	_____					

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