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## Trans-esophageal aortic compression balloon

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### Background

Massive blood loss from severe abdominal or distal limb trauma is challenging to control and necessitates surgical intervention. Current therapies rely on blood replacement products which can be difficult to obtain and may lead to complications for the patient. The **Trans-esophageal aortic compression balloon** works to control blood loss, reducing the need to replace lost blood.

The trans-esophageal aortic compression balloon is a simple, relatively non-invasive device that can assist with control of blood loss from massive abdominal and/or distal limb hemorrhage.

The device is designed to be inserted into the esophagus, the compression balloon is inflated at the abdominal hiatus thereby compressing the descending aorta. Compression at the abdominal hiatus controls blood flow to the abdomen and distal limbs while still allowing blood flow to the heart and brain.

The advantage of this device is that the balloon can be cycled (inflated and deflated) leading to reduced blood loss and preventing circulatory collapse.

### Areas of Application

- ✓ Medical trauma surgery
- ✓ Military: combat casualty care

### Competitive Advantages

- ✓ Allows for control of the blood flow distal to the hiatus while preserving blood flow to the thorax and brain
- ✓ Prevents circulatory collapse
- ✓ The technology may serve as a platform for additional devices (esophageal thermometer, ECG, or gastric pH monitor).

### Stage of Development

One pilot study in anesthetized pigs has been performed. The reduction of femoral blood flow, while maintaining carotid blood flow was tested.

### Intellectual Property Status

US provisional patent filed.