

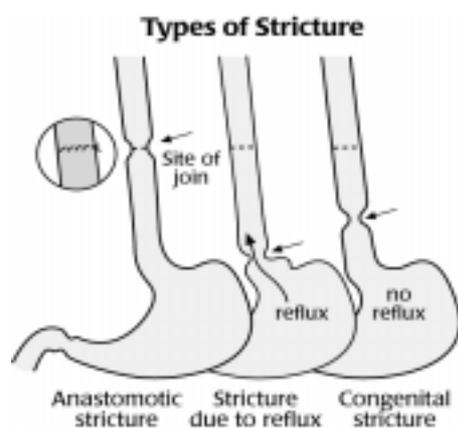
Strictures

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What is a stricture?

A stricture is the commonest problem requiring surgical treatment after TOF repair.

It is a narrowing in the oesophagus, usually due to scarring at the join (the anastomosis) between the two ends of the oesophagus. This is called an anastomotic stricture. Occasionally, a stricture develops lower down in the oesophagus; in this area it is usually due to gastro-oesophageal reflux. Very rarely, children with TOF/OA are born with a stricture in the lower oesophagus and this is congenital stricture.



Anastomotic strictures are more likely when the join-up of the oesophagus was difficult because of the wide gap between the two ends. If the join is under tension, the blood supply to the join site is impaired and it tends to heal as a tougher and more fibrous scar.

Strictures are believed to be worsened by gastro-oesophageal reflux; acid from the stomach damages the join in the oesophagus and leads to more scarring.

Symptoms of stricture

Typically, symptoms develop within a few weeks or months after the baby's oesophagus has been joined up. The baby may be slower to feed or may choke and splutter during the feed. This is not a 'one-off' episode, but happens with each feed. A stricture may become apparent for the first time when the baby is tried with solid food. Advice should be sought from the surgical unit.

Not all swallowing problems are due to strictures. We know that abnormal contractions of the oesophagus (called dysmotility) and difficulties with learning to feed are important causes of feeding problems in some TOF children.

In older children with a stricture, there may be difficulties swallowing lumpy food but it is important to remember that TOF children often have difficulties in this area.

If a child has previously coped well with a certain consistency of solid food and then starts to have problems with swallowing, this suggests a stricture.

DEALING WITH OBSTRUCTIONS

Occasionally, a piece of food may get stuck in your child's oesophagus. This is called a bolus obstruction. It may be vomited back or remain stuck and cause distress.

Once the child has calmed down, see if they are dribbling their saliva. If they are, then there is a complete blockage and you will need to seek expert medical attention.

If the child is not dribbling, try and get them to sip some water since food materials will often dissolve and pass through. If the child cannot tolerate liquids within an hour or two then you will need expert advice.

A food bolus obstruction can happen in an oesophagus with only minor narrowing and typically occurs with unchewed lumps of meat, apple, sausages, etc. However, a food bolus obstruction can also indicate a stricture that needs dilatation.

Diagnosis of stricture

Stricture can be confirmed in two ways:

RADIOGRAPHY

The child is given a drink of a safe liquid which shows up white on a radiograph. The dye (called a contrast material) is watched in motion as it goes down the oesophagus. Using X-rays like this is called fluoroscopy.

A stricture may be seen. Alternatively, there may be minimal narrowing in the oesophagus in which case the feeding

This information has been written for the parents of TOF children by TOFS (Tracheo-Oesophageal Fistula Support) – helping children born unable to swallow.

If you have any feedback on this leaflet, please use our leaflets feedback form which is available from either the TOFS office or our web site.

TOFS relies on money from membership fees, voluntary donations and other sources of charitable income to fund its activities.

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Registered

Charity number

327735

Company number

2202260

Related leaflets from TOFS which you might like to read:

1. Gastro-oesophageal Reflux
2. Feeding the TOF Child
3. Your Child in Hospital
4. TOF and the Primary Care Team (for GPs and clinic staff)
5. TOF: Long Term Follow Up

These are all available from the TOFS web site (www.tofs.org.uk) or from TOFS office.

TOFS also publishes a book, 'The TOF Child,' which is suitable for both parents and medical professional. Details are available from TOFS.

difficulty has another cause such as oesophageal dysmotility.

ENDOSCOPY

This involves looking down the oesophagus with a telescope (called oesophagoscopy), a procedure which requires a short general anaesthetic. It is necessary in cases of persistent food bolus obstruction since the material can be removed using the endoscope.

Grasping forceps can be passed through the endoscope and the material withdrawn with the scope, or the food can be dissolved with squirts of water, or occasionally, the food bolus can be simply pushed on down the oesophagus into the stomach.

Treatment of stricture

A stricture can be successfully treated by stretching it up (called a dilatation). This is nearly always done under anaesthetic but can be carried out in several ways.

Most commonly, the surgeon passes a telescope (called an endoscope) down through the mouth to the level of the stricture. Then a fine plastic rod is passed through the stricture. A series of gradually larger rods are then passed through until the stricture has been sufficiently dilated.

An alternative method is for an X-ray doctor (radiologist) to pass a thin flexible wire (known as a guide-wire) through the stricture whilst checking its position with a radiograph. Once the wire is safely through the stricture and into the stomach, a thin hollow plastic tube is passed over the wire and down into the oesophagus. This tube has a balloon on the end which can be inflated when it lies across the stricture. As the balloon is blown up, the stricture is dilated (called balloon dilatation).

When performed by experts both methods are safe and effective. The child is able to feed within a few hours and is often able to go home the same day or soon after. A chest radiograph may be done to check that there is no sign of a complication.

A very small number of strictures keep coming back despite repeated dilatations. In these circumstances any gastro-oesophageal reflux must be treated since the presence of stomach acid in the oesophagus may be aggravating the situation. Occasionally, further operative surgery may be needed.

Some surgeons try injecting the stricture scar tissue with steroids which have an anti-inflammatory effect. This injection can be carried out with a special needle through the endoscope. The idea is that when the stricture is then dilated it might heal with less scarring and therefore be less tight.

Other options include cutting out the stricture and rejoining the oesophagus or considering a major operation called oesophageal substitution.

COMPLICATIONS OF DILATATION

Complications are rare when the procedure is performed by experienced personnel.

The most worrying one is splitting the oesophagus which causes it to leak (called an oesophageal perforation). This is recognised on the chest radiograph or if the child is unwell after dilatation. Oesophageal perforation can be dangerous and requires prompt treatment with antibiotics, fluids and sometimes a chest drain. This kind of treatment would allow most to heal up. Only rarely would an operation be required for this complication.

OTHER CONSIDERATIONS

Any child born with a cardiac (heart) abnormality ought to receive antibiotics before the dilatation to minimise any chance of an infection settling in the heart.

WHAT IF IT DOESN'T WORK?

Anastomotic strictures usually get better after one or two dilatations but occasionally, several stretches are necessary

If the stricture keeps coming back, it might be because there is a particularly dense scar at the join, it may be because gastro-oesophageal reflux is making the stricture worse, or it may be because there is a congenital stricture. These problems all require separate solutions which may involve surgery.

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