

BALLOON ENTEROSCOPY

The use of upper and lower gastrointestinal endoscopes has revolutionized the diagnosis and treatment of diseases of the esophagus, stomach, duodenum, and colon. The last remaining frontier in the intestines has been the small intestine. Wireless capsule endoscopy allows physicians to visualize the inside of the intestines from the esophagus through to the colon, but capsule does not allow for therapy of lesions that may have been identified on the exam. Although capsule endoscopy is likely to remain an important diagnostic procedure because of its simplicity, the limitations of capsule endoscopy have been overcome by the development of balloon endoscopy, also known as enteroscopy.

What is balloon endoscopy?

There are two types of balloon endoscopy: *single balloon* and *double balloon*.

Single balloon endoscopy

For single balloon endoscopy, a 200 cm long flexible, fiberoptic, endoscope (a hose-like tube one centimeter in diameter with a light and a camera on the tip) is fitted with an equally long overtube that slides the full length of the endoscope. On the tip of the overtube is a balloon that can be blown up and deflated. The balloon when blown up is used to anchor the overtube within the intestine. While the overtube is anchored, the endoscopy can be advanced further into the small intestine. By withdrawing the overtube the small intestine can be shortened and straightened to make the passage of the inner endoscope easier. The balloon may then be deflated so that the overtube can be inserted further and the endoscope advanced again. The endoscope itself is a standard endoscope with working channels that allow the intestine to be inflated with air, rinsed with water, or to guide biopsy or electrocautery instruments to the tip of the endoscope.

Double balloon endoscopy

For double balloon endoscopy, similar equipment is used, but a second balloon is located on the tip of the endoscope. Both balloons - the one on the overtube and the one on the endoscope - can be alternatively inflated to anchor the overtube or the endoscope to assist with the passage of the endoscope or overtube, respectively.

What to expect with balloon endoscopy

Balloon endoscopy, like other gastrointestinal endoscopy, requires intravenous sedation. The procedures are long, often requiring 1-3 hours. The most important complications of balloon endoscopy are perforation of the small intestine or bleeding either due to insertion of the endoscope or use of therapeutic instruments.

What is the future for balloon endoscopy?

Balloon endoscopy is revolutionizing the diagnosis and treatment of small intestinal diseases. Nevertheless, its use is restricted because of the large expenditure of time that is necessary to perform it. When there is concern about disease in the small intestine, wireless capsule endoscopy often is performed first. Then, if abnormalities are found, or if despite a normal capsule endoscopy there still is a strong suspicion that there is disease in the small intestine, balloon endoscopy may be recommended.