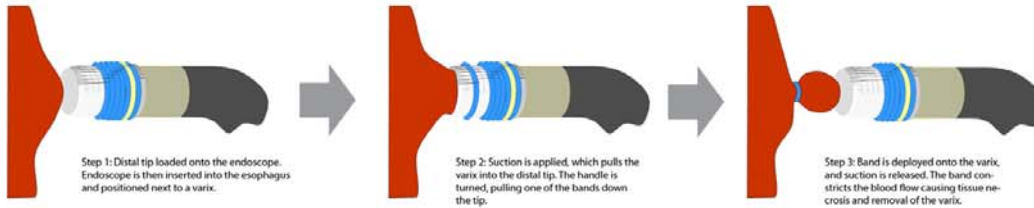


Boston Scientific

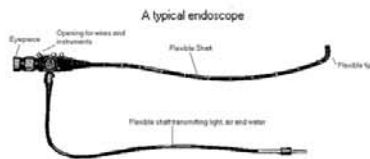
Endoscopic Band Ligation

The main goal of the project is to provide Boston Scientific with a prototyped design that improves the manufacturability of their band ligation product while meeting the needs of their customers.



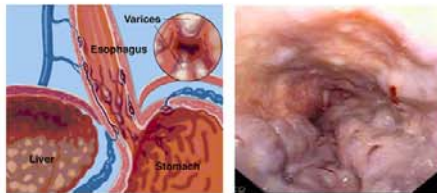
Endoscopy

Endoscopy is a minimally invasive diagnostic technique in which doctors use natural orifices to enter the body and locate a site of interest. Many devices can be used with an endoscope to perform minimally invasive surgery. Most endoscopes used in the gastro-intestinal tract are composed of a rigid or flexible tube, a light source and camera for visualization, a channel for irrigation and suction, and a working channel through which numerous medical devices can be passed.



The Condition

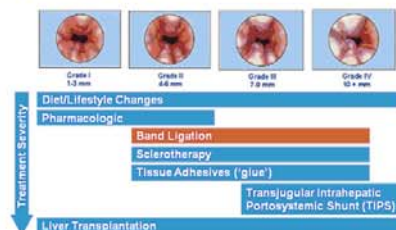
Esophageal varices are swollen blood vessels in the lower esophagus. They are a result of increased blood pressure in the veins, which is often caused by liver disease and portal hypertension. Esophageal varices are most commonly treated with endoscopic band ligation, a hemostasis technique that involves deploying a band around the varix to constrict blood flow.



Schematic of varices arising from portal hypertension

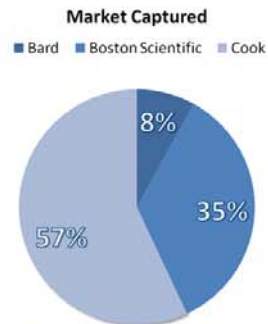
View down the esophagus reveals bleeding varices

Esophageal varices are usually a symptom of an underlying cause, particularly alcoholism or hepatitis. Depending on the stage of the disease, there are many treatments available, from non-invasive lifestyle changes to relatively severe operations.



Current Banders

There are three main banders currently on the market: Boston Scientific's Speedband Superview Super7™, Bard's Ultraview™, and Cook's Six Shooter™.



Boston Scientific's Super7: Pros: "best design", tactile feedback of band release, good visibility. Cons: difficult to manufacture, cannot band small varices.



Cook's Six Shooter: Pros: small size makes for easier navigation and banding of smaller varices, may be easier to assemble and manufacture. Cons: no tactile feedback, bands obstruct visibility.



Bard's Ultraview: Smallest market share. Pros: new product retracts onto endoscope tip for excellent vision, simpler manufacturing. Cons: no reputation (product not yet released), entirely different mechanism from what doctors are used to in Cook and Boston Scientific products.

