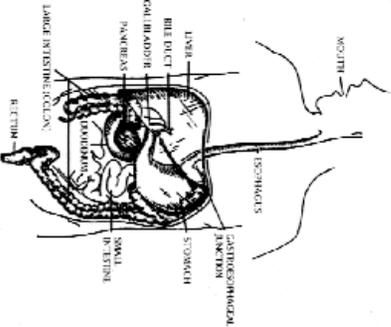


Gastrointestinal Tract in Scleroderma



The blood vessels of the gastrointestinal (GI) tract and those that nourish the nerves of the GI tract become affected in scleroderma. The result is decreased muscle tone, muscle scarring and atrophy (loss of muscle mass), decreased ability to move foods in an orderly fashion, and decreased ability to digest foods. Any part of the GI tract can be involved in scleroderma.

Mouth

Involvement of the mouth occurs in approximately 40% of patients and is associated with "Sicca" or dry mouth. Dry mouth can occur from many medications (e.g. antidepressants) but also because there is decreased salivary flow in scleroderma. This, in turn, can impair early digestion since saliva contains enzymes to help break down food. It also prevents the normal cleaning of the teeth so that dental caries and periodontitis (inflammation of the gums) may occur. Regular dental checkups are necessary, although it may be hard for dentists to work, as those with scleroderma may have difficulty opening their mouths wide. Treatment includes the use of good dental hygiene and appropriate brushing, increased fluids with meals, and occasionally a medication such as oral pilocarpine (Salagen®).

Esophagus

Involvement of the esophagus can cause heartburn, dysphagia (difficulty swallowing), bleeding, and aspiration (taking bits of food into the lung) with pulmonary problems. Barium-swallow x-rays and video

x-rays often test esophageal involvement. Manometry is sometimes used, during which a small tube is passed into the esophagus to allow measurement of muscle contraction. Endoscopy, in which a tube is placed into the esophagus to examine it visually, is also often used. Patients with esophageal symptoms should avoid becoming overweight, and eliminate smoking, drinking coffee or non-herbal and some herbal teas, or eating chocolate or acidic foods such as orange or tomato juice. Tight clothing should be avoided, and six-inch blocks to raise the head of the bed can help prevent reflux while sleeping.

Antacids such as H2 blockers (Tagamet®, Zantac®, Pepcid®, Axid®), are sometimes used, but proton-pump inhibitors such as omeprazole (Prilosec®) and lansoprazole (Prevacid®) are more effective. Drugs that improve movement of food down the esophagus, such as metoclopramide (Reglan®) and cisapride (Propulsid®) are also often helpful. While usually safe, these drugs can cause side effects such as restlessness, involuntary muscle movements, gassiness, diarrhea, a feeling of shakiness, and rare liver and white blood cell abnormalities.

Stomach

The stomach is involved in only 10% of patients but can be associated with bloating, satiety (early fullness), abdominal pain, nausea and vomiting. Testing of the stomach is the same as for the esophagus. Scanning techniques are sometimes used to examine stomach function. This involves eating some food with a very small amount of radioactivity in it and then following the radioactivity with a Geiger counter-like instrument to see how it moves down the GI tract. Another test that is sometimes useful is pH monitoring, during which a small tube is left in the stomach to measure its acidity for up to 24 hours.

Small Intestine

When the small intestine becomes involved, nausea, vomiting, bloating, diarrhea, and malabsorption (poor absorption of nutrients) can occur. The latter can result in weight loss and malnutrition. When muscle function of the small intestine is impaired, food

remains there longer and allows an overgrowth of bacteria. This, in turn, results in a breakdown of bile and other enzymes which help absorb food. Fat may not be absorbed and may cause diarrhea as well as weight loss, bloating, and abdominal pain from gas build-up. Rotating antibiotics, such as amoxicillin, ciprofloxacin, ampicillin, metronidazole, and tetracycline are often used.

Fat intake is sometimes decreased to prevent bloating and diarrhea, or a special oil called MCT (medium chain triglycerides) is given. Fat-soluble vitamin supplements may be needed (such as vitamin K). Poorly digestible foods should be avoided, including popcorn, pea pods, corn and celery. Occasionally, digestive enzymes such as pancreatic enzymes need to be added as well. Finally, in severe malabsorption, the use of feeding of nutrients into the veins (parenteral nutrition) may be required, although this is seldom necessary.

Large Intestine (Colon)

The large intestine is involved in 39% of patients. As in other areas, the muscles become weak, and constipation and bloating can occur. Diarrhea, from malabsorption in the small intestine, can also occur. Constipation needs to be treated with fluids and bulk and diarrhea needs to be treated by treating the poor absorption in the small intestine. In some patients, fecal incontinence (the inability to control stools) occurs. This very rare complication can be treated by controlling stool bulk, but, extremely rarely, may benefit from surgery.

Gas may be a problem and may be helped by eliminating milk products and sugar. Boiling milk and special milks such as Lactaid may help. In very severe cases, a special diet, called "gluten-free," may be needed.

It should be remembered that not everyone with scleroderma will be affected by all of these symptoms, that many of these symptoms may occur without scleroderma involvement (e.g. most people get occasional diarrhea or constipation, even without disease), and that the severity of symptoms varies from person to person.

Glossary of Terms

Aspiration: Movement of acid or stomach contents from the esophagus into the lungs or mouth. This may leave a bitter taste or cause coughing or choking.

Dysphagia: Difficulty swallowing.

Esophagus: A muscular tube from the mouth to the stomach.

Heartburn: The burning or painful sensation caused by acid backing up into the esophagus.

Large intestine: This consists of the colon and can be described in three sections. The most commonly discussed are the sigmoid colon (the last part of the colon), the rectum, and anus.

Reflux: Splashing of acid from the stomach back up into the esophagus.

Small intestine: The part of the GI tract from the stomach to the large intestine, consisting of the duodenum (first part), jejunum (long middle part, up to 20 feet long), and ileum (small end part).

Stomach: The part of the intestine between the esophagus and small intestine. It helps mix food with digestive juices (acid, enzymes).

Stricture: A narrowing of the esophagus or other parts of the GI tract due to scarring.

The symptoms of GI involvement include heartburn, bloating, dysphagia, diarrhea/constipation, abdominal pain, weight loss, coughing, choking, etc.

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Your local chapter:

A member of the Scleroderma Foundation, an international non-profit organization servicing the needs of persons with scleroderma and related diseases.

Disclaimer: The information provided is for educational purposes only. Any drugs or treatments mentioned should be discussed with your own physician (s).



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