

Division of General Surgery:

Information on Colorectal Conditions

Colon Cancer

The primary treatment for colon cancer is surgery. Usually, the affected segment of intestine and its surrounding lymph nodes are removed, and the two ends are stitched or stapled together again. The removed colon is subsequently analyzed by the MGH Pathology Department, and 7-10 days later a report is provided about the "stage" of the tumor. This is a determination of the degree to which the cancer has advanced. In patients in whom the surrounding lymph nodes are found to contain cancer, experience has shown that the likelihood of cure is better if a course of chemotherapy is given after recovery from surgery, usually for about six months. In that case, the patient is referred to a medical oncologist for this treatment. If the lymph nodes are negative, then surgery alone is sufficient.

Rectal Cancer

For rectal cancer, surgery is again the most important therapy. The type of operation done, however, can vary, depending upon the location of the tumor within the rectum. For cancers in the upper or mid portions of the rectum, usually a "low anterior resection" can be done. This is a "sphincter saving" operation, in which the segment of rectum containing the cancer is removed (as well as a little of the adjacent colon), and the cut ends joined together, often with a surgical stapling instrument. On the other hand, for low rectal cancers (close to the anal opening and the anal sphincter muscles), an "abdominoperineal resection" (or "AP resection") is often required, in order to maximize the possibility for cure. In this case the rectum is completely removed (the bottom is sewn shut), and the upper cut end of large intestine is brought out through a hole in the skin on the left lower abdomen ("colostomy"). The most important goal, of course, is to do whatever is best to cure the cancer. For the small minority of patients who do require a colostomy, it is important to realize that it need not be a significant disability. After being instructed by enterostomal therapy nurses, and using modern appliances and equipment, people with colostomies lead normal and active lives.

With current surgical techniques, however, the necessity for AP resection and colostomy is less than in past years. Sometimes for low rectal cancers, a "coloanal procedure" can be done, to avoid a colostomy. In this operation, removal of the lowest part of the rectum is done, and the upper cut end of the colon is folded and stitched together as a "J" shaped pouch. The colon pouch is then joined to the anal canal, to reconstruct the rectum. This is a complex operation, and often is done with a temporary colostomy or ileostomy upstream, to divert the feces away from the area until it heals. The stoma (ileostomy or colostomy) is usually closed with a second, smaller operation a few months later. For any radical removal of the rectum, whether it is a low anterior resection, AP resection, or coloanal procedure, it is important to completely remove the surrounding lymph nodes ("total mesorectal excision"), to improve the likelihood of cure.

Another technique for avoiding a permanent colostomy in patients with rectal cancer is to do a "local excision" of the tumor. In this case, an operation is done through the rectal opening to remove only the small area of the rectal wall containing the tumor, rather than removing the entire segment of rectum with the surrounding lymph nodes. Occasionally, the local excision is done by cutting into the back of the rectum by making an incision over the tailbone area. The advantage of local excision is that it is a much smaller operation than either low anterior resection or AP resection, and a colostomy avoided. Since this operation is not a wide "radical" removal of the

area, however, it is appropriate only for rectal cancers that are discovered when they are very small.

For some rectal cancers, treatment with radiation and chemotherapy (usually for 5-6 weeks) is also recommended because it improves the likelihood of cure. Combination radiation and chemotherapy is often given before the surgery, but sometimes it may be given afterwards. For this, the patient is referred to both a medical oncologist and a radiation oncologist. In addition, six months of chemotherapy is usually recommended after recovery from surgery if the removed lymph nodes are found to contain malignancy (the same as for colon cancer).

Colorectal polyps

A "polyp" is a somewhat indefinite term, which simply means a growth on the lining of the intestine. Most polyps are completely benign (i.e. not cancer). Nevertheless, polyps are important because the most common types ("adenoma," or "adenomatous polyp," "tubular adenoma," or "villous adenoma") are precancerous. That is, the polyp may transform into cancer if it grows large enough. Although most polyps do not turn into cancer, most cancers probably do arise from initially benign adenomas. Therefore polyps, when discovered, should be completely removed. Even if a biopsy (small tissue sampling) of a polyp shows that it is benign, it is possible that there is in fact cancer in another portion of the polyp that was not sampled with the biopsy. Almost always, polyps can be removed by means of colonoscopy. This is a long flexible telescope that can be passed via the rectum up throughout the colon (see colonoscopy, below). Small instruments can be manipulated through the colonoscope to remove the polyp. Colonoscopy is usually a brief outpatient procedure. Occasionally, a polyp may be too large to remove with colonoscopy. In that case, surgery is usually recommended to remove the polyp.

Any individual who has had a colon adenoma removed is more likely than average to form polyps again, in other areas of the colon. Because polyps are precancerous, polyp-forming patients are at higher than average risk for developing colorectal cancer in their lifetimes. Therefore periodic checkup colonoscopies are usually recommended for these patients, in order to detect new polyps as they appear, and to remove them. By doing this, the risk of colon cancer can be significantly reduced. For that matter, patients who have ever had colon cancers removed have the same increased risk of forming colon adenomas, and are at excess risk for forming new, second colon cancers in their lifetimes. Thus, periodic checkup colonoscopies are usually recommended for colorectal cancer patients, just as for polyp patients. Occasionally, polyps may turn out to be "hyperplastic polyps," instead of adenomas (this determination is made by sending the polyp to the pathology laboratory and studying it under a microscope). Hyperplastic polyps are not premalignant, so future checkup colonoscopy is not required for these polyps.

Adenomatous Polyposis Coli

Adenomatous polyposis coli (APC) is also known as "familial polyposis." This is a genetic (inherited) condition in which a multitude of adenoma polyps is present in the colon. There are usually well over 100 polyps present, which is too many to remove by colonoscopy. Sometimes there may be precancerous polyps in the upper intestine also. Rarely, there may be "desmoid tumors" in the abdominal wall or inside the abdomen. These are poorly understood tumors, which sometimes act benign and sometimes act malignant. Because of the numerous adenomas in the colon, APC patients have a 100% chance of developing colon cancer in their lifetime, usually before age 40. For this reason, the colon should be removed soon after the diagnosis is made. The options for surgery are the same as for ulcerative colitis (see below). APC patients should have their offspring checked for the condition, since there is a 50% chance of passing this on to children. Usually the checkups begin in the early teen years and are done by colonoscopy.

Diverticular disease

"Diverticulosis" is a condition affecting the colon, in which multiple small outpouchings or "diverticula" form in the wall of the bowel. The sigmoid colon is the most common portion of the colon to be affected by diverticulosis, but any segment can have diverticula in it. Diverticulosis probably forms at least in part, because of insufficient fiber in our American diets. Diverticulosis is

very common in developed countries, and usually never causes any symptoms or problems. Occasionally however, at least one of the diverticula can become infected (probably from a tiny hole that forms in the diverticulum), causing abdominal pain and fever. The condition is then called "diverticulitis." Diverticulitis can usually be treated successfully with antibiotics (as an outpatient if it is mild, in the hospital if it is severe). Often some sort of evaluation of the colon is done after recovery from an attack of diverticulitis (sigmoidoscopy, barium enema x-ray, colonoscopy), to be sure that there is not any other problem present (such as colon cancer).

Rarely, diverticulitis and the associated colon perforation can be so severe that emergency surgery is required to remove the affected segment of colon. This is a rather serious problem. In the presence of such severe active infection, it is not usually safe to join the ends of the colon back together after removing the segment affected by diverticulitis. There would be a high likelihood of the splice point failing to heal, resulting in leakage of intestinal contents within the abdomen. Therefore when emergency surgery is required for acute diverticulitis, usually the affected segment is removed, and the upstream end of colon is brought out to the skin as a colostomy. Unlike many of the colostomies done for rectal cancer, colostomies done for diverticulitis are often temporary. A few months later, once the infection has subsided and the patient has fully recovered, a second operation usually can be done to close the colostomy.

As stated above, most attacks of diverticulitis can be initially treated without surgery. Nevertheless, if a patient has recurrent episodes of diverticulitis, especially if any attack is severe, surgery to remove the affected segment is often recommended. This is intended to prevent future attacks and to avoid the possibility of a severe episode of diverticulitis that might require emergency surgery and a colostomy. For patients who have had recurrent diverticulitis, surgery is scheduled at a time when the disease is quiescent, so that there is no active infection at the time of surgery and the risks of surgery are therefore minimized. In this situation, the diseased segment of colon can usually be removed without an accompanying colostomy.

Once diverticula have formed in the colon they will not disappear without surgery. Nevertheless, it is possible to prevent progression of the condition, and minimize the likelihood of developing diverticulitis, by taking fiber supplements.

Inflammatory Bowel Disease

There are two major types of inflammatory bowel disease (IBD): "Ulcerative Colitis" (UC) and "Crohn's Disease" (CD). Crohn's Disease is sometimes also called "regional enteritis," or "terminal ileitis." UC and CD are very similar in many ways. Both cause inflammation of the intestine, and the specific cause for both is still unknown, despite much ongoing research. Both have a very unpredictable course and severity. That is, the severity of the disease and its extent within the gastrointestinal tract ("GI tract") can vary widely among individuals and it can come and go unpredictably. Sometimes it can be difficult to be certain whether a given patient has UC or CD, even after multiple tests and biopsies. There are numerous effective medicines available that can decrease the activity or severity of IBD and improve symptoms, but no medication is presently available that can permanently cure it. For both UC and CD, there is a somewhat increased risk of intestinal cancer over time, especially if the disease has been present for more than ten years.

The most important difference between UC and CD is that UC affects only the colon, whereas CD can affect any part of the GI tract. Thus, surgery has the potential for curing UC, but not CD. CD affects all layers of the intestinal wall, and there can be normal healthy bowel in between segments of diseased intestine ("skip areas"). On the other hand, UC affects only the innermost lining of the colon (the "mucosa"), and does so in a continuous manner beginning in the rectum and extending upstream for variable distances (no skip areas).

Many patients with IBD do not require surgery, because treatment with medicines is successful. If surgery ever becomes necessary, the reason is sometimes clear-cut (severe obstruction, bleeding, or infection, etc.). More often, however, the need for surgery is not urgent, and it is not

always perfectly clear whether it is better to persist with medical treatment or to proceed to surgery. This "judgment call" is best made by the patient in concert with a gastroenterologist who knows him or her well, sometimes with input from the surgeon.

Ulcerative Colitis

The symptoms of UC also may be either mild or severe, depending upon the amount of colon involved. If only the rectum is involved, it may be called "proctitis." If only the more downstream portion of the large intestine is affected, it may be termed "left sided colitis," "distal colitis," or "proctosigmoiditis." Disease of the entire large intestine is called "pancolitis." Typical symptoms include diarrhea, "urgency" (or "tenesmus," which means a frequent sensation of needing to have a bowel movement, even if very little is present to move), passage of blood or mucous with stools, abdominal cramps, and sometimes weight loss.

Surgery for UC is undertaken most commonly for intractable disease (i.e. ongoing significant symptoms despite medical treatment). Occasionally surgery is advised because of difficulties with taking the medications for UC or for supervening colon cancer or risk of colon cancer. Rarely "toxic megacolon" may occur, and lead to emergency surgery for UC. This is a very severe and debilitating form of UC, which is fortunately uncommon.

The options for surgery in UC are:

- Total proctocolectomy (TPC)
- TPC with continent ileostomy ("Kock pouch")
- Total abdominal colectomy with ileorectal anastomosis (IRA)
- Restorative proctocolectomy (RP) ("ileoanal pouch procedure")

Although none of these operations are small, and all have risks, the risks are not common. Possible risks include: infection (especially since this is surgery on the colon, which contains feces), bleeding, damage to the urinary tract (which lies nearby), sexual malfunction (due to damage to nerves in the pelvis near the rectum), and later intestinal obstruction from postoperative scarring in the abdomen.

TPC is a relatively simple and one stage procedure. In this operation, the entire colon and rectum are removed, and the upstream cut end of the small intestine (ileum) is brought out to the skin in the right lower abdomen as an "ileostomy." The patient wears a thin plastic stoma appliance (or bag) adherent to the skin to collect the stool. This operation reliably cures the colitis and eliminates any possibility of future colon cancer. Its primary disadvantage is that a permanent ileostomy is required. Nevertheless, the great majority of individuals with ileostomies lead normal and active lives.

The continent ileostomy operation is a more complex variation of TPC. In this procedure, the lower end of the small intestine ("terminal ileum") is folded and cut and fashioned into a "pouch" with a surgically created one way valve. This results in an ileostomy that does not empty constantly into an external appliance. The patient inserts a plastic catheter into the ileostomy 2-3 times a day to empty it, and can simply cover it with a flat bandage at other times. The disadvantage of this operation is that the pouch valve can deteriorate with time, and need further operations for revision. Also, an ileostomy is not avoided (although it may be less conspicuous). Because of these disadvantages, and because RP or TPC is a better option, continent ileostomy is now largely obsolete.

Abdominal colectomy and IRA is the simplest of all the surgical options, and no ileostomy is necessary. In this procedure, the colon is removed, the rectum is preserved, and the ileum is joined to the top of the rectum. The main disadvantage is that it is not curative. Ongoing ulcerative colitis in the rectum may be a problem especially since UC primarily affects the most downstream part of the large intestine. Also, the risk of cancer in the rectum remains. IRA is

therefore applicable only for the rare patient with a relative lack of rectal inflammation. Even then, there is a 25-50% risk of requiring surgery later to remove the rectum and revert to an ileostomy.

Restorative proctocolectomy (RP) is often an attractive option when surgery is required for UC. In this procedure, the colon is removed, and all but a tiny segment of the lowest part of the rectum (sparing the anal canal and its surrounding sphincter muscles). A pouch is surgically created out of the terminal ileum (often in the shape of a "J"), and joined to the anus. The patient's own anal sphincter muscles are employed to maintain continence. In effect, this operation reconstructs a rectum using the small intestine (the "neorectum"). Usually a temporary ileostomy is fashioned to divert stool away from the reconstruction and allow it to heal. A few months later, when the patient has fully recovered (and is off the immunosuppressant medicines for UC), a second and much smaller operation is done to close the ileostomy. Once the two operations are completed, the advantage of RP is that no permanent ileostomy is required, and it eliminates any appreciable risk of colorectal cancer or colitis. The disadvantage is that it is a more complex operation than TPC or IRA, with a somewhat greater risk of complications. Complications are not common, but may include pouch leak/infection, scarring and narrowing at the anus, infection or fistula around the anus, pouchitis (a poorly understood inflammation of the pouch), and unrecognized Crohn's Disease, in addition to the usual risks that accompany any major abdominal operation (above). Overall, there is a 5-10% failure rate for this operation (failed patients revert to a permanent ileostomy). The functional results are good, but not perfect. Most patients have 6-7 bowel movements per 24 hours, with one or two of those occurring at night. Continence is acceptable, but some stool seepage may occur, especially at night. Function improves with time, especially in the first 6-12 months after ileostomy closure. Younger patients have better function than older patients. Overall, patient satisfaction and quality of life measurements have generally been high after this operation.

Today, most patients with UC are best served by either TPC or RP. The tradeoff is that RP avoids a permanent ileostomy, but is a more complex operation (usually two operations) with a somewhat greater risk of complications. Patients who require surgery for UC can be happy with either choice, depending upon what their priorities are.

Crohn's Disease

CD most commonly affects the colon and ileum (the most downstream portion of the small intestine) [image 22]. Symptoms of CD may be mild or severe, and for small intestinal CD they often include crampy abdominal pain, weight loss, and diarrhea. CD of the colon usually causes diarrhea, sometimes with bleeding. It may also be accompanied by stubborn infections in the anal area (abscesses, fistulas, ulcers).

Since surgery cannot permanently cure CD, surgery is undertaken only when there are fairly severe ongoing symptoms despite medical treatment, when patients have difficulties taking the medicines chronically, when there is a concern about cancer, or when there are unusual serious complications from CD (perforation, abscess, fistula, obstruction, etc). In general, when surgery is required for CD, the affected segment of intestine is removed, and the two ends of intestine are usually spliced together again. It is desirable to minimize the amount of intestine removed, since further operations to remove more intestine may be required if CD returns in the years to come. The body has a remarkable ability to adapt to loss of much of the intestine without ill effect. Nevertheless, in rare cases, if very much intestine is removed there may not be enough remaining for adequate digestion, leading to diarrhea and weight loss ("short gut syndrome"). Sometimes blockages in the small intestine can be relieved by a surgical procedure to widen the passage without removing any intestine ("strictureplasty").

Hemorrhoids

Hemorrhoids are lumps or masses of tissue in the anus, which contain enlarged blood vessels. Hemorrhoids may be inside the anal canal ("internal hemorrhoids"), where they primarily cause the symptom of intermittent bleeding, usually with bowel movements. They may also lie just outside the anal canal ("external hemorrhoids"), where they primarily cause symptoms of swelling

and sometimes discomfort. Swelling and discomfort may occur intermittently, when the hemorrhoids become especially irritated. Many patients have both internal and external hemorrhoids.

Sometimes the blood vessels in small external hemorrhoids may for no reason clot (undergo "thrombosis"). This causes the sudden disturbing appearance of a ½ to 1 inch firm lump at the anal opening, which may be quite painful. The original underlying external hemorrhoid may have been so small that the patient never previously noticed it.

Hemorrhoids are not dangerous, so treatment for hemorrhoids is almost always optional. Often minor symptoms of hemorrhoids can be relieved with treatment at home.

Nevertheless, if there are ever symptoms of rectal bleeding, it is important for the patient to see his or her doctor for an examination. This is to determine if the bleeding is coming only from hemorrhoids and not something more serious, such as rectal cancer. When hemorrhoid symptoms are persistent and bothersome, more definitive treatments are available. The choice of treatment depends upon the size and location of the hemorrhoids.

For hemorrhoids that are small to medium sized, and primarily internal (which primarily cause the symptom of bleeding), office treatment of hemorrhoids can be carried out. Numerous office treatments have been described, including rubber band ligation, infrared coagulation, electrocoagulation, freezing therapy, and injection sclerosis. Of these, rubber band ligation seems to work the best. For this, a small elastic is placed around the neck of the hemorrhoid, which strangles it, and makes it shrink. This is usually done in the doctor's office, and does not require anesthesia. Patients may feel some discomfort for 24-48 hours afterwards, but it is usually not severe. When the ligated hemorrhoid dies, the rubber band later falls off unnoticed, and the small resulting raw spot heals. Each time a rubber band is placed on a hemorrhoid it makes the hemorrhoid smaller, but does not completely eliminate it. Therefore, 2-4 office treatments are usually required, at intervals of 6-8 weeks, in order to maximally shrink down the hemorrhoids, and minimize the likelihood of recurrence.

For patients who have quite large hemorrhoids, or if there are prominent external hemorrhoids (which primarily cause the symptoms of swelling, discomfort, or difficulties keeping the anal area clean), office treatments are not applicable. Rubber bands cannot be placed on external hemorrhoids, because it would cause excessive pain. In that case, hemorrhoidectomy (surgically removing the hemorrhoids) is the best treatment, if treatment is desired. This is an outpatient operation done under anesthesia, and usually has excellent results. Laser hemorrhoidectomy has been found to have no advantage over standard operative techniques. Fiber and sitz baths are important after any rectal surgery. After hemorrhoidectomy, most patients want to take a week or ten days off from work.

Anal Fissure

Anal fissures are small tears or splits in the skin at the anal opening. They probably occur because there is insufficient fiber in our American diets. There are two circular or donut shaped "sphincter" muscles that surround the anal canal to permit control of the stool. Over time, a low fiber diet may cause the small inner anal sphincter muscle to become too tight, and the anal opening to become narrowed. Then, when a bowel movement occurs (especially a hard, constipated bowel movement), it results in a split in the skin at the anal opening. Although anal fissures are usually tiny, they lie in a very sensitive area, so they can be quite painful (especially during and right after bowel movements). They can also cause bleeding with bowel movements.

Because anal fissures are nothing other than small splits in the skin, they are not dangerous. Usually, fissures will heal without surgery. If a fissure persists or recurs despite nonsurgical treatment, however, then more definitive treatment is available. The most effective procedure is minor surgery to partially cut or divide the small inner anal sphincter muscle ("lateral internal sphincterotomy"). This widens the anal opening and usually promotes healing of the fissure (90-

95% success rate). Since the larger external sphincter is not affected by this operation, there is usually no major effect upon continence (control of stools). Some patients, however, do notice minor incontinence, which means that there may be some seepage of stool if the patient has diarrhea, or there may be difficulty controlling gas. Sometimes this minor incontinence disappears with time. Injection of botulism toxin ("Botox") into the anal sphincter muscle is another technique for relaxing the sphincter to allow fissure healing, but this is less effective than lateral internal sphincterotomy. Fiber and sitz baths are important after any rectal surgery.

Anal Abscess and Fistula

Within the anal canal there are tiny glands, too small to be noticed. Nevertheless, these little glands can be the origin of an infection, which leads to an abscess (a small collection or pocket of pus). It is not known why abscesses occur in some individuals and not others. When an abscess forms in an anal gland, the abscess slowly enlarges and works its way toward the outside skin surrounding the anal opening. When this happens, the patient notices a painful swelling in the area. Sometimes this abscess eventually breaks open spontaneously and drains out pus and blood. Other times, if the patient sees a physician, the abscess can be lanced under local anesthesia to drain out the infection ("incision and drainage," or "I and D").

After an abscess drains, the patient usually feels better quickly. Nevertheless, the path that the infection created between the anal canal and the outside anal skin often persists ("anal fistula"). This is a small abnormal passage or tunnel from the inside to the outside. The fistula usually goes around at least part of the anal sphincter muscle. An anal fistula can be almost unnoticeable, except for intermittent drainage of a little pus or bloody discharge from the external opening and perhaps slight tenderness in the area. Sometimes the external skin surface heals but the underlying fistula persists, so that abscesses may repeatedly form and then drain.

Anal fistulas are not dangerous, but once formed, they will not heal without surgery. Most commonly, surgery is done to unroof or open the fistula track between the inner and outer openings (ie. create a trench or groove where the tunnel had been). This is called an anal "fistulotomy." The resulting wound can then heal from the bottom up. Since most fistulas surround part of the anal sphincter muscle, opening the fistula necessarily involves cutting part of the anal sphincter muscle. Unless the fistula is deep, there is usually no major effect upon continence (control of stools). Some patients, however, do notice minor incontinence, which means that there may be some seepage of stool if the patient has diarrhea, or there may be difficulty controlling gas. Sometimes this minor incontinence improves with time. If an anal fistula is deep, and surrounds a significant portion of the anal sphincter muscle, then the risk of appreciable incontinence is higher, and multiple operations, and/or more complex operations other than simple fistulotomy may be required. Fortunately, this is unusual. Fiber and sitz baths are important after any rectal surgery.

Rectal Prolapse

This is an unusual condition in which the rectum literally turns inside out. The result is that there is a large red moist mass of tissue (the prolapsed rectum) protruding outside the anus. In mild cases the prolapse may occur briefly with bowel movements, and then retract back up inside. In more severe cases, the rectum may be permanently prolapsed out. Mild cases of prolapse may be mistaken for hemorrhoids, and vice versa. Rectal prolapse is more common in women. It typically causes mucous discharge and a little bleeding, and sometimes discomfort. It is often associated with chronic constipation. Also, for unknown reasons patients with rectal prolapse frequently have weak anal sphincters, and at least some degree of incontinence.

Numerous operations have been described for surgical correction of rectal prolapse. Basically, they fall into two types: transabdominal (an operation through an incision in the abdomen), and perineal (an operation via the rectal opening). Transabdominal repair involves mobilizing the rectum, drawing it up into the pelvis, and stitching it up in that position. Frequently a segment of redundant colon just above the rectum is also removed, because it tends to be excessively long and slack in prolapse patients. Transperineal repair involves either removing the protruding

segment of rectum via the anal opening, or stripping the lining off of the protruding rectum, and tucking and stitching it back up inside via the rectal opening. After any prolapse repair, about half of patients with incontinence notice a significant improvement in control of their stool and half do not.

The results of surgery for rectal prolapse are in general good. Sometimes prolapse recurs after surgical correction, however. The advantage of the transabdominal repair compared to perineal repair is that it is perhaps a more reliable cure (lower recurrence rate), and it may be slightly more likely to result in improved continence. The advantage of the perineal repair is that it is a much smaller operation. Therefore a transabdominal procedure is often selected for relatively young patients and patients who are in good general health. On the other hand, a perineal operation is often advised for elderly or frail patients.

Condyloma Acuminatum (plural: condylomata acuminatum)

Condylomata acuminatum, or anal warts, are caused by a virus ("human papilloma virus", or "HPV"), which is usually transmitted person to person, by direct contact (especially sexual transmission). The warts are small but sometimes very numerous slightly irregular growths around the anal opening. Sometimes the warts extend slightly up inside the anus, where they can be difficult to see. The warts may also affect the genital area. They usually cause few symptoms other than bothersome warty growths. Small warts may be unnoticed by the patient. Nevertheless, anal and genital condylomata acuminatum should be treated, because they will generally grow larger and more numerous with time. Also, anal warts may become cancerous if left in place for a long time.

The warts can be destroyed by a number of techniques. If the condylomata acuminatum are extensive, a surgical procedure by a surgeon or gynecologist to cut them off and/or burn them off is best [image 42]. If the warts are small and not numerous, they may be managed by various office treatments, often by a dermatologist. The warts may be chemically cauterized, or frozen with liquid nitrogen. Often, external anal warts can be treated by imiquimod cream ("Aldara" cream).

Unfortunately, condylomata acuminatum can be difficult to permanently eradicate. Although the warts can be destroyed by the methods described above, the human papilloma virus remains in the body, and can bring about new (recurrent) warts later. Any single treatment of condylomata acuminatum eliminates most of the warts, but on subsequent exam there are usually some visible again, although smaller and less numerous than before. Therefore repeated treatments are almost always required. The success of treatment is rather unpredictable; some patients seem to have prolonged periods of freedom from warts after relatively few treatments. But other patients, especially those with immune disorders (eg. transplant patients or patients infected with human immunodeficiency virus) find that the warts never permanently resolve.

Since this is often a sexually transmitted disease, sexual partners should be checked for condylomata acuminatum, even if they have not symptoms.

Pilonidal Sinus

This condition affects the skin over the tailbone area, in the cleft between the buttocks. It more commonly affects men, patients with thick body hair, and patients younger than 40. Hair follicles in this region gradually enlarge, perhaps from pressure from sitting. This opening or "sinus" often gets hairs stuck inside of it, and becomes infected and even more enlarged. The pilonidal sinus may burrow horizontally under the skin for a distance. At this point it may appear as a swollen and tender abscess (collection of pus), which requires incision and drainage by a surgeon. More commonly, the enlarged and chronically infected cavity (sometimes called a "pilonidal cyst") persists as a slightly swollen and slightly sore area, which intermittently drains small amounts of pus or bloody fluid through one or more small openings.

Although a pilonidal sinus is not a dangerous condition, once formed it will not heal permanently without surgery. Minor surgery is done, sometimes to cut out the abnormal area of skin and underlying tissue and then stitch it closed. More often the pilonidal sinus or cyst is simply surgically opened or unroofed (to create a groove or trench where a tunnel had been) and left open to heal from the bottom up. When the wound is left open in this way, it requires repeated dressings or packings to keep it clean. A friend or family member may do these dressings. Alternatively, arrangements can be made for a visiting nurse ("VNA") to do the dressings (the disadvantage of this is that it requires that the patient be available according to the visiting nurse's schedule, however). It is also important to keep hair removed from the region. With proper care the area usually heals uneventfully over several weeks. Sometimes, however, healing time can be prolonged, probably because this is a dirty area, and there is pressure here from sitting, both of which retard healing. Occasionally, pilonidal sinuses recur, and require repeat surgery.

Constipation and Incontinence

Constipation affects everyone from time to time. If it is severe or persistent, one should see his or her physician. Possibly tests such as a barium enema x-ray or a colonoscopy are in order, to be sure there is not an abnormality such as a tumor causing a blockage. There are many laxatives available over the counter to treat constipation. In general, however, it is better to start by taking a fiber supplement, which is not a laxative. Fiber is a natural and safe way to overcome constipation and may be taken indefinitely. If it does not seem to work, it may be that the patient simply needs to take it in greater quantity or needs to take more fluid with it. Laxatives may be occasionally taken in addition to fiber, but it is best not to take laxatives frequently over the long term. Docusate ("Colace") is a stool softening pill that is probably safe to take long term, but is less effective and natural than fiber.

In rare cases, constipation in the absence of any blockage may be unusually severe and disabling. This is due to "slow transit" or slow peristalsis (peristalsis is the wave like contraction of the intestine that propels contents downstream). If special tests confirm that this sort of constipation is present, surgery can be offered to the patient to relieve the condition. The colon is not important for digestion; it simply converts liquid waste to solid waste by absorbing water. Therefore for severe constipation the majority of the colon can be removed, and end of the small intestine connected to the upper rectum ("ileorectal anastomosis") [image 46]. Nevertheless, despite this rather major procedure, the success rate of surgery is only moderate.

Incontinence has two major causes. The first type is due to weak pelvic and sphincter muscles, which in turn may be due to degeneration of the nerves that go to these muscles to stimulate them to work. This sort of incontinence often affects elderly patients. The other type of incontinence is due to any sort of trauma or division of the anal sphincter muscle. Sphincter trauma is most commonly due to difficult childbirth, and is sometimes due to previous rectal surgery. Special tests are usually required to determine which type of incontinence is present in a particular patient. Sometimes both types are present together.

The treatment of incontinence depends upon how severe it is, and what the cause is. Sometimes incontinence is relatively minor. In this case there is only occasional leakage of small amounts of stool, and difficulties controlling gas. For minor incontinence of any cause, nonsurgical treatment is best. In major incontinence, there is frequent leakage of large amounts of stool. If this is present, surgery may help the condition, but only if it is the traumatic type of incontinence. Surgical repair of the anal sphincters may be carried out ("sphincteroplasty"), with a reasonable chance of success. On the other hand, if major incontinence is due to muscle weakness/nerve degeneration, sphincter surgery would be unlikely to improve matters, and could make it worse. Therefore nonsurgical treatment is best in this case. Nevertheless if the incontinence is severe, life may be improved by creating a colostomy as a last resort.