The IBD Corner

What are the differences between Crohn's disease and ulcerative colitis?

The previous article in this series described the anatomy of the gastrointestinal tract and provided a brief overview of Crohn's and ulcerative colitis (UC). This article will set out some of the differences between these two diseases.

As explained previously, both Crohn's and UC involve inflammation of the gastrointestinal (GI) tract. However, they differ in the way in which the inflammation occurs and the location.

In Crohn's, the inflammation can occur anywhere along the GI tract from the mouth to the bottom, though certain places (for example, the terminal ileum) are more commonly affected. The disease occurs in a patchy manner meaning that affected parts of the bowel are separated by parts that are healthy (skip lesions).

In UC, however, the inflammation is restricted to the large bowel. The disease starts at the bottom and affects a variable amount of the upstream bowel in continuity. In some individuals, it may just affect the lower part (proctitis), whereas in other individuals the whole of the large bowel may be affected (pancolitis).

It is not only the location of the inflammation that differs between the diseases, but the potential depth of the inflammation too. The wall of the bowel is made up of a number of layers. The innermost portion, called the mucosa, is in contact with the food or stool passing through. Beneath the mucosa are supporting and muscular layers. In UC, the inflammation is restricted to the mucosa. However, in Crohn's, the inflammation can extend throughout the thickness of the bowel wall. Sometimes it may go all the way through the bowel wall and connect the bowel to other structures or organs such as neighbouring loops of bowel, the bladder or the skin, with fistulae. Inflammation throughout the bowel wall can also cause it to become thickened and tightened leading to a narrowing (stricture). These differences can be seen both when a doctor looks at the bowel with a telescope (colonoscopy) or when a doctor looks at a sample of the tissue (biopsy) under a microscope.

As a consequence of the differences in the location of the bowel affected and the nature of the inflammation, the symptoms of Crohn's and UC can be different. Because in UC, the bottom of the bowel is always affected, it typically presents with bloody diarrhoea. However, in Crohn's the symptoms are more variable and include pain, diarrhoea and weight loss.

Some patients with Crohn's only have inflammation in the large bowel (Crohn's colitis) and as a result it can sometimes be difficult to tell the difference between the two diseases. In such cases, the disease may be called IBD unclassified or indeterminate colitis. As the disease progresses it may start behaving more typically like Crohn's or like UC. It is also possible for someone to be diagnosed with one form of IBD and for this diagnosis to be changed to the other type. In reality, dividing IBD into Crohn's and UC is most probably an oversimplification and it is possible that there are in fact many different subtypes of IBD each with significant overlap.

Some of the processes leading to Crohn's and UC are shared. This is demonstrated by the fact that in some families, both diseases are seen to occur. Interestingly, there are some risk factors that are different between the diseases, most notably smoking: cigarette smokers are more likely to develop Crohn's disease and less likely to develop ulcerative colitis. The reasons for this are not well understood.

The treatment approaches for Crohn's and UC differ, particularly with regards to surgery, and this will be discussed further in a future issue.

This article is for information only and should not be used in place of seeing a medical professional. If you have any questions regarding your own health, please see your doctor. This article has been written by Dr Adam Levine MBBS, PhD (doctor and researcher), and Dr Elena Schiff PhD (geneticist and researcher) at University College London.

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