

COLOSTOMY CARE

Abstract

A colostomy is a surgical procedure that involves creating an opening in the colon and attaching it to a surgically created opening on the surface of the abdomen. A colostomy requires the patient to make lifestyle changes and to learn specific self-care. The great majority of people adjust to these changes and do not have any significant limitations on what they can do. Aside from managing the colostomy, they live life exactly as they did before the procedure was done. The patient's physician or the ostomy nurse will provide the patient with information about the use of appliances, colostomy complications, diet, and exercise, but certified nursing assistants should have a basic understanding of those topics to support patient care.

Learning Objectives:

1. Discuss the reasons for and functions of a colostomy.
2. Discuss the responsibilities of a CNA when it comes to colostomy care.
3. Identify complications associated with a colostomy.
4. Identify activity and diet concerns of patients who have a colostomy.

Introduction

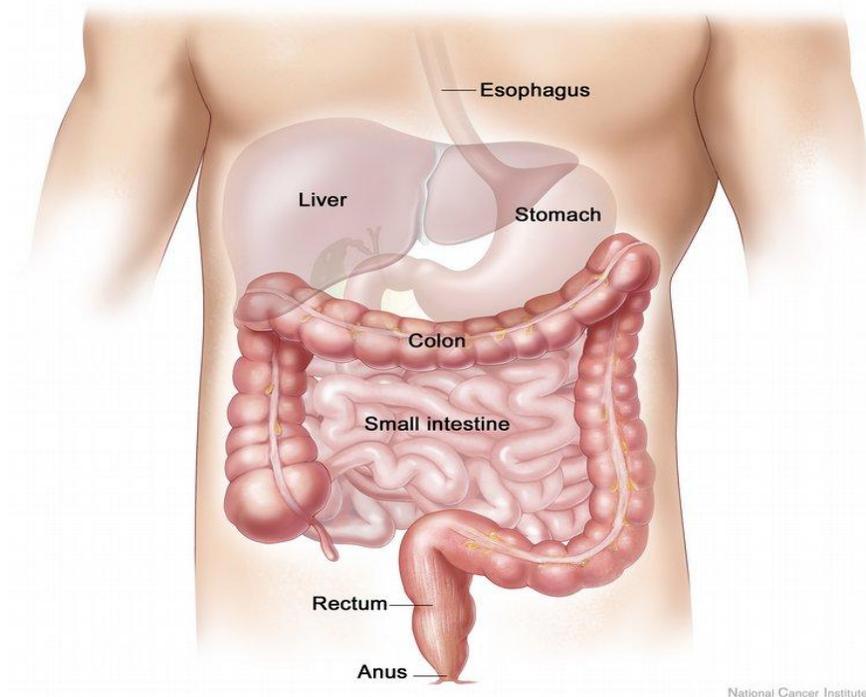
Ostomies are commonly performed surgical procedures, and the colostomy is perhaps the most common type that is done. Depending on the patient's clinical condition, colostomies can be permanent or temporary and there are several varieties of colostomies that can be performed. A colostomy is not very complicated to manage and many patients who have one can provide self-care. However, some patients, because of age, disability, or other limiting factors, cannot do routine colostomy care. This is an area of patient management commonly performed by certified nursing assistants (CNAs) caring for patients in an acute care setting and at home.

Gastrointestinal Anatomy and Physiology

The gastrointestinal tract begins with the mouth and the oral cavity and ends with the anus. The two basic functions of the gastrointestinal (GI) tract are: 1) intake and absorption of food and fluids, and 2) elimination of wastes. The intake of food and fluids begins in the mouth. Food is chewed and salivary juices begin to break down the food into usable nutrients. The process continues with further breakdown and digestion of food in the stomach. After the stomach, the GI tract continues with the small bowel.

The small bowel is a long, relatively narrow tube and most of the nutrients consumed such as carbohydrates, fats, proteins, minerals vitamins, *etc.*, are absorbed through the small bowel. The small bowel connects with the colon, which is also called the large bowel, and the colon connects with the rectum and the anus. Feces is formed and stored in the colon and expelled from the rectum and anus.

The primary function of the colon is to form and store feces, and it also absorbs or eliminates water, as the need arises. The colon is approximately five feet long. It is located in the abdomen below the navel and above the pubic area, extends across most of the stomach wall, and is divided into four sections. These sections are the 1) ascending colon, 2) transverse colon, 3) descending colon, and 4) sigmoid colon. After food has been broken down by the stomach and after the nutrients and most of the fluids have been absorbed by the small bowel, the remainder of what a person eats that cannot be digested passes from the small bowel into the colon. At that point, most of the remaining water is absorbed through the wall of the colon and feces is formed.



Forming the Colostomy

A colostomy is defined as *the attachment of a surgically created opening in the colon, to a surgically created opening on the surface of the abdomen*. The opening in the colon is called the *stoma*. The stoma creates a passage for feces that avoids the lower colon and the rectum. Instead of evacuating the bowels through the gastrointestinal tract and the rectum, feces are collected in an appliance that is fitted over the stoma.

There are many different types of ostomies that can be created, and they are named after the part of the body that is involved: for example, an ileostomy connects the part of the small bowel called the ileum to the abdominal wall and a urostomy connects the urinary bladder to the abdominal wall.

The word colostomy is formed by the prefix *colo*, referring to the colon; and the suffix *stomy*, which means making an artificial opening. A colostomy is usually done after bowel surgery or injury and may be temporary or permanent.

Types of Colostomies

Colostomies can be done in two ways. A *loop colostomy* is performed by taking a loop of the colon, making a surgical opening along a point in that loop, and then using sutures to attach that part of the colon to a surgically created opening, or exit point, on the abdominal wall. A *terminal colostomy* or *end colostomy* is performed by completely cutting through the colon, taking the end that has been created by this cut, and then using sutures to attach the resected end of the colon to the surgically created opening, or exit point, on the abdominal wall. In

either case, the result is the same; feces becomes diverted from the lower colon, the rectum, and the anus and emptied through the stoma.

Terminal or end colostomies are preferred because loop colostomies are difficult to fit with a bag and they are more likely to prolapse, as discussed below. As mentioned, some colostomies are temporary and some are permanent.

The primary function of a colostomy is to provide an alternative way of passing feces. Colostomies are performed for the treatment of a wide variety of clinical conditions but the two basic reasons for performing a colostomy are *rest* and *diversion*. Sometimes, rest and diversion are accomplished by this procedure.

Rest:

If the colon becomes obstructed, feces cannot pass through and eliminated. Also, there may be times when the colon is infected or injured and needs time to rest and heal. A temporary colostomy can be done to allow the feces to be passed while the cause of the obstruction is being corrected. A temporary colostomy can also be done to allow the colon to heal after an injury or to rest while an infection is being treated.

Diversion:

Sometimes the colon or another part of the GI tract is too damaged or diseased to be repaired and a part of it needs to be removed. If the patient needs to have part of the colon permanently removed, perhaps because of cancer in the colon, a colostomy will be performed in order

to allow the colon to function and for feces to be eliminated. This type of colostomy is permanent.

Specific medical conditions that may require a colostomy to be performed include: 1) Anal cancer, 2) Crohn's disease, 3) Colon cancer, 4) Diverticular disease, 5) Fecal incontinence, and 6) Rectal cancer. Depending on what part of the colon was used to create the colostomy, the stoma will be located on the right side of the stomach, the upper part of the stomach and near the midline, or on the lower left side of the stomach. For example, if the stoma was created from the ascending colon it will be located on the patient's right side.

After a colostomy has been performed, feces will be eliminated through the stoma, which is covered with an appliance. This appliance is a flat, transparent, flexible bag made of plastic. Most are about 5 inches wide and about 8-10 inches long. The appliance has an opening that fits over the stoma and this part of the appliance is attached to the stomach wall by an adhesive. It also has an opening at the opposite end that is used to empty the feces.

Colostomy Care

A colostomy requires the patient to make lifestyle changes and learn specific self-care. The great majority of people adjust to these changes and do not have any significant limitations on what they can do. Aside from managing the colostomy, they live life exactly as they did before the procedure was done.

After a colostomy procedure, the feces passes through the colostomy into an appliance, instead of being evacuated through the rectum. A

patient who has a colostomy should make sure to drink plenty of fluids to avoid being constipated, avoid foods that can cause constipation or diarrhea, and avoid foods that can cause gas. The patient must also learn how to care for the stoma and how to use the colostomy appliances. Finally, the patient should take reasonable precautions to protect the stoma from physical harm.

Apart from the simple requirements of colostomy management mentioned above, people who have a colostomy can eat a normal diet and exercise as tolerated within the guidelines provided by their health clinician. Specific issues relating to living with a colostomy will be discussed in a later section.

Although elimination through a colostomy does not put insurmountable limitations on a lifestyle, a colostomy does require specific care. The person who has a colostomy is no longer passing feces through the GI tract as he or she did prior to the operation. Because feces is passed through the stoma and collected in a pouch attached to the abdomen, there are certain considerations that impact the CNA's care of the patient. When a CNA is providing colostomy care for a patient, the CNA needs to be familiar with how to empty and change the colostomy bag, irrigation of the colostomy, complications associated with colostomies, and how to assess a patient who has a colostomy.

Providing colostomy care does not require a CNA to use sterile technique. The CNA should always use standard precautions when changing or emptying an appliance, irrigating a colostomy, or performing any other type of patient care.

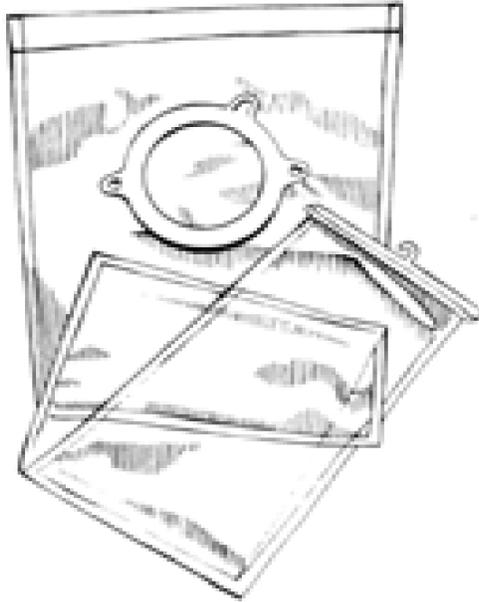
Managing the Colostomy Bag

The feces that are expelled from the stoma are collected by an appliance, which is often called a bag or a pouch. There are several different types of bags that can be used to collect feces. Depending on where the colostomy is, what type of feces and how regularly the feces is formed, the bag can have an opening at one end so that it can be emptied when the need arises. Occasionally, the colostomy bag can be disposable and can be removed and discarded when this is needed.

Most patients use a colostomy bag that is emptied and reused, and if the patient has a lot of liquid feces that is formed irregularly and unpredictably, a bag that can be emptied is definitely the best choice. The bags are attached to the skin around the stoma by using an adhesive ring that has a hole that fits over the stoma, and the bag is attached to the ring. The adhesive ring can be a separate piece that is applied independently or it can be a part of the bag.

It is recommended to change or empty the colostomy bag when it is about 1/3 to 1/2 full but of course this recommendation can be adjusted as needed. The weight of a bag that is too full can be distracting to the patient and although it is not likely to happen, a bag that is too full can pull down on the adhesive attachment and become loose. A bag that is too full can also pull on the adhesive and irritate the skin.

COLOSTOMY BAG



Emptying the Colostomy Bag:

Emptying the bag requires basic steps be followed and it is done through the following eight steps.

1. Wash the hands and put on disposable gloves.
2. Open the end of the bag. Most bags are closed at the end by a simple plastic clip.
3. Let the feces drain into an acceptable container.
4. If desired, the bag can be rinsed out with a large disposable syringe.
5. Close the bag.
6. Properly dispose of the feces.
7. Remove the gloves, dispose of them properly, and wash the hands.
8. Document the amount of feces that was emptied. If the feces was especially loose or watery or especially hard, this should be well documented, as well.

Changing the Colostomy Bag:

Changing a bag is straightforward and requires the following five steps.

1. Wash the hands and put on disposable gloves.
2. Remove the bag from its attachment ring.
3. Inspect the stoma and the skin around the stoma.
4. Clean the area with a mild soap and water or with the cleaning agent that has been recommended by the health clinician.
5. If a barrier cream or powder has been ordered, apply it to the area around the stoma. If cream or powder gets on the stoma, simply wash them off gently with gauze and water.
6. Put a new bag in place. If the adhesive ring is separate from the bag, this can be changed, as well.

There is a wide variety of colostomy appliances - adhesive rings, bags, skin protectors, *etc.*, that can be used, and it is not possible to provide detailed information here about how to work with all the available types of colostomy appliance and accessories. However, the basic process of changing and emptying a bag is the same regardless of the brand. Changing and emptying the bag will be done on a schedule that is determined by the ostomy nurse, the physician, or by the patient's needs and preference. The role of the ostomy nurse will be explained in a later section.

Checking the bag should be done at least once every eight hour shift, or according to the schedule that is specific to where a CNA works or to the patient needs.

Irrigation of the Colostomy

Patients who have a colostomy in the descending or sigmoid colon may need to have the colostomy irrigated. Irrigation is a procedure by which an irrigation solution - usually water - is introduced into the colon through the stoma. Irrigation can help certain patients establish a regular pattern of elimination because the irrigation solution fills the colon and stimulates the movement of feces into the appliance.

Irrigation is typically done an hour or so after a meal, but the schedule for irrigation will vary from patient to patient. Irrigation is a relatively simple procedure and it can be done in several ways, but the basics of the procedure are as follows.

1. Assemble the equipment. A container will be needed to catch the irrigating solution and the feces. Other equipment includes the irrigating solution, an irrigation bag and tubing, water-soluble lubricant, and an irrigating cone that is placed into the stoma. Irrigation can also be done with the patient sitting on the toilet or a bedside commode.
2. Wash the hands and put on disposable gloves.
3. Fill the irrigation bag with irrigation solution (there should be instructions on the patient's chart for the amount) and let it flow so that the attached tubing is filled. The bag should then be placed approximately 18 inches or so above the stoma.
4. Remove the colostomy bag, lubricate the cone and gently place it into the stoma. Attach the tubing from the irrigation bag to the irrigating cone.
5. Let the irrigating solution flow through the stoma. There should be instructions on the patient's chart that will instruct how fast the

solution should be infused. The irrigating solution should be comfortably warm and it should not be instilled too quickly. If the solution is too cold or flows in too quickly, the patient may develop cramping.

6. After the solution has all been instilled, wait for 20 minutes or so for the feces to be evacuated.
7. Finish the procedure by cleaning and drying the area around the stoma, inspecting the skin around the stoma, and closing the bag.
8. Discard the glove in the proper place and wash the hands.
9. Document what has been done.

The patient's health clinician or the ostomy nurse will specify what appliance should be used, what skin protectors should be applied, when the colostomy should be irrigated, and all of the other important aspects of colostomy care. These instructions and guidelines are specific to the needs of each patient and *should always be followed*.

The term ostomy nurse was used previously. These specialist registered nurses are more formally called wound, ostomy, and continence (WOC) nurses. Wound, ostomy, and continence nurses are trained and experienced in the care of patients who have colostomies, wounds, and continence problems, and their input is invaluable for providing colostomy care for the patient as well as family member support.

Colostomy Assessment and Complications

A colostomy creates an artificial opening in the abdominal wall that exposes the skin around the colostomy to adverse conditions. It exposes a section of the colon to an external environment, and

complications are an inevitable part of this procedure. Fortunately, colostomy complications are seldom dangerous. The following are the commonly encountered complications that a patient may experience.

Allergic Skin Reactions

Allergic reactions of the skin around the stoma are caused by the adhesive of the pouch or by the barrier creams or powders that are applied to protect the skin around the stoma. An allergic skin reaction can look very much like a mild skin irritation and it can be difficult to distinguish between the two; however, an allergic reaction is usually less painful, especially to the touch, than a mild skin irritation.

Patients will usually describe the sensation of an allergic skin reaction as irritation rather than pain. Also, the area of redness caused by an allergic reaction is often clearly marked in the shape of the pouch adhesive or by where the creams or powder were applied. Skin irritation patterns tend to be random and irregularly shaped.

Appliance Leaks

Appliance leaks are very common. They can happen because the appliance is not fitted properly, the seal between the skin and the appliance is not intact, the appliance becomes too full, or for other reasons.

Skin Irritation

One of the most common complications of a colostomy is skin irritation. Contact of the skin around the stoma with feces and bowel

contents is typically the cause of skin irritation, and this often happens when the colostomy appliance is not well fitted or cannot be well fitted; the latter is a particular problem if the patient is obese and skin folds prevent the appliance from being correctly applied. The issue is often made worse because in response to pain and discomfort, the aperture of the appliance is made bigger so that the irritated skin is not touching the adhesive that holds the bag in place. Unfortunately, although this spares the skin that is irritated, it exposes skin that was, to that point, intact and unaffected.

Skin irritation can also happen if the aperture of the appliance is too small and the adhesive contacts the stoma. Other causes of skin irritation include removal of the appliance without sufficient care, for example, pulling off a bandage too quickly, or if the patient does not have access to professional help with appliance fitting and stoma care.

Parastomal Hernia

A parastomal hernia occurs when a section of the bowel that is part of the colostomy below the opening in the abdominal wall protrudes into the abdomen around the area of the surgical incision. A parastomal hernia is recognized by a noticeable bulge in the stomach in the area surrounding the colostomy site. Occasionally the bulge caused by a parastomal hernia may only be seen when the patient is coughing.

Parastomal hernias are a common complication of colostomies. They happen because the surgical incision that is created for the bowel to be brought to the surface of the stomach weakens the muscles and tissues in that area. People who are obese and elderly patients are more likely to develop a parastomal hernia, and poor nutrition and the

use of immunosuppressant drugs also increase the risk. Parastomal hernias are unsettling for the patient but most of them are not medically dangerous, and can they be managed by using a hernia belt. If the hernia interrupts the blood supply to the bowel (a condition called strangulation), causes persistent pain, or causes a bowel obstruction the stoma may need to be surgically revised.

Infections

Infections are not as common as allergic reactions or skin irritation, but the warm and moist environment in and around the stoma and the presence of fecal matter can encourage the growth of microorganisms. Skin irritation also increases the risk of infection, as an intact skin is one of the body's primary defense mechanisms against infection.

Prolapse

Prolapse is a medical term that means *to fall out of place*. Prolapse of a colostomy stoma is a relatively common complication of colostomies. Typically the stoma of a colostomy should be even with the surface of the stomach or be just slightly above or below the surface. When the stoma of a colostomy has prolapsed it will protrude quite noticeably, sometimes as much as six inches.

A *fixed* prolapse happens when more of the colon was brought out past the surface than was necessary. Much more common is the *sliding* prolapse. This type of prolapse increases and decreases in length,

moving in and out at various times of the day when the patient coughs, shifts weight, or places strain on the abdominal wall.

Risk factors for a prolapsed stoma include advanced age, the location of the stoma, obesity, weak abdominal muscles, and loop colostomy. A prolapsed stoma can be quite dramatic to see and can be disconcerting for the patient, but they rarely cause serious harm or interfere with how well the colostomy functions. Occasionally the stoma can strangulate or a bowel obstruction can happen. If these occur the patient may have pain or the stoma may appear and feel abnormal, for example, the stoma looks dark or pale or it is cold or hot to the touch. If this occurs, surgical intervention may be needed.

Ischemia and Necrosis

Ischemia is defined as *lack of blood flow to an organ or tissue*, and necrosis is defined as *dead tissue*. Ischemia and necrosis are unusual complications of colostomies. A normal, healthy stoma should be red or pink, warm, and moist.

A stoma that is ischemic will be cold to the touch. The patient would have decreased sensation of the stoma (although the average stoma has little sensation at all), and the stoma would look pale or dusky. Necrosis would cause the stoma to look black and there would be no sensation.

Retraction

Retraction of a stoma occurs when the stoma is pulled abnormally far below the surface of the abdominal wall. Retraction of a stoma usually happens soon after the stoma has been created, but it can be a late complication. Since the opening of the stoma is below the level of the

abdominal wall, proper appliance fitting is difficult and feces and digestive juices contact the skin and cause irritation.

A CNA must be generally familiar with these complications, even if he or she does not have detailed knowledge about them. Most importantly, a CNA must be able to perform a basic assessment of a stoma, a colostomy site, and the patient; and to be able to recognize abnormal findings and make an appropriate referral if something is wrong.

When a CNA provides care to a patient who has a colostomy, the following steps should be followed.

1. Assess the skin around the stoma; look for area of redness, actual breaks in the skin surface, bleeding, signs of infection, *etc.*
2. Assess the stoma for color and overall appearance.
3. Document the amount and appearance of stool that is emptied.
4. Assess the patient for signs and symptoms of complications such as pain, appliance leaks, skin irritation, prolapse of the stoma, hernia, *etc.* Ask the patient if he or she is having any pain at the colostomy site or other difficulties with the stoma or the appliance. Determine if there is too much or too little stool being formed.

When a prolapse, retraction, or one of the other colostomy complications occurs, a CNA is not expected to provide immediate treatment for these complications, but there are some simple first-aid procedures that can be done. Again, it is more important for a CNA to know the patient, assess when something is wrong, and make the appropriate referral.

Lifestyle Issues and Colostomy Care

A colostomy does require patients to make lifestyle changes, but these changes are manageable for most people. A patient's health clinician or the ostomy nurse will provide the patient with information about the use of appliances, colostomy complications, diet, and exercise, but CNAs should have a basic understanding of those issues. People who have a colostomy may find a support group helpful for managing their day-to-day lives, for emotional and psychological support, and for finding practical information about colostomy care. The United Ostomy Associations of America has a list of ostomy support groups. The Association's website address is <http://www.ostomy.org/Home.html>, and the telephone number is 1-800-826-0826.

Ostomy Appliances

Selecting and using the proper ostomy appliance requires the input of a trained health clinician or an ostomy nurse; however, a CNA should ask the patient if he or she has any questions about using an appliance. If a patient has questions or concerns, a CNA may direct the patient to resources that are available. If a patient self-manages a colostomy, it is proper for the CNA to ask the patient if he or she may observe how the patient changes and empties the bag, and performs irrigation. This ensures that these procedures are being done correctly.

Complications

The patient does not need extensive information about complications associated with colostomies but should know what situations require

an urgent consultation with a health clinician or the ostomy nurse. In brief, the patient should seek help for any of the following reasons.

- There is evidence of a bowel obstruction.
- For significant pain in the area of the colostomy or in the abdomen.
- There is evidence of a parastomal hernia.
- There is skin irritation or a break in the skin.
- There is a problem with the appliance.
- There are signs and symptoms of infection.
- The stoma has prolapsed or retracted for the first time.
- The prolapse or retraction has become more severe.
- Stools are excessively loose or abnormally hard.
- The patient has questions about the colostomy or its care.

Diet

The patient who has a colostomy should approach diet in the same way as someone who has an intact bowel, and should eat what is enjoyed and avoid foods that cause problems. For a patient who has a colostomy, foods that might be best avoided would be ones that can cause constipation or loose stools or ones that cause gas. The problem of gas and odor is a concern for many patients.

Colostomy appliances are odor-proof and odor and gas can be controlled and managed. Certain foods are well known to cause gas and patients can avoid or limit their intake of them. It is helpful to know that there is a delay time of several hours between ingestion of foods that can cause gas and the production of gas, and patients can use this information to plan meals and social activities. There are also

special colostomy appliances that have built-in odor filters and deodorizers.

Physical and Sexual Activity

For most people who have a colostomy the only restriction on physical activity is the need to protect the stoma and the skin around the stoma. Stoma guards and prolapse belts are available that can be fitted over the stoma and protect it; these are especially helpful if the patient has a prolapse. There are also hernia belts that can be purchased and these will help if the patient has a parastomal hernia. Although physical activity is seldom limited in any significant way by a colostomy, patients should consult with a health clinician or an ostomy nurse on what they can and cannot do.

Patients may be prohibited from activities that place a large amount of stress on the abdominal wall, such as weightlifting. Bathing and showering can be done with the appliance on or off, and swimming can be done with the appliance on. There are no restrictions on sexual activity. Patients who have had a colostomy should not be given enemas, medications by the rectal route and should not have their temperature measured rectally.

Case Study: Complications of a Colostomy

The following case study was obtained from a PubMed search and discusses the case of an elderly female with complications to a colostomy site.

The authors reported on a 77-year-old woman who had a colostomy after resection of colon cancer eight years prior. She arrived to the

hospital complaining of 3-days of acute pain and swelling around her colostomy site. The pain actually spread to her left flank area.

The patient had been followed up for history of colon cancer through routine colonoscopy surveillance exams, and her last colonoscopy was 2 years ago. She was diagnosed then with diverticulosis (small outpouchings of the large intestine) all throughout her remaining colon.

A physical examination showed the patient had severe tenderness near the stoma site and corresponding swelling. The rest of her abdomen was normal, soft and with normal bowel sounds. The patient's vital signs were normal. Laboratory testing showed inflammation was present. Computed tomography imaging revealed inflammation around the stoma with diverticula.

The authors reported that a 2-step treatment was initiated with initial intravenous (IV) antibiotics over 10 days to address the infection. The patient was able to go home and rescheduled for repeat colonoscopy 2 weeks after hospital discharge. Again, diverticulosis throughout the colon was found. Elective surgery was carried out and a new end-colostomy was made at the same site. Patient was discharged on postoperative day 2 without any complications. Stoma therapists managed wound healing over the remaining 4 weeks.

Discussion

The authors stated that diverticular disease of the colon can be the reason for an emergency consultation, hospital admission and involves a high cost of healthcare in Western countries. This case report

showed a complication of acute diverticulitis around a stoma site a few years after the patient underwent a colostomy procedure. Residual diverticula in the remaining colon after surgery for colon cancer is a significant clinical finding that could lead to complications of infection, abscess formation and even bowel perforation. Clinicians should consider an end-colostomy diverticulitis when patients complain of symptoms of pain around the site, and in this case radiating to the flank area. The authors stated that this case highlighted acute diverticulitis those with a colostomy that has the potential risk of complications and that surgical treatment should be considered following antibiotic treatment when the patient first presents with acute symptoms.

Summary

A colostomy is the surgical creation of an opening between a section of the colon, which is then attached to a surgically created opening on the surface of the abdomen. The opening of the colon is called the stoma. Colostomies are performed to treat a wide variety of clinical conditions but the basic reasons they are done is to either rest the large bowel or divert the passage of feces. Colostomies are typically done as either a loop colostomy or a terminal colostomy, and they can be temporary or permanent.

Some patients can perform colostomy care unassisted, but others cannot and colostomy care is considered a basic skill that CNAs should know how to do. The basics of colostomy care have been discussed and include changing and emptying the appliance, irrigation, complications of a colostomy, and the assessment of the stoma and the surrounding skin.

The patient's health clinician or the ostomy nurse will specify what appliance should be used, what skin protectors should be applied, when the colostomy should be irrigated, and most of the other aspects of colostomy care. Colostomy care instructions and guidelines are specific to the needs of each patient and should always be followed. The assessment of a stoma and the surrounding skin should be done on a regular basis and any problems should be referred to a health clinician or an ostomy nurse. Complications associated with colostomies have been reviewed, and most of these complications do not cause serious harm nor are they dangerous. However, for any complication or suspicion of a complication the CNS should refer the concern to a health clinician or an ostomy nurse.