

# Complications of inflammatory bowel disease

## What is meant by the term 'complications'?

A complication is a problem that arises as a consequence of an underlying disease. In IBD there is inflammation of parts of the gastrointestinal tract. While treatment usually leads to improvement of the inflammation and, as a result, improvement of the symptoms, complications can sometimes occur.

Complications of IBD can be divided into two types:

- Those related to the inflammation of the intestine itself.
- Those outside the intestine – often called 'systemic' or 'extra-intestinal' complications.

Most people with Crohn's disease and ulcerative colitis will never experience a serious complication, but it is important to be aware of them so they can be addressed early and treated by your medical team.

## What are some of the more important complications of ulcerative colitis that are related to the intestines?

Several complications that are directly related to inflammation in the colon can occur in ulcerative colitis. These include severe anaemia (low blood count and haemoglobin) due to blood loss in the stool, dehydration due to severe diarrhoea, and delayed growth and development in children. Anaemia can be treated with iron supplements, dehydration with fluids (sometimes given intravenously), and delayed growth with treatment of the colitis.

The most serious complications, however, are what is referred to as 'fulminant colitis' and 'toxic megacolon'. Fulminant colitis is very severe colitis for which patients are usually hospitalised. In addition to bleeding and diarrhoea, there may be fever, worsening abdominal pain, and abdominal distention.

Usually the symptoms will come under control with aggressive medical treatment (with intravenous steroids, biologicals, or





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cyclosporin, which are discussed in the preceding chapter). If people do not respond within two to three days, there is a risk of the colon becoming very dilated (toxic megacolon), associated with a high risk of a perforation (hole in the bowel) and serious infection. In this setting, urgent surgery will likely be necessary.

Rarely, strictures may develop in the colon. A stricture is the medical word for a narrowing. When there is inflammation, the repair process of the body involves laying down scar tissue to repair the area. Excessive scar tissue can eventually cause the area to narrow, and the result can be a partial blockage. Strictures can often be opened up or dilated with a balloon that is passed through a colonoscope. Sometimes they may require surgery. Strictures are much more common in Crohn's disease than in ulcerative colitis.

### What are some of the more important complications of Crohn's disease that are related to the intestines?

Like people with ulcerative colitis, those with Crohn's disease can also have problems with anaemia (low blood count and haemoglobin) and dehydration, related to bleeding, diarrhoea, and difficulty eating. Since Crohn's disease can affect the small intestine as well as the colon where nutrients are absorbed, there can also be deficiencies in vitamin B12, folate, and other vitamins. There may be weight

loss and delayed growth in children. These complications can usually be corrected by giving iron, vitamins and treating the Crohn's diseases.

**Strictures** (areas of the intestine that are narrowed) can be caused by inflammation (inflammatory strictures) or scarring (fibrotic strictures). Inflammatory strictures occur because the wall of the inflamed intestine becomes swollen and thickened, narrowing the inside of the intestine (lumen).

Fibrotic strictures, on the other hand, result from scarring in an area that may have been inflamed over a long period of time. Whether a stricture is inflammatory or fibrotic, if it is very narrow or 'tight', it can cause a partial or complete blockage – an obstruction. Inflammatory strictures will often improve with treatment of the Crohn's disease. As the inflammation in the wall subsides, the wall becomes less swollen, and the lumen opens up.

Fibrotic strictures, however, are due to scarring and usually will not improve with medication. Occasionally, if they can be reached with a colonoscope, they can be opened up by passing a balloon through the stricture and inflating the balloon. Otherwise, they may need to be treated surgically (see the previous chapter).

**Fistulae** (or fistulas) are tunnels that connect two different structures. To understand why people with Crohn's disease get fistulae, remember that Crohn's disease affects the entire wall of the colon, from the

inside lining to the outer wall (transmural inflammation). If the outside wall is inflamed, that inflammation can occasionally go outside the wall of the intestine, creating a tunnel that will keep extending until it reaches another structure or the skin. That structure can be another loop of intestine, the bladder, vagina, or, as mentioned, the skin. The most common place to get fistulae is in the skin around the anal area.

An **intra-abdominal abscess** is a pocket of infection outside the intestines. Everyone has bacteria inside the intestines. This is normal. The wall of our bowel prevents those bacteria from escaping. However, if the inflammation in the wall of the bowel is very severe, a perforation (hole in the intestine) can occur. This releases the bacteria into the abdominal cavity. Our body will naturally try and wall-off the infection, forming an abscess.

Intra-abdominal abscesses need to be drained. Sometimes this can be done by placing a very small tube into the abscess. Sometimes it requires surgery. People with intra-abdominal abscess are usually very ill. This condition is usually diagnosed using a CT scan.

**Perianal abscesses** in people with Crohn's disease also occur around the anus. If someone has fistulae draining in this area

and the skin heals over, bacteria can become trapped under the skin and an abscess can form. Abscesses in the anal region can be quite painful and need to be drained with a minor surgical procedure.

Abscesses are serious complications that need to be dealt with urgently, because the bacteria inside the abscess can get into the bloodstream (known as 'sepsis') which is a medical emergency.

## What are the common extra-intestinal manifestations of IBD?

Although the main site of inflammation in IBD is in the gastrointestinal tract, the disease can also cause symptoms to appear in other parts of the body. The reasons for these extra-intestinal manifestations are unknown but are probably related to the same abnormal response of the immune system that causes disease in the intestines.

The types of extra-intestinal manifestations associated with IBD include:

- arthritis
- eye disorders
- kidney disorders
- liver disease
- skin disorders
- malabsorption and malnutrition.



Arthritis symptoms usually accompany flares of the intestinal symptoms of IBD and many times subside once the disease comes under control.



## Arthritis

Inflammation in the joints (arthritis) is the most common extra-intestinal complication of IBD, affecting approximately 25 per cent of people and known as 'inflammatory arthropathy'. This may occur in the joints of the arms and legs, the lower spine and the sacroiliac joints. Arthritis symptoms usually accompany flares of the intestinal symptoms of IBD and often subside once the disease comes under control.

Another form of arthritis that is associated with IBD is ankylosing spondylitis, which causes inflammation and fusing of the vertebrae of the spine. People with severe joint symptoms are usually referred and managed by a rheumatologist (arthritis specialist).

## Eye disorders

While uncommon, some people with IBD will get eye involvement. Episcleritis is inflammation of the covering of the sclera (the white part of the eyes), scleritis (inflammation of the sclera itself), and uveitis (inflammation of the middle of the eye, including the iris). Eye symptoms can include pain, redness and blurred vision.

Scleritis and uveitis can lead to vision loss if not promptly treated, so it is important to see your doctor if you develop any eye symptoms.

## Liver disease

Primary sclerosing cholangitis (PSC) is a rare extra-intestinal manifestation of IBD. PSC causes inflammation around the bile ducts inside and outside the liver. To understand where the inflammation is located, it is important to understand that the liver makes bile. Bile helps in the absorption of fats and nutrients.

Each liver cell makes a little bile and secretes the bile into microscopic tubes or ducts. These join to form larger and larger ducts, eventually joining to form one major duct, called the common bile duct, which carries all the bile into the intestine.

The inflammation in PSC occurs both in the small and large bile ducts. Over time, this inflammation can cause scarring and blockage of the ducts and damage to the liver. People with PSC have an increased risk of cancer, especially bowel cancer, and should have annual surveillance colonoscopies. PSC is more commonly seen in people with ulcerative colitis than those with Crohn's disease. It is a relatively rare complication of IBD. People will usually have abnormal liver blood tests, which eventually leads to the diagnosis.

## Skin Disorders

One of the most common and troublesome skin disorders is erythema nodosum (tender red bumps that occur on the shins, ankles and arms). Erythema nodosum usually worsens during flares of IBD and improves once the disease comes under control. Ulcers in the mouth (aphthous stomatitis) are also common and flare with abdominal symptoms.

Pyoderma gangrenosum is a rare but more serious skin disorder that usually begins as small red bumps, which develop into painful skin ulcers, usually on the legs or around stomas. Pyoderma gangrenosum is usually treated with immunosuppressant and biologicals (see '**Medications**' chapter). Remember that medications can also cause skin problems. Steroids, for instance, can cause acne, thinning of skin and easy bruising. Allergies to medications can cause rashes.

## Can IBD lead to bowel cancer?

People with ulcerative colitis and Crohn's disease involving the colon have a higher risk of bowel cancer than the general population. Two factors determine the risk of cancer: how much colon is involved and the total duration of the disease.

A 'surveillance' colonoscopy is recommended for at-risk patients. Colonoscopy can pick up microscopic precancerous changes in the colon referred to as 'dysplasia'. Surveillance usually starts after the disease has been present for 7-10 years. The frequency of future examinations is determined by the findings. New Zealand has guidelines as to how often surveillance colonoscopies should be performed.

