



*centered around you*

## **Ischemic Colitis: “A Colon Attack”**

### **The Body’s Need for Oxygen**

The body and all of its organs require oxygen and nutrients carried by the blood stream. If the blood flow is interrupted for more than a few minutes, cells begin to die and damage occurs in that organ. This occurs in a heart attack. A heart attack occurs when a blood clot causes a blockage in an artery in the heart. Part of the heart muscle dies. Another example is a stroke, or "brain attack." A stroke occurs when a blood clot causes a blockage in an artery in the brain. Part of the brain dies and paralysis or death can occur. Sometimes these “attacks” are not caused by blood clots but by temporary constriction of blood vessels or by a temporary reduction in blood flow, as seen in angina patients.

### **Ischemic Colitis - a "Colon Attack"**

Most people don't know that the same process can occur in the colon, or large intestine. This condition is called ischemic colitis. The word ‘ischemia’ means lack of blood. Colitis means inflammation of the colon. People with ischemic colitis experience a portion of the colon becoming inflamed and ulcerated due to a shortage of oxygen-rich blood. Ischemic colitis can be thought of having a "stroke" in the colon. If blood flow to the colon is reduced sufficiently, damage occurs to the inner lining or mucosa and if damage is severe enough, the mucosa dies and is sloughed off leaving an ulcer. If the ulcer is not treated, this could lead to a perforation, or hole, in the colon.

### **Anatomy**

For a better understanding of ischemic colitis, you should review some basic anatomy. The average adult digestive tract is about thirty feet long. The food goes down the esophagus (food pipe) into the stomach pouch where acid digestion liquefies solids. The actual digestive process and absorption of nutrients occurs within the twenty feet or so of small intestine. The last six feet of the digestive tract is the colon. Here the waste water is purified and reabsorbed back into the blood stream.

### **Blood Flow to the Intestines**

Even though the intestines process all the food that we eat, they cannot take nutrients or oxygen directly from food. Rather, like all other body organs, the intestines depend upon a constant flow of blood. The heart pumps this blood into the abdominal aorta, the main artery that enters the abdomen. The abdominal aorta has three side branches that carry

blood directly to the digestive tract. Each has a different territory.

- **Celiac Artery**  
The celiac artery supplies the stomach and the upper part small intestine, or duodenum.
- **Superior Mesenteric Artery**  
The superior mesenteric artery (SMA) supplies blood to the rest of the small intestine and the right and mid-portion of the colon.
- **Inferior Mesenteric Artery**  
The inferior mesenteric artery (IMA) supplies blood to the left side of the colon and the rectum.

These three branches intercommunicate through smaller collateral vessels. In about 5% of individuals, collaterals between the SMA and IMA are underdeveloped or absent. This makes the area in-between more vulnerable to drops in blood flow, often referred to as the "watershed area."

### **Occlusive vs. Non-Occlusive Causes**

In general, about 10% of the blood pumped out of the heart goes to the intestinal tract. But, the exact amount may vary from moment to moment. In cases of ischemic colitis, blood flow to a portion of the intestine is significantly reduced for a while. Many factors may be responsible. Intestinal blood flow can be reduced by a physical blockage in the artery, such as a blood clot. This is called occlusive disease.

However, in most cases, ischemic colitis is non-occlusive - meaning that there is no blood clot obstructing the flow of blood. Rather, a temporary spasm of small blood vessels within the colon wall due to changes in heart rate, blood pressure, or various medications may be the cause. This "vasoconstriction," may reduce blood flow enough to damage that portion of the colon.

### **Death of the Colon**

Whatever the cause, if blood flow is reduced for a long enough period of time, that portion of the colon will be damaged, usually the inner lining, the mucosa, being damaged first.

The colon wall has an inner and outer covering. The tough outer layer is called the serosa. The "meat" of the wall, called the muscularis, is very resistant to ischemic damage. It is the delicate inner covering that is most vulnerable to ischemia. This is why most cases of ischemic colitis have damage only to the inner colonic mucosa.

### **Who is at Risk?**

Ischemic colitis is very much like coronary artery disease. Both conditions are caused by decreased blood flow - one in the heart, and the other in the colon.

The risk factors for ischemic colitis:

- Age over 50
- Smoker
- High blood pressure
- High cholesterol
- Diabetic
- Received radiation to abdomen

There has been some recent evidence that some patients with this problem suffer from an abnormality in blood clotting called a "hypercoagulable condition." This process is important to stop bleeding outside the body but blood is not supposed to clot *within* the arteries and veins. If it does, it can block blood flow to an organ, such as the colon. Recent studies suggest that an underlying hypercoagulable condition may cause such blood clots and be the underlying cause of some cases of ischemic colitis. Occasionally, an individual will have an episode without any identifiable risk factors.

### **Symptoms of Ischemic Colitis**

- Severe abdominal pain
- Diarrhea
- Bright red or maroon colored blood with diarrhea/stool
- Nausea and/or vomiting
- Low grade fever

### **Diagnosis**

The history of abdominal pain and bloody diarrhea raises suspicion. Despite severe abdominal pain, there is often an unexpected lack of tenderness when the doctor examines the abdomen. Blood tests, CT scan x-rays are often helpful in making the diagnosis. If the diagnosis is still unclear, a limited colonoscopy exam may be requested to visualize the inner lining.

If occlusive disease is suspected, an abdominal arteriogram may be ordered. This is an x-ray of the arteries in the abdomen. A balloon angioplasty might be performed to open up the narrowed segment.

### **Treatment**

Many patients experience spontaneous recovery without treatment. Mild cases may not even seek medical attention. Severe cases require hospitalization. Most inpatients are treated with IV fluids and are often administered antibiotics to lessen the chance of infection. Food is initially withheld to allow the intestines to rest for a few days. Most patients do quite well and are home in a few days. If they are anemic, they may be given iron pills for a month or so to help the body replace lost blood. If the colon ulcers were severe, prescription drugs like mesalamine (Asacol) may be prescribed to help the ulcers heal more quickly.

## **Surgery?**

Surgery is rarely used as a treatment. In severe cases of acute disease and chronic strictures, surgical removal of the colon if a perforation has occurred or if there is a gangrenous (dead) portion of the colon due to an extended portion of time where the blood flow was interrupted.

## **Can an Attack be Prevented?**

There is no way to reliably prevent a repeat episode. Possible ways to reduce a repeat episode:

- Low dose daily aspirin to reduce the risk of blood clots
- Avoiding all tobacco products must be avoided
- Over-the-counter cold remedies containing decongestants such as phenylephrine, phenylpropanolamine (also known as PPA), and pseudo ephedrine should not be used--- these ingredients produce a narrowing of blood vessels. This can help with of nasal congestion, but it may also cause and decrease in blood flow.
- Anti-hypertension (low blood pressure) medication may be prescribed for you by your doctor. Your blood pressure will be closely monitored to be sure it does not drop too low (you would report feelings of feeling faint and dizzy to your doctor and change positions slowly).