Laryngotracheal Reconstruction

Information for families

Great Ormond Street Hospital for Children NHS Foundation Trust

This leaflet explains laryngotracheal reconstruction, and tells you what to expect when your child comes to Great Ormond Street Hospital for treatment.

What is laryngotracheal reconstruction?

Laryngotracheal reconstruction is an operation to widen the narrowed section of windpipe just below your child's voice box. This narrowing makes it hard for him or her to breathe. The operation should allow your child to breathe without needing to rely on a tracheostomy which bypasses the narrowed section of windpipe. A laryngotracheal reconstruction is carried out in two stages, when a tracheostomy is in situ.

The first stage involves reconstructing the narrowed section of windpipe using grafts of cartilage from your child's ribs. The grafts are held firmly in place with a plastic tube called a stent. About six weeks later, when the grafts are fully healed, your child will need to return to hospital for an operation to remove the stent.

What happens before the reconstruction?

Your child's hospital admission letter gives you information about how to prepare him or her for the first stage of the operation. Before the operation, your child should not have anything to eat or drink for the amount of time specified in the letter. **It is important to follow these instructions - otherwise your child's operation may have to be delayed or even cancelled.**

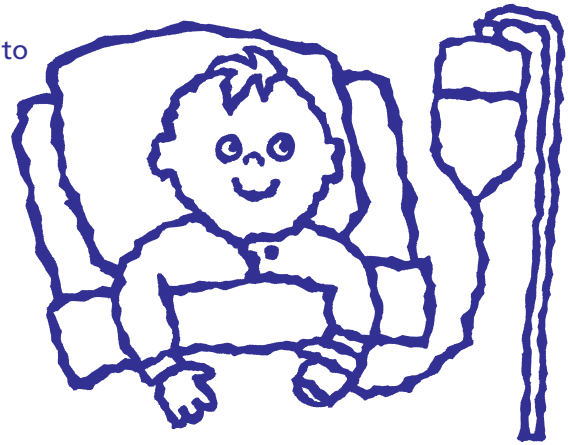
On the day you come into hospital for the operation, your child's surgeon will explain the operation in detail, discuss any worries you may have and ask you to sign a consent form. An anaesthetist will also see you to explain your child's anaesthetic in more detail. If your child has any medical problems, like allergies, please tell the doctors.

What does the operation involve?

Your child will be given a general anaesthetic and will be asleep during the operation. The operation generally takes between one and a half and two and a half hours. The surgeon will carefully remove a small section of cartilage from one of your child's ribs in order to make the grafts that will hold your child's widened airway in place. A section of cartilage is then inserted into the front part of your child's windpipe at the site of the narrowed part to hold it open. The graft is stitched in place. If the narrowing is severe, a second graft will be inserted at the back of the windpipe. To stabilise the graft, a stent made of plastic is rolled into a tube and placed in the airway against the graft. It is secured with stitches. Your child's tracheostomy will remain in place and he or she will still use this to breathe at this stage.

What is single stage laryngotracheal reconstruction?

In some children the narrowing can be corrected and the tracheostomy removed at the same time. The child will breath through a tube placed in the nose for about a week afterwards and will remain on the intensive care unit until this is removed.



What happens after the operation?

After the operation, your child will be transferred back to the ward.

Alternatively, if they have undergone a single stage laryngotracheal reconstruction they will be transferred to the intensive care unit for about a week.

Your child may initially have an intravenous infusion (a drip) to prevent dehydration. This is because for the first three hours, your child will not be allowed to eat or drink. During the operation, local anaesthetic will have been administered in the region of your child's throat to ensure he or she is as comfortable as possible during and immediately after the operation. This needs a short time to wear off before your child will be able to swallow safely.

Your child may have a small drain at the neck wound site to allow excess blood or fluid to escape. This helps prevent a build-up which could result in infection. The drain is usually removed after 24 to 48 hours.

Your child will probably have a cannula (thin plastic tube) in a hand or foot for the first 24 hours. This is so that your child can be given intravenous antibiotics in order to help prevent infection. After the first 24 hours, your child will be able to take antibiotics by mouth (usually in syrup form).

Your child will be given regular pain relief for the first few days after the operation. This can be given as a medicine to drink, as an injection or as a suppository. It is important that your child feels comfortable and pain-free so he or she can start eating and drinking as soon as possible after the three-hour time limit. Children often find the rib site, from where cartilage was removed, hurts for longer than their throat. Local anaesthetic is injected into the rib graft site during the operation to help ease the pain immediately after surgery. Your child will be more comfortable if you avoid lifting him or her under the arms.

Gastro-oesophageal reflux can be a problem. This happens when acidic stomach contents travel back up the oesophagus (gullet). Medicines will be given to help the stomach emptying process, and to reduce stomach acid production to try to prevent this happening. Your child will need to take these medicines until after the stent has been removed.

Are there any risks involved?

Every anaesthetic carries a risk of complications but this is very small. Your child's anaesthetist is an experienced doctor who is trained to deal with any possible problems. After an anaesthetic, children sometimes feel sick and vomit, may have a headache, sore throat or feel dizzy. These effects are usually short-lived. Any surgery carries a small risk of infection or bleeding.

Soon after the operation, some children have difficulty swallowing. This corrects itself in a short time.

What happens when you go home?

Most children stay in hospital for two to three days. Before you leave hospital, you will be advised when each set of stitches (in the neck and in the rib graft wounds) needs to be removed. It may be possible for you to visit your local doctor or practice nurse to have these removed if it is more convenient for you. Please discuss this with your child's doctor.

Over the coming weeks the rib wound, which will be around five centimetres long (depending on the size of your child) will gradually fade. Your child's neck wound will leave a fine horizontal scar, again about five centimetres long, just above the tracheostomy. This too will fade and will eventually blend in with natural body creases.

Stent removal

About six weeks after the reconstruction surgery, your child will need to return to GOS to have the stent removed. This is a short procedure carried out under general anaesthetic. Afterwards, the operation site will be covered with a dry dressing which can be removed after 24 hours. Your child will need to stay in hospital overnight but should be well enough to go home the next day.

Further treatment

Your child will need to come back to hospital for an microlaryngoscopy and bronchoscopy (MLB). This procedure is a test that allows the doctor to look into your child's airway (larynx and bronchi) using a small telescope. This telescope is contained in a flexible rubber tube called an endoscope. For more information, see our separate leaflet, *Microlaryngoscopy and Bronchoscopy.*

The MLB is carried out about one or two weeks after the stent has been removed. It aims to assess how successful the reconstruction surgery has been. If everything appears satisfactory, and the graft has healed well, the next stage is to remove your child's tracheostomy. This is carried out in hospital on a trial basis initially. You will have plenty of time to discuss this fully with your child's doctor.

Many children experience a change in voice quality after laryngotracheal reconstruction. Your child's voice may seem weaker or quieter. This is due to the widening of the vocal cords during the surgery. Speech therapy will help your child to achieve the best possible use of his or her voice.

If you have any questions or concerns,
please contact Peter Pan Ward at Great Ormond Street Hospital on 020 7829 8825.

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