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AN ONGOING CE PROGRAM
of the University of Connecticut
School of Pharmacy

EDUCATIONAL OBJECTIVES

After completing the continuing education activity, pharmacists will be able to

- DISCUSS the diverse types of hemorrhoids and the grading system of hemorrhoid severity
- RECALL chronic and acute medical conditions and disease states that may contribute to the frequency and severity of hemorrhoids
- DESCRIBE pharmacotherapy and procedures available for the treatment of hemorrhoidal disease
- ANALYZE a patient's need for referral to a medical professional or self-care based on patient interview

After completing the continuing education activity, pharmacy technicians will be able to

- DESCRIBE the diverse types of hemorrhoids and the associated signs and symptoms
- RECALL available over-the-counter and prescription treatment options
- DISCUSS lifestyle modifications, dietary changes, and self-care options to relieve symptoms and reduce occurrences of hemorrhoids
- EMPLOY interview techniques to assess a patient's need for referral to a health care professional for evaluation

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You Asked for It! CE

Hemorrhoids: A Sensitive Subject

TARGET AUDIENCE: Pharmacists and pharmacy technicians interested in care for common problems in outpatient populations.

ABSTRACT: Hemorrhoids are completely natural anatomical structures that aid in the process of defecation. Hemorrhoidal disease results when hemorrhoids bleed or become swollen and prolapsed, leading to irritation and discomfort. Hemorrhoidal disease affects millions of people across the globe. Lifestyle changes and dietary modifications are often sufficient to resolve less severe cases. Over-the-counter treatment options provide moderate relief. More serious cases may require in-office or surgical procedures for removal. Certain acute and chronic medical conditions may contribute to the occurrence of hemorrhoidal disease. Situations exist in which symptoms of hemorrhoidal disease may mask underlying disease states leading to misdiagnosis and life-threatening complications. Patients may be reluctant to seek advice due to the sensitive nature of the topic. When patients do seek help, the pharmacy team can remind them that it is quite a common issue that should be addressed.

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FACULTY DISCLOSURE: Ms. Koivisto has no financial relationships with an ineligible company.

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INTRODUCTION

Hemorrhoids are often the "butt" of a joke. Some people also use the term "hemorrhoid" in a derogatory fashion to describe someone or something that is a "pain in the butt." While amusing in this sense, hemorrhoids are no laughing matter. Hemorrhoids have plagued millions of adults from all levels of society and have been a documented complaint throughout the history of medicine. Fortunately, hemorrhoids are typically mild and manageable and may resolve without intervention.

With access to medication profiles, community pharmacists often have insight into a patients' overall health and wellness. This gives them the unique advantage of knowing what disease states patients may have, and current medications that may put patients at a higher risk for hemorrhoidal disease. When patients seek advice on their first experience with hemorrhoids or express frustration over a recurring struggle with hemorrhoids, pharmacists need sufficient background knowledge to make an appropriate recommendation. Pharmacists should make the decision to suggest self-care or over-the-counter (OTC) treatment as opposed to referral to a physician based on information provided by the patient. Patients may be hesitant to discuss such a delicate topic. Pharmacists should be compassionate, discreet, and respectful when counseling. Emphasizing the incredibly widespread occurrence of hemorrhoids will help reduce any anxiety associated with addressing the issue. Patients may first approach technicians asking for guidance with products the pharmacy has available. Technicians need to be able to assist in locating products or referring to the pharmacist for recommendations.

Hemorrhoids affect a staggering number of people. Approximately 10 million people report the presence of hemorrhoids annually. That is roughly 4.4% of the population.[1] An exact number is difficult to determine, as patients often do not report the issue or seek medical care unless they are symptomatic.[2] Hemorrhoids primarily affect adults between the ages of 45 to 65 years. When considering healthy adults, the incidence between sexes is similar.[1] It is rare for hemorrhoids to occur in patients younger than the age of 20. Hemorrhoids occur more often in White people than in Black people. Socioeconomic status also impacts the likelihood of hemorrhoids with those of a higher socioeconomic status having a higher incidence.[3] This may explain the higher prevalence of hemorrhoids in developed countries compared to developing countries. Some researchers speculate that cultural differences in toilet habits in developing countries play a part in the reduced frequency.[4]

ANATOMY AND PATHOLOGY

Hemorrhoids occur naturally. They provide a cushion which, along with the internal anal sphincter, aids in defecation. The dentate line is an anatomical structure that separates the rectum and the anus. Internal hemorrhoids develop above the dentate line. Internal hemorrhoids can swell, then prolapse and appear below the dentate line. When this occurs, they are now considered external hemorrhoids. The hemorrhoidal plexus is a group of blood vessels that provides the blood supply. The hemorrhoidal plexus is also classified as external or internal depending on its physical relation to the dentate line.[5]

Hemorrhoids are typically asymptomatic, but hemorrhoidal disease is the condition that arises when hemorrhoids become symptomatic. Hemorrhoidal disease results from enlarged and displaced hemorrhoids, which are a consequence of weakened supportive connective tissue.[6] If the connective tissue becomes compromised, it can cause prolapse of the hemorrhoidal tissue. The most reported initial symptom is bright red blood in the stool. Patients also complain of itching and fecal soiling (involuntary or voluntary passing of stool into inappropriate places).[7]

Risk factors that play a part in connective tissue weakening include constipation, sedentary lifestyle, dietary choices, certain acute and chronic medical conditions, toilet habits, and family history. Constipation is the most discussed risk factor for hemorrhoidal disease. Constipation typically leads to straining during defecation and longer amounts of time spent on the toilet. In addition to reading, the modern-day habit of scrolling on cell phones while on the toilet compounds the issue.[8,9]

Hemorrhoidal disease involves the pathological progression of hemorrhoids to a potentially serious situation where rectal bleeding occurs, and pain and irritation develop. Whether in conjunction with a chronic disease or because of an acute condition, hemorrhoidal disease can significantly impact a patient's quality of life. Treatment options range from simple to complex and sometimes even outright bizarre. In some instances, hemorrhoids may not respond to conservative measures. In-office procedures and surgical options are available for more critical cases. Practitioners select the appropriate procedure based on hemorrhoid classification and patient eligibility depending on the presence or absence of contraindications.

PAUSE AND PONDER: What characteristics differentiate the types of hemorrhoids?

Hemorrhoids Can Be Internal or External

Internal hemorrhoids (i.e., those that develop proximal to the dentate line) are typically not painful and rarely clot or thrombose (a clot that reduces but does not obstruct blood flow).[10] Bleeding is the primary sign that internal hemorrhoids exist and most often occurs with defecation.[1] Internal and external hemorrhoids also differ symptomatically. Patients tend to self-report external hemorrhoids more often than internal hemorrhoids because of the general discomfort they experience. Somatic nerves, which supply the perianal skin, innervate external hemorrhoids resulting in pain.[1]

TABLE 1. The Goligher system[12]	
GRADE	**Description**
1	Bleeding, non-prolapsed
2	Prolapse on straining, but reduce spontaneously
3	Prolapse, requires manual reduction
4	Irreducibly prolapsing

The Goligher system, first proposed in 1980, further classifies and categorizes internal hemorrhoids based on severity and degree of prolapse.[11] **Table 1** (above) describes four grades of internal hemorrhoids based on this classification.[12]

The Goligher system, while widely used, may be outdated and has its limitations. It does not consider the patient's level of discomfort or related symptoms such as pain, itching, and soiling. The Goligher system also fails to account for other physical characteristics of the hemorrhoids, such as if they are isolated or circumferential (located around the anus). Providers should include these factors as part of the decision-making process when selecting treatment or determining if surgical intervention is necessary.[13]

The first and second stages typically necessitate medical treatment or in-office procedures, and the third and fourth stages often require conventional surgery. Personal, subjective matters are not part of the Goligher classification process. Given these inadequacies, subject matter experts have attempted to revamp the classification process to be more inclusive so that patient-specific criteria determines the treatment plan.[11]

Another classification system known as "BPRST" evaluates five characteristics: **B**leeding, **P**rolapse, **R**eduction, **S**kin tags, and **T**hrombosis. [11]

- **Bleeding**: assigned a 0 or 1 depending on the presence or absence of bleeding (e.g, B0 or B1)
- **Prolapse**: assigned a 0, 1, 2, etc. depending on the presence of prolapse and the number of piles affected. (e.g., P0, P1, etc.)
- **Reduction:** assigned a 0, 1, 2 according to reducibility. 0 for spontaneous, 1 for manual, 2 for irreducible.
- **Skin Tags**: assigned 0 or 1 for existence of symptomatic skin tags.
- **Thrombosis**: assigned 0 for absence of thrombosis and 1 for acute thrombosis.

The assessing clinician determines the presence or absence of these characteristics and quantifies them when appropriate. The BPRST classification system places patients into one of three clinical stages based on those physical findings. The clinical stage the patient is in determines recommended treatment options.

"A/CTC" or **A**natomical/**C**linical-**T**herapeutic **C**lassification aims to find a correlation between anatomical features, symptoms, existing disease states, contraindications, and specific treatment or surgery. This process cross-references patient characteristics against the indications for each procedure to find the best procedure for each patient, ensuring a successful outcome. This method also reduces the chances of recurrence and complications by matching patients to the most appropriate procedures based on individual situations rather than by a single feature.[14]

In addition to lifestyle factors, certain acute and chronic medical conditions can also elevate a person's risk of hemorrhoidal disease. One of the most problematic acute conditions is pregnancy. Hemorrhoids occur frequently during pregnancy, becoming more common during the third trimester. This is because increased intra-abdominal pressure occurs with enlargement of the uterus resulting in increased vascular engorgement (increased fluid in the uterus that causes tissues to swell or stretch). As the fetus grows and develops, the uterus also grows resulting in added weight increasing the pressure. This causes engorgement of the blood vessels. Frequently, hemorrhoids continue into the post-partum period, as the straining and pushing during labor and delivery further aggravates existing hemorrhoids.[15]

Chronic medical conditions can also make patients more vulnerable to hemorrhoidal disease. Typically, chronic conditions that result in hemorrhoidal disease are those that increase frequency of either constipation or incontinence (inability to control defecation), like Crohn's disease or ulcerative colitis.[16] Additionally, a condition called neurogenic bowel dysfunction can occur in patients suffering from Parkinson's disease or multiple sclerosis and those with spinal cord injuries. Neurogenic bowel dysfunction results in constipation and fecal incontinence. Parkinsons patients may experience this bowel dysfunction before the onset of neurological symptoms.[17]

PAUSE AND PONDER: What situations or consequences may arise when symptoms are assumed to be hemorrhoids?

Medical Conditions Masquerading as Hemorrhoids

Hemorrhoids are such a common issue that the possibility exists for underlying serious issues being overlooked or misdiagnosed. Misdiagnosis can have life threatening consequences. Hemorrhoids can mask symptoms of colon cancer causing a delay in or complete failure to make a diagnosis.[18] When a family history of colon cancer exists or in the presence of problematic symptoms such as pain, tenderness, dark red blood, or anemia, experts recommend a colonoscopy to rule out colorectal cancer.[10] For example, a case study describes a patient who presented with rectal bleeding and pain during defecation and was sadly misdiagnosed and treated for prolapsed hemorrhoids when the correct diagnosis was anal canal melanoma, an extremely rare cancer.[19]

Table 2. Active Ingredients of Hemorrhoidal Treatments[22]

Ingredient(s)	Class	Routes of Administration	RX and/or OTC	Comments
Phenylephrine	Vasoconstrictor	Suppository Ointment Gel	OTC	Caution use in patients with BPH, CVD, HTN, thyroid disease
Benzocaine Dibucaine Lidocaine Pramoxine	Anesthetics	Cream Ointment Gel	RX and OTC	Possibility of allergic reactions; may mask pain related to more serious condition; often used in combination products.
Calamine Witch Hazel Zinc oxide	Astringents	Wipe Suppository Cream Ointment	OTC	Witch hazel for external use only; can cause dryness
Hydrocortisone	Corticosteroid	Cream Ointment Suppository Foam	RX and OTC	The only corticosteroid approved for use; available in RX strength suppository and in combination with pramoxine as RX foam
Cocoa butter Glycerin Lanolin Mineral oil	Protectants	Cream Suppository Ointment	OTC	Primarily only in combination products

ABBREVIATIONS: BPH = benign prostatic hypertrophy; CVD = cardiovascu;ar disease; HTN = hypertension; OTC = over the counter; RX = prescription

Crohn's disease—a chronic inflammatory bowel disease affecting digestive tract—presents with signs and symptoms that can be confused with hemorrhoids.[20] Crohn's disease can affect different areas of the gastrointestinal tract resulting in differences in presentation. Symptoms may include chronic constipation and diarrhea, both of which can contribute to the occurrence of hemorrhoids. Along with constipation and diarrhea, skin tags (small, benign skin growths that are not harmful but may be removed for cosmetic or irritation reasons) are also commonly associated with Crohn's disease. The appearance of skin tags can be confused with hemorrhoids. Clinical signs of skin tags can include rectal bleeding that occurs with defecation and spotting of blood that occurs with straining, which are also symptoms of hemorrhoidal disease.[20]

Patients with cirrhosis of the liver (scarring and dysfunction from chronic damage) can suffer from a correlating condition called portal hypertension (elevated blood pressure in the veins that drain blood from the stomach, intestines, pancreas, and spleen into the liver). Portal hypertension can lead to anorectal varices. Anorectal varices can bleed, thereby mimicking bleeding from hemorrhoids. It is important to ensure that the cause of bleeding is determined to be hemorrhoids as opposed to anorectal varices so that an underlying condition such as cirrhosis is not overlooked.[9]

Less commonly reported anorectal issues misdiagnosed as hemorrhoids include[21]

- anal fissure: a tear in the lining of the anus that can cause pain and bleeding during bowel movements
- rectal prolapse: a condition where the rectum protrudes through the anus
- anorectal abscess: pus filled mass in the anorectal area caused by infection
- perianal necrotizing fasciitis: bacterial infection that destroys soft tissue
- proctitis: inflammation in the rectum. Unprotected anal receptive intercourse can result in sexually transmitted proctitis. Symptoms of sexually transmitted proctitis include anal pain and discharge resembling hemorrhoidal symptoms.

CONSERVATIVE HEMORRHOID MANAGEMENT

Pharmacologic Treatment

For patients who seek medical advice for hemorrhoids, multiple options are available for treatment.[22] Depending on hemorrhoid severity or grade, the choices differ. Upon recognizing a benign case of hemorrhoids, the clinician and the patient may decide against any treatment at all using shared decision-making. Patients who are bothered by irritation and swelling can use at-home care or OTC preparations. OTC preparations typically consist of a combination of topical steroids to help with inflamma-

tion, anesthetics or numbing agents, vasoconstrictors to reduce blood flow, astringents, analgesics for pain, an antipruritic to help with itch, protectants to prevent further irritation, and a keratolytic to dissolve flaky or scaly skin.[22]

In the community pharmacy, hemorrhoidal treatments are most often located with products used to treat mild gastrointestinal issues. One size does not fit all when it comes to hemorrhoidal treatment: individual patient factors impact product selection. Prescription strength products are also available but typically contain a similar combination of ingredients as the OTC options. (See **Table 2** on the previous page.)

While topical treatments, lifestyle changes, and surgical or office-based procedures are the standard of care, oral therapy also has a place in the treatment of internal hemorrhoids. The primary class of oral therapy is phlebotonics. Phlebotonics contain plant-based ingredients called flavonoids. Researchers theorize they improve vascular tone, reduce inflammation and edema, and enhance lymphatic drainage.[23]

Micronized purified flavonoid fraction (MPFF) is an example of an available phlebotonic. It is an oral supplement used in the management of hemorrhoidal disease to effectively relieve acute symptoms including pain, itching, and bleeding.[12] MPFF can also be used to help with bleeding, swelling and discharge following hemorrhoidectomy. MPFF contains the flavonoids diosmin and hesperidin. The optimal dose of this product is unclear, but doses range from 1000 mg per day in divided doses for a short duration (3 months) to 1000 mg three times daily for acute hemorrhoid flares, gradually tapering to 1000 mg twice daily. Diosmin should not be used in children or in pregnant women due to the lack of data supporting the safety of use in these populations.[24] MPFF can be found in OTC supplements in lower concentrations. These supplements claim to be beneficial for hemorrhoids and vein health. A search of "MPFF" at online retailers reveals a multitude of supplements with varying concentrations of MPFF.

Calcium dobesilate, which is typically used for chronic venous insufficiency and diabetic retinopathy, has shown some efficacy in reducing inflammation and bleeding in acute incidents of hemorrhoidal disease.[12] Calcium dobesilate with fiber supplementation reduces inflammation of hemorrhoids.[25] Although not available in the United States, calcium dobesilate is a synthetic compound available in many other countries.[26]

Non-Pharmacologic Treatment and Prevention

At-home care is a good option for occasional hemorrhoid flare-ups. For patients who deal with hemorrhoids chronically, prevention is key. Simple lifestyle changes can often have a significant impact on hemorrhoid recurrence and frequency. Addressing any existing primary risk factors is the best place to start. The most common recommendations include increasing hydration, increasing fiber intake, and reducing strain while defecating.[10]

Constipation leads to straining and more time spent on the toilet. Fiber intake and hydration are essential in preventing constipation. Dietary fiber is severely lacking in the modern American diet. Current guidelines recommend 25 to 40 grams of fiber per day, but most Americans average an intake of less than half that amount.[27] Fiber supplementation reduces the risk of bleeding by as much as 50%.[10] Increasing hydration is also essential to improving bowel consistency and maintaining soft stools.

Individuals affected by hemorrhoids should also limit alcohol and caffeine consumption due to their dehydrating characteristics. Spicy foods may be problematic for some patients, but a direct correlation has not been found.[12,28]

Research also implicates sedentary lifestyle as a contributor to the risk of hemorrhoidal disease. In addition to improving overall health, physical activity also reduces the risks of obesity and constipation. Patients who are overweight or obese are more likely to develop hemorrhoids and hemorrhoidal disease and would benefit from aerobic exercise such as walking or swimming. The choice of activity should not put further pressure on the anal veins. Therefore, activities that involve heavy lifting should be avoided.[29] **Table 3** (below) summarizes the "dos and don'ts" of conservative hemorrhoid management.

Table 3. Dos and Don'ts of Hemorrhoidal Disease[27,29,30]

Do	Don't
• Increase aerobic exercise • Increase hydration • Increase fiber intake • Mimic the squatting position when on the toilet • Use soft toilet paper • Use salt or sitz baths for good hygiene • Use ice packs or cold compresses • Wear cotton underwear	• Use donut cushions • Spend long periods of time on the toilet reading, scrolling on phone, etc. • Use laxatives chronically (can lead to constipation) • Conduct activities that can worsen pressure in anal veins (e.g., horseback riding, cycling, heavy lifting, rowing) • Use topical steroids for long periods of time (can cause thinning of perianal skin and dermatitis) • Use harsh cleansing wipes

IN-OFFICE AND SURGICAL PROCEDURES

Surgeries and less complex procedures performed in the practitioner's office are available for those patients who fail conservative therapies. Out of the population of patients seeking treatment for hemorrhoids, roughly 10% will require surgical intervention.[31] The severity or grade of the internal hemorrhoid, the patient's degree of discomfort, and individual patient characteristics such as correlating disease states or risk factors determine the choice of procedure. Diet and lifestyle changes should be recommended to all patients and may be sufficient to resolve symptoms in patients with grade 1 hemorrhoids. Minimally invasive treatment options are available for patients with persistent symptoms in grade 2 hemorrhoids. Those patients with grades 3 or 4 appear to benefit most from surgical procedures. Surgery continues to be the standard treatment for these patients.[32] The procedures differ significantly in recovery time required, possibility of recurrence, and degree of pain.[2,33]

External hemorrhoidal thrombosis is approached differently and can cause extreme pain. Conservative measures are similar to those recommended for internal hemorrhoids and include sitz baths, increased dietary fiber, analgesics, and increased fluid intake.[34] Surgical treatment—either drainage or excision—is the best recommendation when severe pain is present and conservative methods are unsuccessful. Recurrence is frequent following excision of external hemorrhoidal thrombosis and patients typically experience a higher incidence of pain following the procedure.[34] The following procedures are indicated for internal hemorrhoids.

In-Office Procedures

Rubber band ligation is an option for hemorrhoids grades 1 through 3 and is often the first choice when patients seek medical intervention for hemorrhoids. One advantage of rubber band ligation is that it can be performed in the practitioner's office. As the name implies, it involves putting a small rubber band around a hemorrhoid to cut off its blood supply. This results in fibrosis and eventually (after about a week), the hemorrhoid dries, hardens, and falls off. Post procedure complications include bleeding and pain that can be severe lasting for a couple of days. Bleeding can be problematic for patients on antithrombotic medication (blood thinners), and pelvic sepsis (infection) is a rare complication. Recurrence rates range from 6.6% to 18%, however long-term efficacy is superior to sclerotherapy and infrared coagulation.[35]

Injection sclerotherapy is performed in outpatient clinics with local anesthesia. It is generally used for grades 2 through 4 of internal hemorrhoids.[32] The procedure involves injecting a sclerosant—a substance that causes blood vessels to shrink, often aluminum potassium sulfate and tannic acid—into the connective tissue layer around the pedicle (root) of the hemorrhoid. The sclerosant causes local inflammation which results in reduced blood flow to the hemorrhoid. An advantage of injection sclerotherapy is that it is associated with fewer complications and less pain than rubber band ligation. Unfortunately, it also has a lower success rate. Recurrence rates are high, but due to the safety profile and general ease of the procedure, it can be repeated if necessary.[10,36]

Infrared coagulation is an in-office, endoscopic procedure primarily indicated for lower grade symptomatic internal hemorrhoids. The practitioner directs a probe of infrared light at a predetermined depth targeting individual hemorrhoids. The light is converted to heat, which causes tissue destruction, inflammation, and eventually fibrosis.[37] In addition, the pressure applied by the probe itself reduces blood flow to the area and helps to bring vessels closer to the surface. This small amount of energy contributes to the desired coagulation (clotting).[38] Infrared coagulation is as effective as rubber band ligation in the short term but carries a higher incidence of recurrence due to the minimal tissue destruction. Despite increased recurrence rates, patients tend to prefer infrared coagulation given its lower incidence of post procedure pain and shorter recovery time. Infrared coagulation also has minimal complications, with bleeding, ulceration, and dermatitis being the most reported.[32]

Surgical Options

Conventional hemorrhoidectomy is the surgical removal of prolapsed hemorrhoids and can be characterized as "open" or "closed." Open hemorrhoidectomy is referred to as the Milligan-Morgan method. This method involves surgical excision of the hemorrhoid from the underlying anal sphincter. The surgeon stops blood supply to the hemorrhoid by tying off the blood vessel at its root. Upon completing this procedure, the wound remains open, giving the procedure its name. Providers can use various instruments for this procedure, including scissors, a scalpel, linear staples, a laser, radiofrequency, and electrocautery.[39] One device does not appear to have an advantage over any another.[31]

Closed hemorrhoidectomy is called Ferguson hemorrhoidectomy. Procedurally, this method is similar to the open procedure. The primary difference, as the name would imply, is that following the closed hemorrhoidectomy, the surgeon closes the wound, typically with an absorbable suture.[31,39] Pain is a concern, naturally, for patients faced with the prospect of hemorrhoidal surgery. Changes in the device used to perform the excision in closed hemorrhoidectomy has reduced post-operative pain, but it continues to be an issue. This is in addition to prolonged wound healing and a longer time to return to normal activities.[13] Both methods come with their share of complications. The most problematic are urinary retention, bleeding, anal stenosis (narrowing), infection, and incontinence.[31] Sepsis is rare but possible and can be life-threatening.[39]

Stapled hemorrhoidopexy is a surgical procedure also referred to as the Longo Procedure or procedure for prolapse and hemorrhoids (PPH). It is indicated for patients with grade 2 hemorrhoids who are unresponsive to non-surgical methods and patients with grade 3 and 4 hemorrhoids.[31] This procedure repositions rather than removes hemorrhoidal tissue. Loose mucosal tissue which is involved in the prolapse of the hemorrhoids is removed. A circular stapler then excises the mucosa above the dentate line in a circumferential ring.[13] The stapling results in an anastomosis, or connection, of mucosa to mucosa, causing the hemorrhoidal tissue to be lifted back into place.[2] This connection interrupts the arteries supplying the blood flow thereby reducing engorgement (swelling).[39,40] Because the incision occurs above the dentate line, the patient does not have an external surgical wound or trauma to the anal mucosa or anoderm (skin-like tissue that lines the lower part of the anal canal).[39] An advantage of stapled hemorrhoidopexy is reduced post-operative pain because the excision is performed where there are very few sensitive receptors.[39] Overall recovery time and time to return to normal activities are also shorter than with conventional hemorrhoidectomy. One downside to the procedure is a greater incidence of recurrence and prolapse.[31] Complications from stapled hemorrhoidopexy are like those of conventional hemorrhoidectomy and include bleeding, urinary retention, incontinence, anal stenosis, and, rarely, sepsis.[39]

Hemorrhoidal artery ligation is also referred to as hemorrhoidal dearterialization. In hemorrhoidal disease, arterial blood flow increases, so hemorrhoidal artery ligation involves reducing blood supply to the hemorrhoidal plexus. It is indicated for hemorrhoids of grades 2, 3, and 4. It is minimally invasive and is commonly performed as a day surgery.[41] The surgeon uses a proctoscope (a medical instrument used to examine the inside of the rectum and anus) with a Doppler transducer (a medical device that uses sound waves to detect and measure blood flow in blood vessels) that helps locate the arterial pulse.[42] Upon locating the pulse, the practitioner performs ligation either by suture or laser. Ligation of the supplying artery results in hemorrhoidal plexus shrinkage and symptom relief.[41] The benefits of hemorrhoidal artery ligation compared to conventional hemorrhoidectomy are significantly reduced post-op pain and fewer complications. The procedure does not alter anal anatomy, and the absence of any wounds reduces infection risk and results in rapid recovery and return to normal activities. One disadvantage may be a greater incidence of recurrence, particularly for patients with grade 4 hemorrhoids.[42] Recurrence rates average less than 3% of patients presenting with bleeding at one year follow-up.[43]

Dealing With Post-Op Pain

Pain following hemorrhoidectomy is common regardless of which procedure a patient undergoes. The incidence of moderate to severe pain following conventional surgical procedures may be as high as 65%.[44] The degree of pain experienced can range from mild to intractable (not easily controlled). Rectal hyperactivity, spasm, and compression or stimulation of nerve endings are possible outcomes of surgery and are likely the origins of pain.[45] Infection, edema, and sensitivity of the surgical wound also contribute to post-op pain.[46] The level of pain experienced can also be impacted by procedure type, anesthesia administered, and interventions performed during the procedure. Due to the different sources of pain, several options are available for pain management and a multimodal approach to treating pain is recommended.[47] These treatments can be topical, oral, injectable, or in suppository form.

Injections of products such as botulinum toxin, methylene blue, and ketorolac intraoperatively have shown modest effectiveness in reducing pain even several days post-op.[44] Botulinum toxin works by loosening the tonicity of the internal anal sphincter resulting in reduction of pain and easier defecation.[48] A small sample of patients with intractable pain were given an injection of a combination of ropivacaine and triamcinolone (anesthetic and steroid) at the painful site and reported no recurrence of pain at a six-month follow-up.[45]

Topicals to treat post-op pain include a range of drug classes. Calcium channel blockers (diltiazem or nifedipine), applied topically, reduce pain and decrease spasm in the internal anal sphincter. These are not commercially available and would re-

quire pharmaceutical compounding.[2,39] Anesthetics such as 2.5% lidocaine/2.5% prilocaine cream reduce pain when applied in the anal canal or the surrounding perianal skin. Sucralfate—a commonly used gastrointestinal medication—when compounded and applied as a 10% ointment, promotes mucosal healing and provides a protective barrier. The non-steroidal anti-inflammatory drug (NSAID) diclofenac can be compounded into a suppository and used for pain relief in the first day following hemorrhoidectomy. The muscle relaxer baclofen in a 5% cream form provides pain relief when applied immediately following surgery. Additionally, patients can use metronidazole topically or orally following surgery, as it exhibits antioxidant properties and helps to prevent infection at the surgical site.[44]

Preferred oral pain medications include non-narcotic analgesics that target peripheral and central pain sensitization and include NSAIDs, corticosteroids, acetylsalicylic acid, ketamine, acetaminophen, and anticonvulsants such as gabapentin. Targeting pain through multiple mechanisms provides better pain control and reduces opioid use.[47]

PAUSE AND PONDER: Which patients would be a special concern when determining hemorrhoid treatment?

ADDITIONAL CONSIDERATIONS IN HEMORRHOID MANAGEMENT

Comorbidities and Treatment Decisions

When treating hemorrhoidal disease, the treatment team must consider each patient's characteristics individually. For example, the team must evaluate any comorbidities when deciding on appropriate therapy. Comorbidities that can impact treatment choice include immunocompromise, pregnancy, anticoagulant use, Crohn's disease, and portal hypertension.[9]

Hemorrhoids are an extremely common complaint among pregnant women. Typically, hemorrhoids will resolve after giving birth, but most women will seek methods to relieve the discomfort without complications or risk of harm to the fetus during pregnancy. The first line recommendation aligns with recommendations for most patients with hemorrhoids and includes dietary modifications to reduce constipation. Kegel exercises and lying on the left-side seem to provide modest benefits. Topical treatments lack evidence of efficacy and safety and are not recommended for use during pregnancy.[49]

Immunocompromised patients are also a special concern. Clinicians must account for symptom severity and always consider conservative methods first. If procedural or surgical intervention is necessary, the increased risk of sepsis and poor wound healing puts immunocompromised patients at a disadvantage. These patients should receive prophylactic antibiotics before any procedure and stop immunosuppressive agents when feasible.[9,49]

Clinicians should also manage patients on anticoagulant therapy (e.g., warfarin) conservatively when possible, as increased risk of bleeding limits procedural options. If symptoms are severe and procedural intervention is necessary, injection sclerotherapy is preferred due to its lower bleeding risk. Patients should discontinue anticoagulants one week prior to the procedure.[9]

Patients with portal hypertension often suffer from coagulopathy (impaired ability of the blood to clot). As in patients on anticoagulants, bleeding risk is elevated in those with portal hypertension. Similarly, the treatment team should try conservative methods first. If procedural or surgical intervention is necessary, again, sclerotherapy is the preferred procedure due to the lower bleeding risk.[9]

Crohn's patients should try conservative measures first. When developing a treatment plan, management of the underlying disease should be the primary concern.[9]

PAUSE AND PONDER: What are some red flags when a patient presents with hemorrhoidal concerns?

Interactions At the Pharmacy Level

In the community pharmacy setting, technicians may be the first to encounter patients with hemorrhoids. It is essential that technicians are familiar with products available in the pharmacy, their ingredients, and their locations on shelves. While technicians cannot recommend a particular treatment, they can assist patients in locating desired items and directing them to generic versions if cost is an issue. Technicians can also refer patients to the pharmacist for more information if necessary.

Interviewing patients enables pharmacists to make good recommendations. A good starting point is to determine patients' prior history of hemorrhoidal disease and experience treating hemorrhoids. It is also imperative that pharmacists differentiate between hemorrhoidal symptoms and symptoms that may indicate an anorectal disorder that should receive immediate medical attention. Use open-ended questions to determine what other symptoms the patient is experiencing, how long have symptoms been present, and at what level of severity.

For those patients experiencing rectal bleeding for the first time, referral to a medical professional is always the preferred recommendation. Rectal bleeding attributed to hemorrhoids often results in a completely different diagnosis upon examination.[6] Swelling, discharge, fever, and chills are also red flag symptoms. These could potentially be an anal abscess, which can lead to sepsis and even death if not addressed. Persistent drainage and stool seepage are also red flags. These may indicate anal fistula (an area of infection between the skin and the anus), which requires surgical correction. Additional red flags include severe pain and burning with defecation indicating a possible anal fissure, or changes in bowel habits along with anal mass, pain, and discharge which are symptoms of anal neoplasms. While rare, anal neoplasms often have a poor prognosis.[22]

Pharmacists may be able to determine through thorough interview if lifestyle is a factor. Does the patient lead a sedentary lifestyle? Do they have a family history of colon cancer? Do they have Crohn's disease? Has the patient recently experienced weight loss or loss of appetite? Is there bleeding with defecation and, if so, is it bright red or dark?[19] Hemorrhoidal blood is arterial and is therefore bright red in appearance. Darker blood could indicate a source of bleeding other than hemorrhoids.[10] The patient's age is also an important consideration. Patients older than 50 years who experience symptoms for the first time would be good candidates for colon cancer screening.[50] A consultation with a primary care provider regarding a colonoscopy may be recommended. Due to the low incidence of hemorrhoids in children and adolescents, any rectal bleeding or hemorrhoidal symptoms would warrant medical attention.

When counseling patients on the use of OTC hemorrhoidal treatment, it is important to ask open-ended questions and gather as much information as possible. For example:

- "What other medical conditions do you have?" (Pregnancy, hypertension and depression are concerns.)
- "What specific symptoms are you hoping to treat?"
- "What route of administration would you prefer?"

Medication allergies can be a concern, particularly with products containing anesthetics. It is important to ensure that patients understand how to use selected medications and that they can administer it themselves or have a trusted caregiver to help. For example, does the patient have the dexterity to unwrap and insert a suppository? Pharmacists should be comfortable answering questions regarding the application of rectal creams and ointments.

It is also essential to be understanding and sympathetic to financial limitations. Generic equivalents are available for many of the most used products. In addition, due to the similarity between prescription and OTC products, many prescription hemorrhoidal treatments are non-formulary preferred and may be cost prohibitive.

SIDEBAR: Non-Traditional Therapies[51-55]

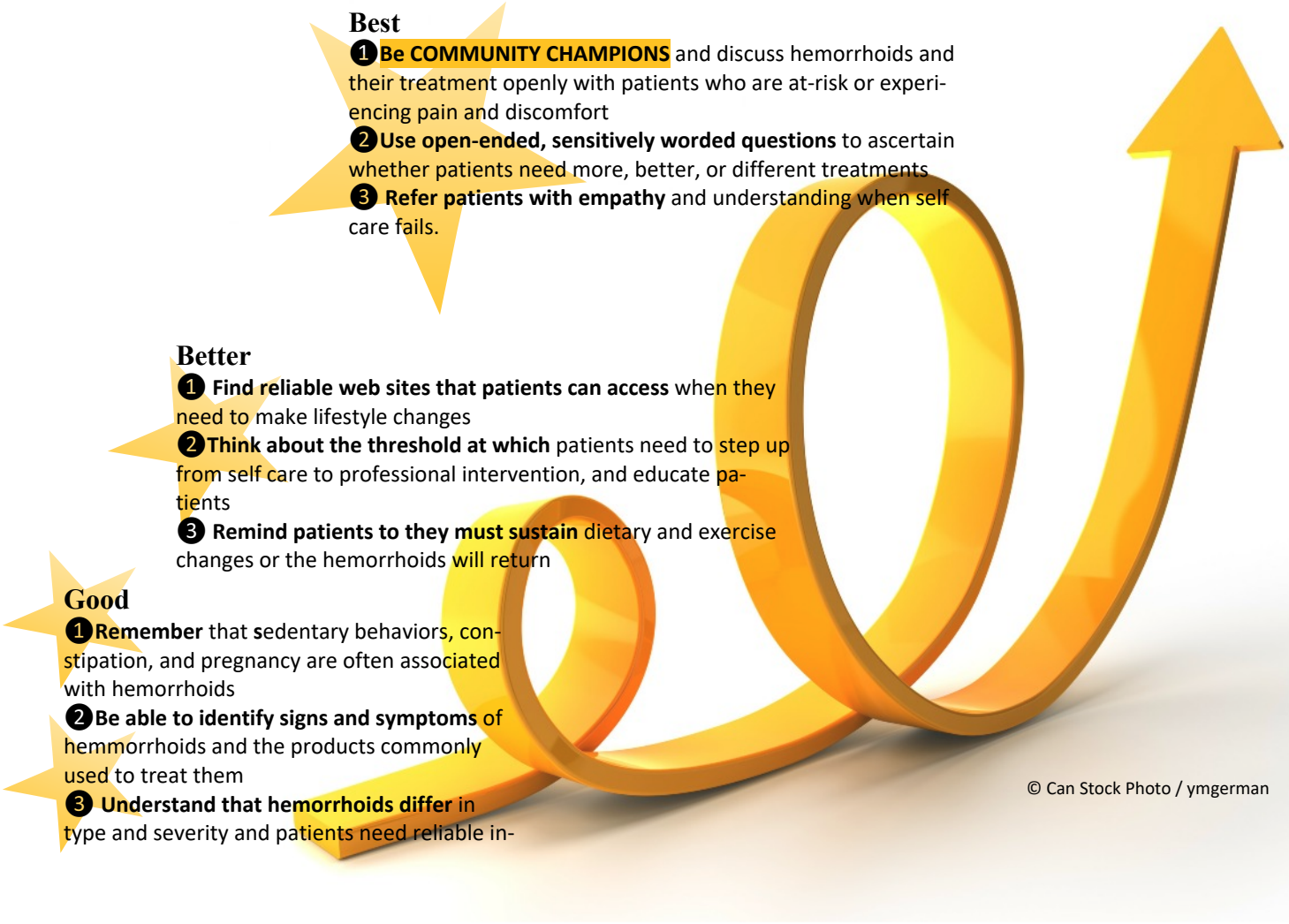
- **Aloe Vera:** applied topically to soothe irritation
- **Black Seed:** extract taken orally as a supplement to reduce inflammation
- **Chamomile:** extract, applied topically as an ointment to reduce pain and itching
- **Coconut:** applied topically as an oil to soothe irritation
- **Granulated Sugar:** applied directly to swollen hemorrhoids to reduce prolapse
- **Leeches:** attaches directly to hemorrhoid for intermittent periods of time, reduces engorgement
- **Quercus (Persian Oak):** extract taken orally as supplement to reduce inflammation
- **Rosehips:** applied topically to relieve pain and burning
- **Turmeric:** extract taken orally as supplement to reduce inflammation

Importantly, patients may approach pharmacists asking, "An internet search said I can use 'XYZ' for hemorrhoids, is this true?" There are many seemingly outlandish therapies found on the internet. It is helpful to be familiar with these options as well. See **SIDEBAR** (above) for the most common non-traditional therapies.

CONCLUSION

Historians have described and recorded hemorrhoids as a medical condition and a nuisance since 37 AD.[30] Since that time, millions of people have sought treatment for hemorrhoidal disease and countless practitioners have attempted to provide relief from the pain and discomfort. Patients who routinely suffer from hemorrhoids probably feel like they have been dealing with it since 37 AD and they have been battling them alone. Conservative measures, whether medicinal or non-traditional, continue to be effective in improving symptoms and quality of life and are still the first line of defense. Fortunately, non-invasive and surgical procedures are available for non-responsive and severe cases of hemorrhoidal disease. Individual patient characteristics impact treatment choice. Community pharmacists' and technicians' accessibility often makes them the first medical professionals that patients consult for information regarding hemorrhoid treatment. It is essential to understand how overall health, lifestyle habits, risk factors, and medication profiles determine resulting recommendations. Being sensitive to the patient's situation and treating them with respect and professionalism is key to ensuring they receive the proper care and attention. Hemorrhoids are a sensitive subject, and patients may have difficulty discussing it and asking the right questions. Hemorrhoids have been a pain in the butt for centuries. With today's knowledge and treatment options, pharmacists and technicians can help patients sit a little more comfortably for years to come.

Figure 1. Ensuring Proper Care for Patients Who Have Hemorrhoids



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