

## What are hemorrhoids?

Despite popular misconceptions, hemorrhoids are normal anatomic structures. They are vascular cushions in the distal rectum and anal canal, with unknown functional significance. There are three main fibrovascular cushions located in the left lateral, right anterior and right posterior positions of the anus, with intervening secondary complexes in some individuals.

## What symptoms do hemorrhoids cause?

Symptomatic internal hemorrhoids usually cause painless bleeding or prolapsing tissue. The bleeding is usually bright red, and can be seen with wiping or in the toilet. Anemia can rarely occur (0.5 per 100,000 population per year). Prolapse of tissue can require manual reduction. Internal hemorrhoids can also cause chronic drainage and soiling of underclothes. Pain associated with internal hemorrhoids usually presents as a dull ache. Sharp, acute pain is most commonly associated with thrombosed external hemorrhoids.

## What conservative measures best treat hemorrhoids?

Only minimal peer reviewed literature exists regarding conservative management of hemorrhoids. The best evidence regards the use of fiber. Six weeks after increasing fiber intake, 84% of patients noted improvement or resolution of symptoms vs. 54% of placebo. Over the counter topical agents and suppositories containing local anesthetics, corticosteroids, astringent, antiseptics and protectants are available and may alleviate symptoms of pruritus and discomfort. However, long-term use of these agents should be discouraged, particularly corticosteroid preparations, which can permanently damage or cause ulceration of the perianal skin. No randomized controlled trials are available to support their widespread use.

## What is the role of minimally invasive treatments for hemorrhoidal symptoms?

The goal of these procedures, is to ablate the vessels involved and fix the sliding hemorrhoidal tissue back onto the muscle wall of the anal canal in order to improve symptoms of bleeding and prolapse. These procedures are recommended for most patients with refractory Grades I, II or III hemorrhoids. Only 5-10% of patients require surgery. Options include:

**Infrared coagulation** - Infrared photocoagulation for internal hemorrhoids uses infrared light directed at the hemorrhoidal tissue, which then dries and shrivels. A simple light-conducting handle is attached to a lamp and timer. The quartz barrel is then inserted via an anoscope. One to two second bursts of light are used over each base. The procedure takes approximately five minutes to perform. Many patients require multiple sessions. Patients on Coumadin or Plavix should attempt to have the medication held prior to treatment to diminish the risk of severe hemorrhage. Multiple studies have demonstrated the efficacy of this technique in patients suffering from grade I - grade II hemorrhoids.

**Rubber band ligation** - Through an anoscope, an atraumatic clamp is used to retract the tissue at the apex of the hemorrhoidal complex into a ligator, and an elastic band is fired from the drum. **In our practice we prefer single ligations with several week intervals to minimize discomfort.** Band ligation is very effective in treatment of Grade II or III hemorrhoids. Some authors suggest it for Grade IV hemorrhoids as well. **We use both techniques for effective treatment of hemorrhoidal symptoms with minimal morbidity and discomfort.** Nivatvongs S. Hemorrhoids. In: Gordon PH, Nivatvongs S, eds. *Principles and Practice of Surgery for the Colon, Rectum, and Anus*. 3rd ed. New York: Informa Healthcare USA, 2007: 143-166. McRae HM, McLeod RS. Comparison of hemorrhoidal treatments: a meta-analysis. *Dis Colon Rectum* 1995; 38: 687-694. Keigbly MR, Buchamann P, Minervium S et al. Prospective trials of minor surgical procedures and high fiber diet for hemorrhoids. *BMJ* 1997; 2:967-969. Summarized by Arun Gowdamarajan, MD.

## **Single Incision Laparoscopic Colectomy: Fad or the wave of the future?**

Single Incision Laparoscopic Surgery (SILS) first was introduced in the late 1990's. Due to issues of instrumentation, learning curves and physician awareness, it did not gain acceptance. However, there has been a marked increase in usage in the past three years (22%). In the following article, we will explain what the procedure is, how it may benefit your patients, and our single institution experience.

SILS involves making a 2-3 cm incision around the navel. A "port" is then placed that contains several small holes for both a camera and 2-3 instruments to work. All work of dissecting and/or removing the specimen is accomplished through this incision. Several applications are now available in the US; most notably for cholecystectomy, appendectomy, bariatrics and hernia surgery. However, in the realm of colorectal surgery, very little has been written. Below are some articles regarding SILS surgery and colorectal problems.

Single incision surgery is not new. Hsu et al studied 316 patients operated on between 2000-2003 using only a 7 cm incision. They found no difference in leak rate, wound complications, technical difficulties and operative time. The authors proposed this method due to significantly diminished cost.

Remzi et al (1) performed the first SILS colectomy at the Cleveland clinic in July of 2008. A 3.5 cm incision was made and a right colectomy performed. The patient was discharged on post-operative day #4 without complication. The authors concluded it was safe and allowed for "essentially" scarless surgery, as the incision is hidden in the navel.

Bucher et al (2), in early 2009, performed the first SILS colectomy in Geneva, Switzerland. They chose a 34-year-old female with colonic endometriosis and a BMI of 34. The operative time was 125 minutes and the patient had no post-operative complications. The

authors bring up a valid point stating "It has to be determined if SILS offers benefit to the patient, except in cosmesis, compared to standard laparoscopic sigmoidectomy". Certainly, this is something that future randomized trials will try and answer.

Rieger et al (3), in August of 2009, performed seven colonic resections for cancer with traditional laparoscopic equipment via a single umbilical incision. The average incision length was 3.1 cm, the length of stay was 5.4 days and the average lymph node harvest was 15. This data falls in line with traditional laparoscopic colectomies with the added benefit of a smaller scar and potentially fewer adhesions. Of most interesting development of late, is the combined usage of robotics and SILS. Ostrowitz, et al performed SILS right colon resections using a DaVinci S system and a 4 cm umbilical incision. 1/3 was converted to open due to technical issues, but the other two were completed without incident. The operative time was 152 minutes and there were no complications.

**We, at Colon and Rectal Care, performed one of the first SILS colectomies in the state of Indiana in July of 2009.** The patient finished with 3.4 cm umbilical incision. He was discharge on post-operative day #4 and resumed normal work/home activities in ten days. SILS colectomy continues to be in the early stages of development for colorectal diseases. We are comparing its value versus traditional laparoscopy, robotic colectomy and hand-assisted colectomy. We believe each avenue offers an advantage to each individual patient. The combination of robotics and SILS is interesting, but the added cost and time must be considered in the selection process. **In conclusion, we believe it has a place for select patients and we continue to explore ways to reduce risk, pain, length of hospital stay and allow them to return to the lives in a faster way.** *Hsu. Am J Surg 2005 July; (1): 48-50, Remzi. Colorectal Dis. 2008 Oct; 10(8):823-6, Rieger. Surge Endosc. 2009 Sep 16, Bucher. Colorectal Dis. 2009 Mar. 6, Ostrowitz. Int J Med Robot. 2009 Oct 5)* Summarized by Shekar Narayanan, MD.