Oesophageal varices and their treatment

What are oesophageal varices?

People with cirrhosis (scarring of the liver) sometimes develop oesophageal varices. These are tortuous veins in the walls of the oesophagus (food pipe). These develop due to the restricted blood flow through the scarred liver. To maintain blood flow through the liver, the blood vessels to the liver expand to deliver more blood to the liver resulting in increased blood pressure within and around the liver. This is called **Portal hypertension**. This increased pressure causes certain blood vessels known as veins to dilate owing to the thin walls in these vessels. They also become tortuous similar to varicose veins seen in the legs. This is a major problem when such veins develop in the oesophagus and stomach, where trauma from food or acid can lead to rupture of these vessels and rapid bleeding.

![Diagram of liver and oesophagus showing varices](image)

How do varices present?

When varices bleed, the oesophagus and stomach rapidly fill with blood and usually results in vomiting of blood. The blood also rapidly passes through the intestinal system and is passed out through the back passage. If the blood passes very rapidly through the intestines it may be expelled as fresh red blood. More often however, the blood is partially broken down within the bowel and is expelled as dark red fluid or black fluid.
How commonly do varices bleed?

A third of all patients with cirrhosis will have varices. In patients with evidence of liver failures this rises to about two thirds. Signs of liver failure include yellow jaundice, swelling of the abdomen with fluid and easy bruising. The varices if present, will spontaneously rupture and bleed in about 5% of patients per year. The risk increases in patients who have already bled previously. About 1 in 3 people will die from each episode of bleeding unless they receive prompt treatment. Therefore it is important to seek help immediately if there is any evidence of bleeding.

How are varices diagnosed?

The presence of enlarged veins within the oesophagus or stomach can only be confirmed by endoscopy. This entails the passage of a long thin flexible tube, (the endoscope), through the mouth and down into the oesophagus and stomach to directly inspect these areas. Specific treatment can be performed during such an examination if thought necessary by your doctor. This is performed either awake after anaesthetising the throat with local anaesthetic or alternatively under a light sedative.

How can varices be treated?

If varices have never bled, the pressure in the veins can be reduced by the use of tablets, similar to treating high blood pressure elsewhere in the body. The medications most effective for this purpose are called beta-blockers. However once varices have bled, it is usually recommended these are treated by an attempt to induce thrombosis in the superficial veins, diverting blood into the better protected deeper veins. This is performed during an endoscopy by a process known as banding. Placing tight rubber bands over the dilated veins interrupts the flow of blood in the superficial veins, which subsequently undergo thrombosis, diverting the blood into the deeper layers of the oesophagus, which are protected from injury from food or acid. This does not affect the normal blood supply to the oesophagus. Alternatively a chemical can be injected into the veins during endoscopy to promote clotting of the veins.

If the veins bleed then you will also receive other treatment. A drug is given by injection before or after endoscopy to reduce the pressure in the veins. This is continued 4 times a day until you have stopped bleeding for 48hrs. You may also require a blood transfusion and drugs to make your blood clot better.

Occasionally varices continue to bleed despite the above measures. To stop the bleeding a tube is sometimes placed through the mouth into the oesophagus. This tube has a special balloon attached to the end which when inflated compresses the veins to stop them bleeding. In addition to stop the bleeding you may require an emergency operation to surgically divide the veins that are bleeding.
A further alternative is a procedure known as a shunt. This is done in the x-ray department when a short tube is placed via the superficial veins down into your Liver under x-ray guidance. The tube is positioned to create a passage between the high pressure veins and other low pressure veins within the liver. This results in rapid lowering of the pressure within the varices and helps stop the bleeding. This is a specialised procedure only performed in certain centres, the nearest being Leeds.

**What does Banding of varices involve?**

Banding is sometimes carried out as an emergency procedure to stop the bleeding if this does not stop spontaneously or shortly after the bleeding has stopped to ensure bleeding does not recur. Such a procedure may be performed any time during the day and night. This usually takes place in the endoscopy department, but if a patient is very poorly, then this may be performed in the operating theatre, sometimes under a general anaesthetic.

Once the bleeding has stopped, usually it is necessary to repeat the procedure 2 or 3 times over a period of a month or so, to obliterate the veins. Such procedures are carried out in the endoscopy department and you will be given advanced notice of such appointments. You will need to stop eating and drinking 4 hours before the procedure to allow clear view of the oesophagus and stomach. Such procedures are usually undertaken under a light sedative although some patients prefer to remain fully conscious and have local anaesthetic applied to the back of the mouth.

**During the test:**
The procedure usually takes approximately 10 minutes. After being taken into the endoscopy room a small needle is placed in the arm through which a sedative is given, (not necessary for those having local anaesthetic throat spray). Patients are asked to lie on the left hand side and a monitor is placed the finger to record the pulse and the oxygen content of the blood.

The endoscope is passed through the mouth, down the oesophagus and into the stomach to confirm where the varices are, how large they are and whether there is any evidence they have bled recently. The stomach is distended with air during the procedure to allow good visualisation, which may cause some bloating and discomfort. Any saliva within the mouth can be cleared using a special suction tube. Once an assessment is made the endoscope is removed and if treatment of the varices is needed, a special banding device is attached to the end of the endoscope.

This is passed again through the mouth and down the oesophagus. The bands are then released around the veins.

**After the procedure:**
Following the procedure patients are taken to the recovery area in the endoscopy department or the ward (if you have been admitted as an emergency). Here the nurses will monitor pulse and blood pressure whilst the effect of the sedation wears off. Following sedation patients are unable to drive or operate machinery for 12 hours and therefore will require someone to take them home. Patients may be aware of a sore throat following the procedure, which usually wears off within 24 hours. In addition you may feel a little bloated for a few hours.
Are there any possible complications?

- It is common to develop some minor ulceration where the bands have been placed. This heals in a few days but you may experience some pain on swallowing. Taking medication to coat the ulcerated areas, if this is a problem, can usually relieve this.

- Occasionally the ulcerated areas result in scarring and narrowing of the oesophagus causing food to stick when you swallow. This may improve over time but often requires a further endoscopy to dilate the narrowed area.

- Very rarely the oesophagus can be perforated during the procedure. This may require an operation to correct this.

Although such complications are concerning, the high risk of dying from an episode of bleeding far outweighs such potential complications.

Follow up appointments:

As stated previously most individuals will require 3 or 4 endoscopy sessions over a month or so the eradicate the varices. Patients also will be started on tablets to help lower the pressure within the veins known as betablockers. These can occasionally cause side effects such as dizziness, cold hands and feet, tiredness and loss of libido. These are usually continued for life. Further endoscopic procedures are also usually performed every 6 to 12 months to ensure the veins do not recur. Avoiding factors that will increase the pressure within the veins such as alcohol is also important.

*If you notice any signs of bleeding such as passing dark motions or vomiting blood you must seek urgent medical help.*