



# IBD AND ABDOMINAL SURGERY:

A PATIENT'S PERSPECTIVE

**GREGORY ADAM HAAS, BS**

---

EVERY SURGICAL TECHNOLOGIST SHOULD KNOW THE AST MOTTO: AEGER PRIMO OR THE PATIENT FIRST. THE MODERN OPERATING ROOM IS COLD AND BRIGHT, FULL OF MACHINES, FURNITURE, INSTRUMENTS AND MORE. BUT ON THE OPERATING TABLE IS A LIVING, BREATHING AND HOPEFULLY VIBRANT HUMAN BEING. OVER THE YEARS, SURGEONS HAVE BECOME KNOWN TO BE SOMEWHAT LACKING IN THE “PATIENT RELATIONS” DEPARTMENT. IT’S THEREFORE CRITICAL THAT THE CERTIFIED SURGICAL TECHNOLOGIST (CST®) BRIDGE THE GAP BETWEEN THE OPERATIVE TEAM AND THE PATIENT.

Major abdominal surgeries, especially those resulting from Inflammatory Bowel Disease (IBD), can be one of the most traumatic events in a person's life at any age. Patients often ask questions such as: "Will I be normal after surgery?" and "Will I be able to do the same activities I've always done, like skiing and scuba diving?" Following surgery, patients may go for months or even years with these and other questions unanswered.

Even though the resources for these people are abundant, many factors preclude patients from procuring them. With one brief statement, the CST can ascertain whether or not an abdominal surgery patient needs specific resources. Information is power, and an informed patient is more apt to be a happy and healthy person. Two minutes of your time can prevent months or years of patient confusion, queries, doubts and worries. CSTs are a vital part of the operating room and, if well-informed, can play an essential role in the patient's life. Remember AST's motto and keep the patient first.

## Disease overview

### *Ulcerative colitis*

Ulcerative colitis (UC) is a chronic inflammation of the mucosal lining of the colon. It is an autoimmune disease so, when a person is afflicted, his body perceives its own intestine as foreign and fights it off.<sup>1</sup> UC was first recognized as a disease entity in 1859 by Sir Samuel Wilkes in Great Britain,<sup>2</sup> but has probably been around for thousands of years.

UC is a chronic disease of the colon, often affecting the rectum and anus. The disease is marked by inflammation, sometimes severe, and perforating ulcers that affect the mucosal lining of the colon. Another characteristic of the disease is its ability to cover the colon and rectum in full. When the disease is active, common symptoms include frequent diarrhea, profuse rectal bleeding, severe stabbing and cramping pain, marked weight loss and anemia.<sup>3</sup>

Pain associated with the disease ranges from mild to excruciating and severity from mini-

mal to extreme. Where and to what degree the patient experiences pain is directly proportional to the current location of inflammation, the amount and size of ulcerations, and other related factors. A UC patient with numerous bleeding ulcers, affecting the colon from transverse through sigmoid and into the rectum, would perceive pain in the upper and lower left abdominal quadrants. Conversely, a patient with active UC, whose pathology is most pronounced in the right colic flexure, might only experience right upper-abdominal quadrant pain and have little blood in the stool. In these scenarios, both patients have active disease, although signs, symptoms and perceptions vary.

Frequent bowel movements, possible anemia, vitamin deficiencies and a myriad of other factors may intensify the exacerbation and further hinder the patient's overall quality of life.

One common subcategory of UC is ulcerative proctitis (UP). In approximately 30% of UC patients, the disease originates as UP and manifests into UC over time. UP is a milder form of UC and is further divided as follows:

- Proctosigmoiditis: Colitis affecting the sigmoid colon and rectum.
- Left-sided colitis: A continuous disease pattern that begins at the rectum and extends as far as the splenic flexure.
- Pan-ulcerative colitis: Affects the entire colon.<sup>3</sup>

### *Crohn's Disease*

Crohn's disease is named after Burrill B Crohn, MD. In 1932, a landmark paper was published with a complete description of the disorder known today as Crohn's disease. The paper was authored by Crohn and two colleagues, Leon Ginzburg, MD, and Gordon D Oppenheimer, MD.<sup>8</sup> Crohn's disease is more severe and complicated than UC. Because the symptoms of these two illnesses are so similar, a definitive diagnosis is sometimes difficult to obtain. In fact, current data suggests that approximately 10% of treated cases are undiagnosed and are therefore categorized as Crohn's indeterminate or indeterminate colitis.<sup>4</sup>

Crohn's most commonly affects the ileum and cecum, but may involve any part of the digestive tract from the mouth to the anus. Other characteristics of Crohn's include:

- Skip patterns: Healthy areas of intestine are sandwiched between diseased sections without any continuity or pattern.
- Finger-tip clubbing: Tips of the fingers retain a boxy look. Unfortunately many gastroenterologists are still unfamiliar with this anomaly.<sup>4</sup>
- String sign: Marked narrowing or stricture of the bowel, resulting from the inflammation process and scarring.<sup>5</sup>

Both Crohn's and UC patients experience complications resulting from vitamin and nutritional deficiencies. As both illnesses cause frequent bowel movements, the normal tendency is to deprive the body of a meal's full nutritional value. Furthermore, anemia, B12 deficiency and subsequent fatigue are not uncommon, as blood is lost via intestinal ulcerations.<sup>4</sup> Five types of Crohn's have been identified and are listed below with their affected anatomy:

- Ileocolitis: The most common form of Crohn's, affecting the ileum and colon.
- Ileitis: Crohn's affecting the ileum.
- Gastroduodenal Crohn's: Affects the stomach and duodenum.
- Jejunoleitis: Patchy inflamed areas in the jejunum.
- Crohn's colitis: Affects the colon and rectum only.<sup>4</sup>

### Cause and cure

To date, there is no cause or cure for IBD. However, much research and data collected have strengthened theories and are helping to unlock the mysteries of the disease. In both UC and Crohn's disease, there is a marked increase in response by the body's immune system. In people with IBD, the immune system acts erroneously and autoimmunity metastasizes. Food, normal flora, and even the intestines themselves

are seen as foreign. Consequently, the body starts the process of attacking its own organs as invaders. Once this process begins, harmful products generated by the body lead to intestinal ulcerations and injury.<sup>4</sup>

Further studies regarding IBD's cause focus on the interrelation between inherited genes, environment and the immune system. Environmental antigens may directly cause inflammation. Researchers believe that once the immune system is activated, the body may not have the ability to deactivate it. Hence, the IBD process begins and progresses until medical intervention is received.<sup>4</sup> Only 25 years ago, IBD was thought to be psychosomatic, caused by stress, emotional problems and other related factors. That is simply not true. Physical and emotional stressors cannot cause the disease; although once a flare-up starts, they can certainly exacerbate its magnitude.

A current hypothesis about its cause involves a possible link between Crohn's and bacteria in milk, as speculated by researchers at St George's Hospital Medical School in London. In August 2003, researchers proposed that *Mycobacterium avium paratuberculosis* (MAP) found in milk causes the disease. Their findings indicate that 92% of patients with Crohn's have MAP. Previous findings by the same group of scientists found MAP in 2% of the pasteurized milk sold in British stores.<sup>6</sup>

Since UC and Crohn's have no cure at this time, disease management is primarily accomplished via drug therapy. A healthy diet, exercise, and other similar modalities are adjuncts to medications, and many physicians are including nontraditional alternative therapies to their regimens as well. The primary goal of drug therapy is to suppress the symptoms and keep the disease quiescent.

Several groups of drugs are used for treatment and are utilized interchangeably between UC and Crohn's. They are:

- Aminosalicylates (5-ASA): A class of anti-inflammatory drug, including sulfasalazine and oral mesalamine.

## Cutting through the confusion

Our gastrointestinal tracts are limited in the types of responses available to various stimuli. Many different conditions create similar responses, which can be confusing. Just because a surgical patient suffers from what they call a “spastic colon” does not mean they have IBD.

### Irritable Bowel Syndrome (IBS)

IBS is one of the top 10 most frequently diagnosed conditions among US physicians, and may affect up to 20% of all adults in America. It is surpassed only by the common cold in employee absenteeism.<sup>12</sup> Unlike IBD, which is a disease, IBS is a syndrome (group of symptoms) that causes diarrhea, constipation (or both alternating), abdominal bloating and/or distention, gassiness, cramps, urgency to defecate and mucus in the stool. IBS has been called a number of other names, which leads to confusion: mucous colitis, spastic colitis, spastic colon and irritable colon.<sup>12</sup>

IBS does not cause inflammation or damage to the bowels, intestinal bleeding, anemia, weight loss or fever—all associated with IBD. IBS sufferers are not more likely to develop colon cancer, IBD, or other gastrointestinal diseases, and are not treated with steroids, immunosuppressives or surgery.<sup>12</sup>

IBS is not an immune disorder, but patients with this syndrome are more likely to have other disorders, such as fibromyalgia, chronic fatigue syndrome, chronic pelvic pain or TMJ disorder. Triggers for an attack include eating, stress, hormonal changes, and certain medications.<sup>12</sup>

The cause of IBS is not known, but the syndrome is exacerbated by stress.<sup>12</sup> Its treatment varies. Some patients respond after dietary changes, relaxation therapies, or stress management. Others need medications to help control symptoms. Acupuncture and hypnotherapy have shown some positive results.<sup>12</sup>

- Corticosteroids: Prednisone orally suppresses the immune system nonspecifically.
- Immune modifiers: Helps decrease corticosteroid dosage. Examples are Imuran®, 6-MP and Remicade®. Mounting evidence based on clinical experience suggests Remicade® may help patients taper off steroids. Remicade® is an antibody that binds to tumor necrosis factor (TNF), a protein in the immune system that plays a role in inflammation.

### Celiac sprue

As many as one in 133 have celiac sprue, but approximately 3% of those, more than 2.1 million, have not been diagnosed.<sup>13</sup> Celiac sprue is an autoimmune disease caused by a reaction to the proteins (gluten) in wheat, rye, barley, oats and other grains. Other names for this disease are gluten-induced enteropathy and nontropical sprue.<sup>13,14</sup>

Celiac disease is inherited and, like IBD, can damage the small intestine and lead to anemia, weight loss and other problems from malnutrition. It is diagnosed through blood tests and a biopsy of the small intestine.<sup>13,14</sup>

Symptoms vary by person and age and may or may not involve the intestinal tract. Symptoms include: recurring abdominal bloating and pain, chronic diarrhea, foul-smelling stool, unexplained anemia, gas, weight loss, missed menstrual periods, bone pain, irritability (especially in children), behavior changes, fatigue, delayed growth, joint pain, muscle cramps, seizures, tingling numbness in the legs, dermatitis herpetiformis, aphthic ulcers, tooth discoloration, and loss of enamel.<sup>14</sup>

Unlike IBD, celiac disease can be controlled easily and without surgery. Symptoms will improve dramatically within days of beginning a gluten-free diet. Damage to the bowel and body can be reversed in most cases, if the patient adheres to the diet. The gluten-free diet is a lifelong commitment, as there is no cure for the allergy.<sup>13,14</sup>

### Patient Resources

- National Digestive Diseases Information Clearinghouse (National Institutes of Health), [digestive.niddk.nih.gov/index.htm](http://digestive.niddk.nih.gov/index.htm)
- International Foundation for Functional Gastrointestinal Disorders, Inc, [www.aboutibs.org/index.html](http://www.aboutibs.org/index.html)
- Celiac Sprue Association, [www.csaceliacs.org](http://www.csaceliacs.org)

- Antibiotics: Cipro® and Flagyl® have proven quite useful in IBD treatment.<sup>4</sup>

### Diagnosis

Traditional methods include: X-rays, barium studies, CT scan, colonoscopy and a wide array of other techniques. Of specific interest is the IBD FIRST STEP<sup>SM</sup> by Prometheus Laboratories, a sensitive serological panel of antibodies optimized to detect IBD.<sup>7</sup> Every IBD patient

needs to be familiar with this test, unfortunately most are not.

### Surgical intervention

Surgery is always the last resort for IBD and varies dramatically between UC and Crohn's. Common indications for surgery include, but are not limited to: disease complications, obstruction, toxic megacolon, failure of drug efficacy for disease maintenance, and electively, when the disease becomes unbearable.<sup>8</sup> For the UC patient, proctocolectomy (removal of the colon and rectum) is the only cure. Removing these areas ensures the disease will never return. The possible variations of surgeries are numerous but fall under the following categories:

- *Brooke ileostomy:* A stoma is created on the abdominal surface by bringing through the terminal ileum. A small section is then turned inside out and sutured to the skin. An external appliance collects fecal matter.<sup>9</sup>

The Brooke ileostomy has minimal complications. Skin irritations and the social stigma associated with wearing a bag pose problems. The wafer which secures the appliance to the skin can leak or fall off. By and large, however, complications are minimal.

- *Continent ileostomy:* Numerous procedures in which a pouch is created inside the abdomen by cutting and suturing together sections of small intestine. A small section is then brought through the skin; a stoma and nipple valve are created and sutured in place. These procedures alleviate the need for an external appliance, since the internal pouch is intubated and manually drained. The continent ileostomy was developed in 1962 by Niles Kock, MD, (Kock pouch) and has been greatly modified over the years.<sup>2</sup> Variations include the J-pouch, W-pouch, S-pouch and Barnet continent intestinal reservoir (BCIR).

The continent ileostomy poses unique problems. Blockage and drainage problems from the nipple valve can occur. An inflam-

mation inside the pouch, called pouchitis, is not uncommon and is easily treated with Flagyl® within two weeks.

- *Pull-thru procedures:* An internal pouch may be created or an ileum connected straight to the rectum (ileorectal-anastomosis). In either of them, the patient defecates as normal without the need to intubate and drain.<sup>4</sup>

The pull-thru procedure is also prone to pouchitis, strictures, and adhesions. Frequent bowel movements are not uncommon, and infection can occur from intubating.

Surgical philosophies for Crohn's patients are quite different. Although indications remain basically the same, the overall goal is to keep the integrity of as much intestine as possible. Intrinsically (and unfortunately) unique to Crohn's is its ability to metastasize healthy intestine over time. For this reason, the continent ileostomy is never indicated in patients with Crohn's.

Common surgical interventions for Crohn's include, but are not limited to:

- Brooke ileostomy
- Resection: Diseased areas of intestine are excised, and the remaining sections anastomosed.<sup>8</sup>

### Constraints following surgery

People with ileostomies have few constraints regarding sports and leisure activities. Of major concern would be activities like karate. Although some ostomates do take karate, care must be taken to protect the stoma from blunt trauma, which could be catastrophic.

After healing, a relatively normal life can be expected. Everyday sports and leisure activities pose little problem, as long as care is taken to prevent blunt trauma to the abdomen.

Internal pouches and pull-thru procedures have varying limitations as compared to their ileostomy counterparts. Extreme care must be taken when intubating the internal pouch to prevent perforation. The patient should always have clean intubation supplies accessible and be wary

of blunt trauma. Pull-thru procedures can fail, and stress or illness can lead to an increase in the number of bowel movements. During such times, staying near a bathroom is advisable.

Of major concern to people who have had a resection or any internal pouch procedure is scuba diving. The Professional Association of Diving Instructors (PADI) teaches to dive when in good health. Smoking, excessive alcohol consumption and physical illness are factors which can increase the risk of decompression sickness (DCS).<sup>10</sup> According to Divers Alert Network (DAN), small bowel obstructions, adhesions or anything causing intestinal gas-trapping must be considered when diving.<sup>11</sup> Although diving is not contraindicated, prospective divers must receive medical clearance from their physician beforehand.<sup>10</sup>

At sea level, the atmosphere exerts 14.7 psi. As a person descends underwater, the pressure increases by one atmosphere (14.7 psi) every 33 feet. At 33 feet below sea level, the total pressure on the body equals two atmospheres or 29.4 psi. When scuba diving, nitrogen is pulled out of the air solution and embedded in the body's tissue compartments. When ascending from a dive, all nitrogen must be expelled from the body or DCS can occur.<sup>10</sup> In theory, nitrogen can become trapped in the suture lines where areas of intestine have been modified and joined. When this occurs, the chance of getting DCS increases.<sup>11</sup> DAN, which is affiliated with Duke University, has no documentation of problems between DCS and divers with abdominal surgery.

### Conclusion—the CST's role

Life after surgery can be challenging. For the patient with UC, surgery means living disease-free forever. Crohn's patients, however, may experience repeated disease flare-ups and additional surgeries. For anyone who has had surgery for IBD, the most important factor is having good information and resources. These people can do nearly anything they've done in the past, but they must have respect for their new intestinal network. Talk with and listen to your abdominal surgery patients. Often they'll remain quiet,

even when asked if they have any questions or concerns. Make a statement they can't refuse to respond to such as: "I read about ostomates who scuba dive." This simple statement might be the catalyst to alleviating the patient's concerns.

Since the CST plays a vital role in the care of the patient, always remember *Aeger Primo*. Be aware of and pass along the following valuable resources:

- Crohn's and Colitis Foundation of America (CCFA). 800-932-2423, [www.cdfa.org](http://www.cdfa.org)
- United Ostomy Association (UOA). 800-826-0826, [www.uoa.org](http://www.uoa.org)
- Divers Alert Network (DAN). 800-446-2671, [www.diversalertnetwork.org](http://www.diversalertnetwork.org)
- Prometheus Laboratories. 888-423-5227, [www.prometheuslabs.com](http://www.prometheuslabs.com)

### About the author

Gregory Adam Haas is currently a surgical technology student at Indian River Community College in Fort Pierce, Florida. He is changing professions after 19 years as an FAA-certified Airline Transport Pilot (ATP) and flight instructor. He holds a BS in education from Temple University in Philadelphia, Pennsylvania. Haas is also a PADI Open Water Scuba Instructor. He has 25 years' experience dealing with IBD.

### References

1. Patient information: Crohn's disease. American Autoimmune Related Diseases Association online. [www.aarda.org/patient\\_information.php](http://www.aarda.org/patient_information.php) Accessed 7/16/04
2. Sackier J and Wood C. Ulcerative Colitis and Polypoid Coli. Surgical Options. *The surgical clinics of North America*. 1988 Dec;68(6):1319-1324.
3. Introduction to ulcerative colitis. Crohn's and Colitis Foundation of America. [www.cdfa.org/research/info/aboutuc](http://www.cdfa.org/research/info/aboutuc) Accessed 7/12/04
4. Introduction to Crohn's disease. Crohn's and Colitis Foundation of America. [www.cdfa.org/research/info/aboutcd](http://www.cdfa.org/research/info/aboutcd) Accessed 7/12/04
5. *Professional Guide to Diseases*, 5th ed. Springhouse, Penn: Springhouse Corp; 1995:683-4

6. Study links Crohn's and bacteria in milk. CBC News [online]. August 8, 2003. [www.cbc.ca/stories/2003/08/08/Consumers/Crohns\\_030808](http://www.cbc.ca/stories/2003/08/08/Consumers/Crohns_030808)  
Accessed 7/12/04
7. IBD FIRST STEP<sup>SM</sup>. Prometheus Laboratories. [www.prometheuslabs.com/212d.asp?nav=products](http://www.prometheuslabs.com/212d.asp?nav=products)  
Accessed 7/12/04
8. Greenstein A. The Surgery of Crohn's Disease. *The surgical clinics of North America*. 1988 Dec;68(6):573-576.
9. Miller B and Keane C. *Encyclopedia and Dictionary of Medicine, Nursing and Allied Health*. Philadelphia: Saunders; 1987:623.
10. *PADI Open Water Diver Manual*. Rancho Santa Margarita, California: PADI International; 1994:183-186.
11. Vote D. Gastrointestinal issues: Consider Them Before Returning to Diving. Divers Alert Network. [www.diversalertnetwork.org/medical/articles/article.asp?articleid=41](http://www.diversalertnetwork.org/medical/articles/article.asp?articleid=41) Accessed 6/25/04
12. "IBS and IBD: Clearing up the confusion." Focus. [online] Spring/Summer 2003. Crohn's and Colitis Foundation of America. [www.cafa.org/media/pdf/ibsibd.pdf](http://www.cafa.org/media/pdf/ibsibd.pdf) Accessed 8/12/04
13. What is Celiac Disease? Celiac Sprue Association. [www.csaceliacs.org/ceeliac\\_defined.php](http://www.csaceliacs.org/ceeliac_defined.php) Accessed 8/12/04
14. Celiac Disease. National Digestive Diseases Information Clearinghouse (NDDIC). [digestive.niddk.nih.gov/ddiseases/pubs/ceeliac/index.htm](http://digestive.niddk.nih.gov/ddiseases/pubs/ceeliac/index.htm) Accessed 8/12/04



Just recruit a colleague to join AST at the one-year \$80 membership or two-year \$145 membership level. It's easy and simple—and friends will even thank you for all the ways AST will help them advance in the profession and move ahead in their careers.

Here's how you earn your free membership months:

- Recruit a valid new or renewing member at the one-year \$80 member or two-year \$145 membership levels
- Ensure that each recruited member provides us with your name and AST member number when joining
- When you renew, AST will extend your membership by the appropriate number of months depending upon the memberships you have recruited.
- Refer two members at the \$80 level and we'll extend your membership by four months!

*Bonus membership months are not applicable to members who recruit themselves, students, retired or six-month members. ■ No substitutions permitted. ■ Membership must be current to receive bonus months. ■ Reinstated memberships must have lapsed for at least one year to qualify for free bonus months. ■ If a potential member calls in or signs up online for membership, they must supply your name and membership number.*

**TALK TO YOUR COLLEAGUES—  
THERE'S VALUE  
IN AST MEMBERSHIP. SHARE IT!**

**CALL AST MEMBER SERVICES AT 800-637-7433 FOR MORE INFORMATION.**