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Current treatment options for patients with grades III and IV hemorrhoids

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Introduction

Symptoms of hemorrhoidal disease represent one of the most common colorectal complaints. Hemorrhoids are classified as external when they occur below the dentate line and internal when they occur above the dentate line. Internal hemorrhoids are also classified according to a patient's degree of prolapse[1] **(TABLE)**.[2]

TABLE Grading Internal Hemorrhoids

GRADE	DESCRIPTION
I	Hemorrhoidal tissue protrudes into the lumen of the anal canal but does not prolapse outside the anal canal
II	Prolapse is beyond the external sphincter and visible during evacuation but spontaneously reduces
III	Protrudes outside the anal canal and requires manual reduction
IV	Irreducible and constantly prolapsed

Adapted with permission from Brill AI, et al. *J Fam Pract*. Nov 2005;54(suppl):5.

Treatment options for internal hemorrhoids are determined by grade; however, the relative composition of external tags should be considered as well. Typically, lower grades can be treated with nonsurgical methods such as sitz baths, stool softeners, and fiber supplements and higher grades with either office-based procedures (for example, infrared coagulation therapy, banding, sclerotherapy) or surgery.

Until recently, the only surgical option available for treating hemorrhoidal disease was a traditional hemorrhoidectomy, which can be performed in 1 of 2 ways. Outside the United States, the Milligan-Morgan technique is used most frequently. This procedure is also referred to as an "open" hemorrhoidectomy because the incisions, which are separated by bridges of skin and mucosa, are left open to avoid stenosis. In the United States, the Ferguson technique is used most frequently. This procedure is also referred to as a "closed" hemorrhoidectomy because the incisions are sutured, allowing for a high rate of primary wound closure.

In 1998, Longo described another surgical treatment option, the procedure for prolapse and hemorrhoids (PPH).[3] Other terms used synonymously with PPH include mechanical hemorrhoidectomy with a circular stapler, stapled hemorrhoidectomy, circular stapler hemorrhoidopexy, stapled circumferential mucosectomy, stapled anopexy, and stapled hemorrhoidopexy. The procedure differs from a traditional hemorrhoidectomy in that only a portion of the prolapsed rectal mucosa and internal hemorrhoid is removed and fixation at the level of the anorectal ring is the mainstay of the procedure.

Recently 4 experts participated in a roundtable discussion of the currently available options for treatment of grades III and IV hemorrhoidal disease. The remainder of this article summarizes that discussion.

Current treatment options for patients with grades III and IV hemorrhoids

Dr Senagore: Generally speaking, patients with grade III or IV hemorrhoidal disease are candidates for surgical treatment. Which patients are best served by surgery and not an initial office-based procedure?

Dr Ellis: Patients who are best served by surgery are those who cannot control their symptoms with office-based procedures such as banding and those who have significant prolapse, at least grade III. In fact, the revised American Society of Colon and Rectal Surgeons practice parameters for the management of hemorrhoids state that surgical treatment should be offered to patients who fail to respond to office-based procedures, patients who are not capable of tolerating office procedures, patients with large external hemorrhoidal disease, or patients with grade III or IV mixed hemorrhoidal disease.[1]

Dr Abcarian: I agree. Patients whose hemorrhoidal symptoms are not controlled or who require frequent office visits for treatment are candidates for surgery. That said, hemorrhoids are not lethal. If a patient's symptoms can be controlled with office-based therapy, then office-based therapy should be tried first.

Dr Senagore: Do you ever examine a patient in the office and decide that the patient's disease is too extensive for office-based procedures such as banding or sclerotherapy and recommend surgery as initial treatment?

Dr Chiu: Appearances can be deceiving. Many patients with horrible-looking hemorrhoids do not need treatment because they do not have symptoms. In contrast, some patients with horrible looking hemorrhoids will need immediate treatment because they have very symptomatic disease. These patients often have large internal and external hemorrhoids. In this case, I may recommend surgery as initial treatment. The most typical presentation, however, is the patient who is seen in the office repeatedly for hemorrhoidal treatment. In the long run, such a patient will benefit from a surgical procedure.

Dr Senagore: Currently, 2 surgical options are available for the treatment of hemorrhoids. The first surgical option is a traditional excisional hemorrhoidectomy, which is the optimal surgical procedure that treats both internal and external hemorrhoidal disease. A traditional hemorrhoidectomy can be performed as either an

open or closed procedure. What is the role of each of these procedures in treating patients with hemorrhoidal disease?

Dr Chiu: In the majority of cases, I perform a closed procedure primarily because patients tend to experience less pain following a closed compared with an open procedure. However, occasionally a closed incision may open up after surgery. If the external skin is not tight following a closed procedure, most patients do very well.

Dr Senagore: I agree. If you can do a closed procedure tension free, a closed procedure is better than an open procedure. Are there any benefits to performing a traditional hemorrhoidectomy, either open or closed, with diathermy, a laser, or an ultrasonic scalpel?

Dr Ellis: Although all 3 are reasonable options, I prefer using only a scalpel.

Dr Abcarian: In a clinical study, there was no overall advantage to performing a traditional hemorrhoidectomy using an Nd:YAG laser compared with a surgical scalpel and costs were definitely higher.[4] Also, I have seen numerous patients with anal strictures caused by procedures done using an ultrasonic scalpel or diathermy. Oftentimes, these procedures remove a lot of anoderm and can lead to stricture. Unfortunately, if a stricture occurs, it is hard to fix; typically, a flap procedure is needed. Therefore, I, too, prefer to use only a surgical scalpel.

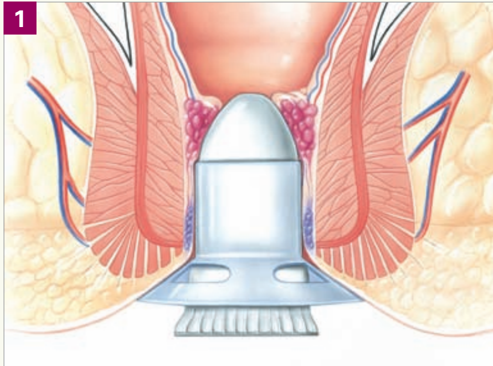
Dr Senagore: The second surgical option is PPH. During PPH, a specially designed circular stapler is inserted through a circular anal dilator, a portion of the prolapsed rectal mucosa and internal hemorrhoids removed, and the remaining hemorrhoidal tissue drawn back into correct anatomic position **(FIGURE).** Hemorrhoidal swelling is reduced following PPH because hemorrhoidal artery blood flow is disrupted. Dr Chiu, whom would you consider a candidate for PPH?

Dr Chiu: Candidates for PPH include patients with select grade II hemorrhoids, patients with grade III hemorrhoids, patients with uncomplicated grade IV hemorrhoids that are reducible at surgery or after manipulation in the operating room [OR], and patients for whom other treatment modalities fail.[5] However, PPH should not be performed on patients who have purely external hemorrhoids; it should be reserved for patients who present primarily with internal hemorrhoids. Patients with purely external hemorrhoids should be treated with excision of the external hemorrhoids and nothing more complicated.

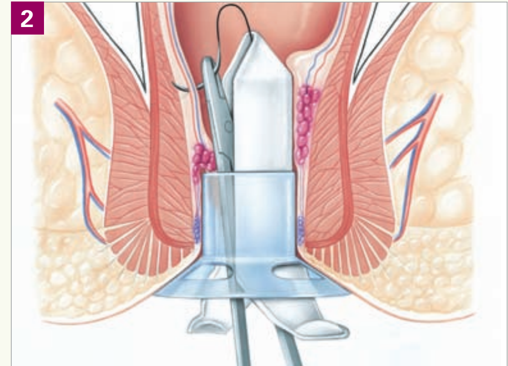
Dr Ellis: I typically do not even take patients with purely external hemorrhoids to the OR. I tend to treat these patients in the office.

Dr Senagore: I concur. The procedure should not be considered unless you can get the

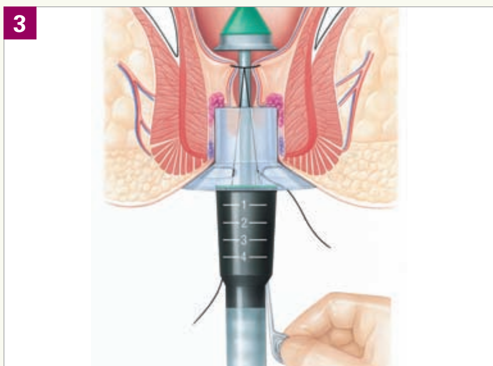
FIGURE Procedure for Prolapse and Hemorrhoids



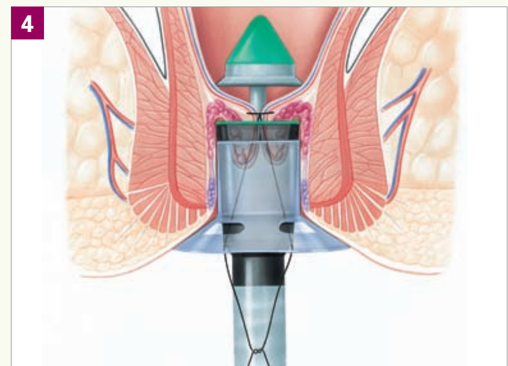
Insertion of the anal dilator/obdurator
A circular anal dilator/obdurator is inserted into the anal canal to push the prolapse back and lift the hemorrhoidal tissue into place.



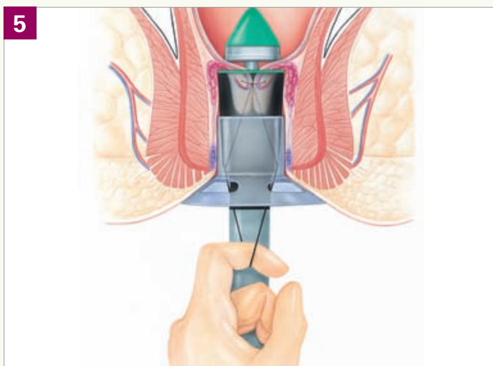
Preparation of the purse-string suture
The internal hemorrhoids are held back while a purse string is prepared in the rectal mucosa/submucosa approximately 4–6 cm from the dentate line.



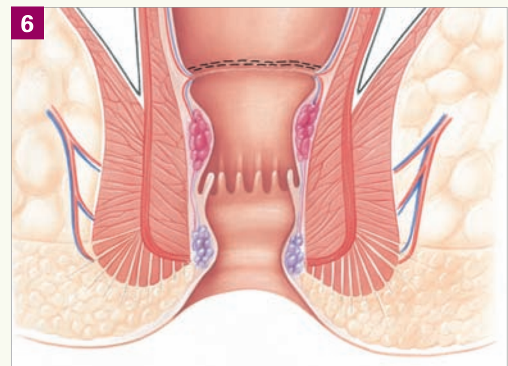
Initial placement of the circular stapler
A fully opened hemorrhoidal circular stapler is inserted beyond the purse-string suture. The purse string is tied around the anvil to secure the excess mucosal tissue. With the suture threader, each limb of the suture is brought through the channel of the instrument.



Insertion of the stapler into the anal canal
After the ends of the retraction suture are knotted, the stapler is tightened and gently pushed into the anal canal. Moderate traction on the purse-string must be maintained so that the prolapse is drawn into the stapler casing.



Closure, firing, and withdrawal of the stapler
The stapler is then closed completely, fired in one fluid motion, and withdrawn gently. The anal-canal wall is reconnected and restored, and the hemorrhoidal artery's terminal branches, which feed internal hemorrhoids, are interrupted.



Repositioned mucosae and hemorrhoids
Successful completion of the procedure for prolapse and hemorrhoids corrects the prolapse, restores internal hemorrhoids to their normal anatomic position, and alleviates the patient's symptoms.

Illustration courtesy of Ethicon Endo-Surgery, Inc.

anoderm to relocate into the anal canal. Also, PPH is contraindicated for patients with fixed prolapse or fibrotic external hemorrhoids, abscess, gangrene, anal stenosis, or full-thickness rectal prolapse.[5]

Dr Chiu: Patients who really benefit from PPH are those with large internal hemorrhoids and external hemorrhoids that retract nicely into the anal canal. Sometimes a patient may have a small skin tag that does not retract into the anal canal. In such a case, I still elect to perform PPH and snip off the remaining skin tag in the OR. However, I don't get too close to the dentate line when removing the skin tag. In most cases, these patients do not have any sensation of the additional surgery.

Dr Abcarian: I also have found that some patients with grade II hemorrhoids may benefit from PPH. These patients have very little or no normal mucosa between the hemorrhoids on anoscopy. Although banding can be tried, it is not unusual for these patients to require 8 to 10 bands, and if you placed only 1 band every 3 weeks, it would take more than 30 weeks to complete treatment. Therefore, I may recommend PPH for these patients. However, if a patient has a lot of external hemorrhoids, traditional hemorrhoidectomy may be the preferred treatment.

Dr Ellis: How are you treating patients with acute hemorrhoids? Are you treating them with a traditional hemorrhoidectomy or are you prescribing bed rest and hoping the hemorrhoid can be downgraded and the patient eventually treated using PPH?

Dr Chiu: I base my decision on how bad a patient's hemorrhoids are at presentation. If a patient has complete thrombosis of both the internal and external component and is in such pain that he cannot sit or work, I schedule a traditional hemorrhoidectomy immediately. However, if topical nitroglycerin relieves my patient's pain, then I send him home with instructions to take it easy for a few days and to return in 7 to 10 days to discuss treatment options.

Dr Abcarian: I agree. Patients with terrible hemorrhoidal disease should be treated acutely with a traditional hemorrhoidectomy. However, I do believe that it is better to undertreat than overtreat these patients. Treating a residual hemorrhoid or skin tag at a later date is better than having to treat anal stricture.

Dr Senagore: Patients undergoing PPH can receive local, regional, or general anesthesia. What type of anesthesia do you use for patients undergoing PPH at your institutions? Most of the time at my institution, PPH is performed under local anesthesia with conscious sedation.

Dr Chiu: At my institution, we tend to perform PPH under regional anesthesia.

Dr Abcarian: Likewise, in most cases at my institution, PPH is done under regional anesthesia.

Dr Ellis: In most cases I perform PPH under general anesthesia.

Dr Senagore: Complications can occur following both traditional hemorrhoidectomy and PPH, including anal stenosis, mild strictures and bleeding, postoperative pain, urinary retention, secondary hemorrhage, anal fissure, skin tag formation, and incontinence.[6,7] Generally speaking, however, PPH is associated with less pain and quicker return to normal activity compared with traditional hemorrhoidectomy.[7-14] In fact, in a prospective, randomized, multicenter study comparing PPH (n = 77) with closed hemorrhoidectomy (n = 79), there was no significant difference in complications between the 2 groups; however, patients who underwent PPH compared with those who underwent a closed hemorrhoidectomy reported significantly less postoperative pain, less analgesic use, and less pain at first bowel movement.[9] Dr Abcarian, are you seeing these same results at your practice?

Dr Abcarian: I am. Although PPH definitely is not painless, it generally causes less pain for patients than a traditional hemorrhoidectomy.

Dr Chiu: My experience has shown that pain after PPH tends to correlate with placement of the staple line: the closer the staple line is to the dentate line, the more pain the patient will have.

Dr Senagore: With the exception of pain, complication rates appear to be similar following PPH and traditional hemorrhoidectomy in randomized controlled trials.[9,11,13,15] However, there was some initial concern regarding sphincter damage following PPH. Have any of you had problems with sphincter damage at your practices?

Dr Abcarian: Sphincter damage can occur following either a traditional hemorrhoidectomy or PPH. I think, initially, sphincter damage occurred after PPH as a result of overdilatation of the anal sphincter prior to insertion of the circular anal dilator. In the past, some surgeons would use a 3- to 4-finger dilatation prior to inserting the dilator. This practice can easily damage the sphincter. However, if you insert the lubricated circular anal dilator 2 to 3 times prior to the procedure and nothing else, sphincter damage can be minimized.

Dr Chiu: I agree that dilatation is usually not necessary prior to PPH. I generally just insert the size 33 circular anal dilator. If I have trouble pushing the dilator in and it feels just barely snug, I may try stretching the sphincter slightly prior to reinserting the dilator. However, if the sphincter is really tight, I perform a lateral sphincterotomy.

Dr Senagore: Anal stricture also can occur following both traditional hemorrhoidectomy and PPH. Do you feel that stricture following PPH is related to technical issues?

Dr Abcarian: I believe so. The staple line should not be easily visible after PPH. Patients with

problems tend to have staple lines that can be seen with just spreading the buttocks. This tends to occur more commonly in men than women because it is more difficult to place the staple line high in men. For example, if the staple line is only 2 to 3 mm above the dentate line and there is some bleeding that requires the use of a couple of figure eights, those sutures may require you to grab some of the anoderm, resulting in more pain and a greater chance of stricture.

Dr Senagore: I agree. If the anoderm is damaged, the chance of the patient developing a stricture is increased.

Dr Chiu: That is a very important point. I feel that the placement of the anal retraction ring is the key to avoiding stricture. However, at times this can be technically difficult, particularly in male patients. In some cases, cutting a wedge out of the ring on either side can be helpful. By cutting the ring I am able to place it further inside the anal canal. I then suture the ring into place with a silk.

Dr Abcarian: I do the same thing. If I cannot get the ring above the dentate line, I cut a triangle out of either side of the ring and then suture it anteriorly and posteriorly, but not laterally. This technique has been reported in the literature by Francis Seow-Choen of Singapore.[16]

Dr Ellis: I also cut a triangle out of the ring if I cannot get it above the dentate line.

Dr Senagore: Rare cases of retroperitoneal sepsis following PPH have been reported.[1] Therefore, some surgeons routinely administer prophylactic antibiotics prior to the procedure. Do any of you commonly administer antibiotics to patients undergoing PPH?

Dr Ellis: No, I routinely do not use antibiotics and have not had a problem with sepsis in my patients.

Dr Chiu: I also do not routinely administer antibiotics.

Dr Abcarian: Like my colleagues, I do not regularly administer antibiotics and have not had a problem with sepsis.

Dr Senagore: Is there any difference in the percent of patients who experience urinary problems following either PPH or traditional hemorrhoidectomy?

Dr Abcarian: Urinary problems can and do occur following both traditional hemorrhoidectomy and PPH. Urinary problems probably can be decreased by limiting fluid intake in patients receiving spinal anesthesia. Patients who receive 2 to 3 liters of fluid when their bladder is anesthetized tend to have more urinary problems than those who are kept dry.

Dr Chiu: I routinely include oral Flomax® (tamsulosin hydrochloride) in postoperative care plans. We also try to keep our patients fluid-restricted the day of surgery and during surgery. As a result, at my practice we have seen a decrease in urinary problems with both traditional hemorrhoidectomy and PPH, although patients who undergo PPH tend to fare even better, with a lower incidence of urinary retention.

Dr Abcarian: Do you give Flomax to all of your patients?

Dr Chiu: The majority of our patients, young and old alike, receive Flomax.

Dr Ellis: I have also seen a decrease in urinary problems with both traditional hemorrhoidectomy and PPH. Currently, I believe less than 1% of patients in our practice come back because of urinary retention. Fluid restriction is key. I have seen nurses in the recovery room trying to get my patients to void by giving them a liter of fluid intravenously and pushing fluids orally. This practice is totally counterproductive. Urinary problems may also be decreased in our patients who undergo PPH because this procedure is usually done under general, not regional, anesthesia at our institution.

Dr Senagore: Do you see a difference in the incidence of early (within 24 hours) and late (7 to 10 days postsurgery) bleeding between traditional hemorrhoidectomy and PPH?

Dr Chiu: I don't believe that the incidence of acute and late bleeding is different between the 2 procedures. However, both early and late bleeding can occur following PPH. Patients who present with early bleeding may require a transfusion and a return trip to the OR for ligation of the missed bleeder. To decrease the incidence of early bleeding, I routinely ligate the right anterior quadrant area to make sure I have not missed a potential bleeder that I couldn't see at the time of surgery.

Dr Abcarian: Early bleeding following PPH is definitely a concern. I had 2 patients who probably lost 2 to 3 units of blood due to an early bleed. Fortunately, in these 2 cases, the bleeding stopped without further treatment. Prior to discharging a patient who has undergone PPH, the patient must be told to report any bleeding that is more than a few drops. If significant bleeding occurs, the patient may need to be taken back to the OR. Some surgeons opt to scope patients with an early bleed and evacuate any visible clots in the emergency room. I prefer to take the patient to the OR to scope them and then, if needed, suture the bleeder; rarely is a bleeder not found.

Late bleeding is also a concern following both traditional hemorrhoidectomy and PPH. I believe late bleeding occurs because there is necrosis at either the staple or suture line. If this necrosis is close to an arterial vessel, then the patient can bleed. If late bleeding does not resolve within 2 to 3 hours with bed rest and intravenous fluids, a return trip to the OR is needed.

Dr Chiu: I also have had some patients with late bleeds. Typically we admit these patients to the hospital for observation and treat them with intravenous fluids and bed rest until the bleeding stops.

Dr Senagore: What about other long-term complications? Have you had problems with fistulas, fissures, or perianal abscesses, for example, following PPH?

Dr Abcarian: I have seen some patients who have a problem with urgency following PPH. I believe this occurs because the staple line is inverted. Typically, however, this problem tends to subside after approximately a month or 2. I have not had any cases of true stricture following PPH. I believe the key to avoiding stricture is a high staple line.

Dr Senagore: Rare but serious complications, such as rectal perforation, retroperitoneal sepsis, retropneumoperitoneum, and rectovaginal fistula, have been reported following PPH.[1,17] Have any of you seen these complications at your practices?

Dr Chiu: To date, I have not seen any of these serious complications. Although I have seen bleeding and stricture, I have not seen sepsis, gangrene, or rectovaginal fistulas.

Dr Ellis: Results from my practice are similar. I have seen some patients who obtain poor control of hemorrhoidal symptoms following PPH. I believe this occurs because the staple line is too high. I have not seen patients with any serious complications following PPH.

Dr Abcarian: I have treated 2 women with rectovaginal fistulas following PPH. These women were referred to me for treatment and, I believe, in both cases it occurred because the surgeon blindly closed the stapler in the anal canal. One possible way to avoid this complication is to begin closing the stapler outside the anus and then to advance it into the anal canal. If this method is used, it is less likely that the vaginal wall will be tented. Another method that can be used to decrease the risk of a rectovaginal fistula is to put your finger in the vagina and rotate the stapler, making sure that the vaginal wall is not moving prior to stapling.

Dr Senagore: How can complications be avoided following PPH?

Dr Abcarian: I think the best way to avoid complications following PPH is to adhere to the same technique over and over again. Don't modify the technique; don't get bored; don't cut corners. Do the exact same thing each and every time. If something goes wrong during the procedure, start over; don't try to fix something you are not happy with.

Dr Chiu: That is great advice not only for PPH, but also for all types of surgery.

Dr Senagore: Finally, training is an important component to performing PPH successfully. How can surgeons become experienced enough to perform PPH on their own?

Dr Abcarian: It is important for surgeons not only to watch the training videos, but also to find a mentor whom they can go watch and learn from. I think seeing the procedure up close makes a difference, especially when things are not going right. For example, when I am mentoring a surgeon, I may need to take the purse-string stitch out and put it back in. When this occurs, it shows the surgeon being mentored that, even with experience, something may need to be redone rather than pursued if it is less than optimal.

Dr Chiu: I agree. I think it is important prior to performing PPH for general surgeons to find a colorectal surgeon to mentor them. It is important for the surgeon to see the procedure up close. In fact, when I train surgeons, I have them hold the sutures and the instruments.

Dr Ellis: Another option for surgeons is to receive training via teleconferences. Teleconferencing can allow surgeons to get a better view of the anal canal than they can from 10 to 12 feet away. Also, during a teleconference I am able to describe the procedure as it is being done and answer questions immediately.

Dr Abcarian: I also train surgeons in teleconferences. We have a microphone in the OR, and there is another one in the room where the surgeons are watching. The surgeons can watch and ask questions while the surgery is proceeding.

Dr Senagore: I think we can all agree that appropriate training and mentoring by a surgeon skilled in this technique are key to performing PPH successfully.

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