

Volvulus Diagnosis and Management

Volvulus is defined as a rotation of a section of the digestive tract around its mesenteric axis. The rotation may restrict the blood supply to the affected section of the digestive tract. Diagnosis is made with abdominal X-ray, in which a coffee bean sign or kidney bean sign might be visualized depending on the type of volvulus. Abdominal CT can also be used, where a whirl sign can help diagnose volvulus. On a barium enema, a bird's beak sign might be visible in patients with volvulus. Management is achieved through fluid resuscitation, surgery, and possible antibiotics.



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Diagnosis

Abdominal X-ray

Abdominal X-ray

The diagnostic workup of abdominal pain may begin with abdominal radiographs. Depending on the type of volvulus, several characteristic signs may be visible.

Coffee Bean Sign

Coffee Bean

The coffee bean sign occurs primarily in sigmoid volvulus. The sign is produced in the X-ray projection by the fact that an ascending, inflated loop of intestine attaches itself closely to a descending loop. The two dilated intestinal loops then represent the two halves of an oversized coffee bean. In conjunction with the clinical findings, it often enables a diagnosis to be made.

Kidney Bean Sign

Kidney Bean

The kidney bean sign is a radiologic sign that might be seen on the abdominal radiographs of patients with volvulus. In a cecal volvulus, the haustra may make the shape of a kidney bean in the left upper quadrant.

Abdominal CT Scan

Abdominal Cat Scanner

Abdominal CT can aid in examining the extent of the volvulus. One of the confirmatory signs for volvulus is the whirl sign.

Whirl Sign

Whirl

The whirl sign (also known as whirlpool sign) is seen when the bowel rotates around its mesentery. This leads to whirling of the mesenteric vessels and tissues.

Barium Enema

Berries and Enema-Emma

In a barium enema, a barium sulfate suspension or a water-soluble contrast medium is introduced into the rectum or the large intestine via a probe or an intestinal tube. The contrast agent is distributed throughout the colon and thus marks the bowel contours. In addition, air can be introduced to achieve a double contrast. An X-ray is then performed, which will visualize the contrast medium. This imaging technique is used when the diagnosis is unclear following X-ray.

Bird's Beak Sign

Birds Beak

A "bird's beak" sign may be seen on X-ray with a barium enema at the point where the segment of proximal bowel and distal rotate to form the volvulus. This should be differentiated from a similar bird's beak sign seen in achalasia at the lower esophageal sphincter.

Management

Fluid Resuscitation

IV Fluid

To correct fluid deficits and hypovolemia, patients with volvulus are initially resuscitated with intravenous isotonic crystalloid solution.

Surgery

Surgeon

Management of volvulus depends on location. Sigmoid volvulus can be managed with endoscopic detorsion or decompression, but if signs of necrosis are present resection is indicated. For those with signs of sepsis or an abdominal catastrophe, immediate surgery and resection is advised. Cecopexy in the case of cecal volvulus involves the rotation of the cecum into a normal position and suturing it in place. The early detection of cecal volvulus can be managed with laparoscopic surgical techniques.

Consider Antibiotics

ABX-guy

In the case of peritonitis, antibiotic treatment should be considered alongside surgical rehabilitation. If signs of peritonitis or bowel perforation are present, broad-spectrum antibiotics should be started.