



Short Bowel Syndrome: its Causes, Symptoms and its Treatment

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ARTICLE HISTORY

Received: 02-Jan-2023, Manuscript No. JCMEDU-22-87764;
Editor assigned: 06-Jan-2023, Pre-QC No. JCMEDU-22-87764 (PQ);
Reviewed: 20-Jan-2023, QC No. JCMEDU-22-87764;
Revised: 27-Jan-2023, Manuscript No. JCMEDU-22-87764 (R);
Published: 03-Feb-2023

Description

Short Bowel Syndrome (SBS or simply short bowel) is a rare malabsorption disorder caused by a lack of a functional small intestine. The primary symptom is diarrhea, which can result in dehydration, malnutrition, and weight loss. Other symptoms may include bloating, heartburn, feeling tired, lactose intolerance and smelly stools. Complications can include anemia and kidney stones. Most cases are caused by surgical removal of a large part of the small intestine. This is most often required for Crohn's disease in adults and necrotizing enterocolitis in young children. Other causes include damage to the small intestine by other means and being born with an abnormally short intestine. It usually does not develop until less than 2 m (6.6 ft) of the normal 6.1 m (20 ft) small intestine remains [1].

Treatment

Treatment may include a specific diet, medication, or surgery. The diet may include mildly salty and mildly sweet liquids, vitamin and mineral supplements, small frequent meals, and avoidance of high-fat foods. Occasionally, it is necessary to give nutrients through an intravenous route, known as parenteral nutrition [2]. Medications used may include antibiotics, antacids, loperamide, teduglutide, and growth hormone. Different types of surgery can help some people, including a bowel transplant [3].

Short bowel syndrome is newly diagnosed in about three people per million each year. It is estimated that about 15,000 people in the United States suffer from this condition. The prevalence in the United States is approximately 30 cases per million, and in Europe it is approximately 1.4 cases per million (but rates vary widely between countries) [4]. The prevalence of short

bowel syndrome has more than doubled over the past 40 years. The European Medicines Agency classifies it as a rare disease. The results depend on the amount of intestine remaining and whether or not the small intestine remains connected to the large intestine [5].

Causes

Short bowel syndrome in adults and children is most often caused by surgery (bowel resection). Of those who undergo bowel resection, approximately 15% will eventually develop small bowel syndrome (75% of these as a result of 1 large resection and 25% as a result of multiple separate bowel resections) [6]. This operation can be performed for:

- Crohn's disease, an inflammatory disease of the digestive tract
- Mesenteric ischemia, embolic or thrombotic events that can occur in the arteries or veins that supply or drain the intestines, leading to disruption of the blood supply to the intestines and ischemia [7].
- Volvulus, a twisting of the small intestine often caused by intestinal malrotation, which quickly cuts off the blood supply and leads to tissue death
- Tumors of the small intestine
- Radiation enteropathy, radiation damage to the small intestine due to radiation therapy for cancer
- Injury or trauma to the small intestine
- Necrotizing enterocolitis (premature neonate)
- Bypass surgery to treat obesity
- Surgery to remove a diseased or damaged part of the small intestine

Some babies are also born with an abnormally short small intestine, known as congenital short intestine.

Surgical complications requiring reoperation are a common cause of small bowel syndrome and are estimated to contribute to up to 50% of cases. These surgical complications include internal hernias, volvuli, ischemia, or profound hypotension [8].

Symptoms

Symptoms of short bowel syndrome may include:

- Abdominal pain
- Diarrhea and steatorrhea (greasy, bulky stools that may be foul-smelling)
- Depletion of fluids
- Weight loss and malnutrition
- Fatigue

People with short bowel syndrome may have complications from malabsorption of vitamins and minerals, such as deficiencies of vitamins A, D, E, K, B9 (folic acid) and B12, calcium, magnesium, iron and zinc. They can manifest as anaemia, hyperkeratosis (skin peeling), easy bruising, muscle cramps, poor blood clotting and bone pain.

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