Extraintestinal Complications: Kidney Disorders

The kidneys filter the body's blood supply and eliminate waste through urine. These two organs, which are located in the center of the back just below the ribcage, are part of the renal system. In addition to the kidneys, the renal system consists of the ureters, bladder, and urethra for the passage, storage, and voiding of urine.

Serious kidney complications associated with IBD are rare, but some less serious ones occur more frequently.

Kidney stones

These are probably the most commonly encountered kidney complications of IBD—particularly oxalate stones. Kidney stones are more common in Crohn's patients with disease of the small intestine than in the general population because of fat malabsorption. Fat binds to calcium, leaving oxalate (a type of salt) free to be absorbed and deposited in the kidney, where it can form into stones. The risk for developing kidney stones of this type is higher in people who have had a number of small bowel resections and are therefore more prone to dehydration. Their urine is more concentrated, a condition that is more likely to lead to stone formation. Symptoms may include sharp pain, nausea, vomiting, and blood in the urine. Kidney stone treatment calls for an increased fluid intake together with a low-oxalate diet (one that's rich in juices and vegetables).

Uric acid stones

These are kidney stones made of pure uric acid crystals. This type of stone develops in acidic urine and is caused by increased uric acid absorption in the injured colon. If these kidney stones do not pass spontaneously, it may be necessary to remove them surgically or with an endoscope (an instrument used to examine an internal part of the body with a lighted tube).

Hydronephrosis

This is a direct anatomical complication of IBD, particularly Crohn's disease. It is an obstruction of one of the ureters, the tubes connecting the kidney to the bladder. It generally occurs with the right kidney because that is the one closest to the terminal ileum—the lower segment of the small intestine and the most common site of Crohn's disease. When the diseased ileum puts pressure on the ureter, urine is prevented from draining into the bladder. The blockage causes abnormal enlargement of the kidney and the formation of scar tissue there. Signs and symptoms include a dull pain in the kidney area as well as blood or pus in the urine. Surgical intervention is usually required, with removal of the inflamed tissue and neighboring section of bowel so that urinary flow is restored.

Fistulas

Fistulas are abnormal connections either within the intestine or between the intestine and other organs. When a fistula develops between the intestine and the bladder or the ureter, the result is frequent urinary tract infections and sometimes air in the urine. Men are more often affected than women. Although

metronidazole, azathioprine, and infliximab can be effective in closing fistulas in other parts of the body, they are often ineffective for fistulas to the bladder. Surgery is sometimes an effective option.

Amyloidosis

This condition is marked by deposits of an abnormal protein called amyloid in various organ tissues, including the kidneys. Although it occurs more in Crohn's disease (affecting only about one percent of patients) than in ulcerative colitis, it is still a relatively rare disorder and is generally only seen in cases of long-term and severe disease. Proteinuria, an elevated level of protein in the urine, is one sign of amyloidosis. A biopsy (tissue sample) of the kidney can confirm the diagnosis. Various medications may be effective in slowing or halting the condition.

Glomerulonephritis

This is another rare complication of IBD. An abnormality in the glomerulus, a cluster of blood vessels in the kidney, produces a lesion in the kidney that hinders its filtering ability. In extreme cases, kidney dialysis or transplantation may be required.

Drug toxicity

This is occasionally responsible for kidney complications, although toxicity issues generally resolve when the drug in question is discontinued. The immunosuppressive drug cyclosporine, for example, may cause constriction of the blood vessels in the kidneys and thereby alter kidney function. If this is not picked up quickly, kidney failure may result. Similarly, sulfasalazine and the 5-ASA drugs may produce kidney toxicity. Kidney function should be monitored periodically in people with IBD, regardless of which medication they are receiving.