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Laparoscopic Nissen Fundoplication

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What is acid reflux?

Acid reflux is a condition where acid from the stomach travels up into the oesophagus (gullet). It is normal for a small amount of acid to travel into the oesophagus, but if this happens too often it can cause symptoms of a burning sensation in the chest ('heartburn') or acid in the back of the mouth. The acid can cause the lining of the oesophagus to become inflamed (oesophagitis) or scarred.

Your surgeon has recommended an operation to prevent the acid from travelling into the oesophagus. However, it is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you make an informed decision.

If you have any questions that this document does not answer, you should ask your surgeon or any member of the healthcare team.

How does acid reflux happen?

At the join between the stomach and oesophagus there is a weak valve that prevents acid from travelling up into the oesophagus. Sometimes this valve does not work effectively, causing acid reflux (see figure 1).

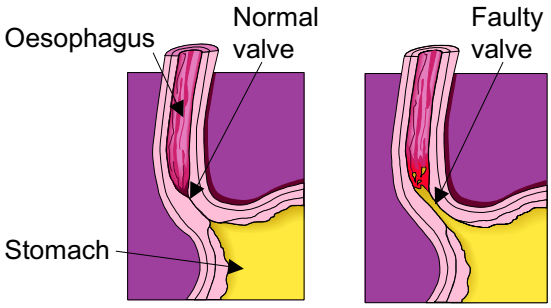

Figure 1

A normal valve and a faulty valve at the junction of the stomach and the oesophagus

Acid reflux is commonly associated with a hiatus hernia. This is where the top of the stomach passes through the hole in the diaphragm (see figure 2).

What are the benefits of surgery?

Surgery is aimed at curing the symptoms of acid reflux.

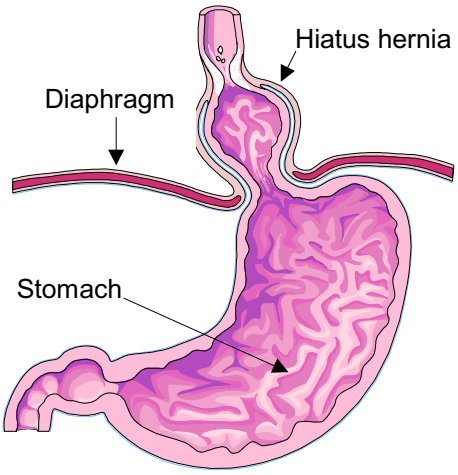

Figure 2

Hiatus hernia

Are there any alternatives to surgery?

Drugs that lower the acid content in the stomach are effective at controlling symptoms and healing the inflammation in the oesophagus. A class of drugs called 'proton pump inhibitors' is currently the most effective and is the main treatment for acid reflux.

Surgery is recommended only if the symptoms continue while you are on the medication, or if you feel that you would rather have an operation than take medication for the rest of your life.

What will happen if I decide not to have the operation?

Surgery is not essential and you can continue on the medication to control your symptoms.

What does the operation involve?

The healthcare team will carry out a number of checks to make sure you have the operation you came in for. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having.

The operation is performed under a general anaesthetic and usually takes between one and two hours. You may also have injections of local anaesthetic to help with the pain after surgery. You may be given antibiotics during the operation to reduce the risk of infection.

Your surgeon will hold your liver out of the way (retracted) and free up the upper stomach and lower oesophagus, along with the muscular part of the diaphragm (crura). They will stitch the diaphragm to reduce the size of the hole the oesophagus passes through.
Your surgeon will then wrap and stitch the top part of the stomach around the lower oesophagus, to produce a valve effect (see figure 3).

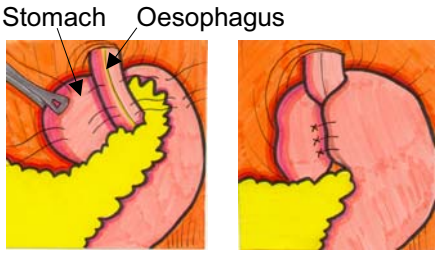

Figure 3
The stomach stitched around the oesophagus to prevent acid travelling up into the oesophagus

• Laparoscopic ('keyhole') surgery

Your surgeon will usually use keyhole surgery as this is associated with less pain, less scarring and a faster return to normal activities.
Your surgeon will make a small cut in or near your umbilicus so they can insert an instrument which inflates the abdominal cavity with gas (carbon dioxide). They will make several small cuts in your abdomen so they can insert tubes (ports) into your abdomen. Your surgeon will place surgical instruments through the ports along with a telescope so they can see inside your abdomen and perform the operation (see figure 4).
In about 1 in 10 people it will not be possible to complete the operation using this technique. If this happens, the operation will be changed (converted) to an open procedure.

• Open surgery

The operation is the same but it is performed through a single, larger cut in the upper abdomen.

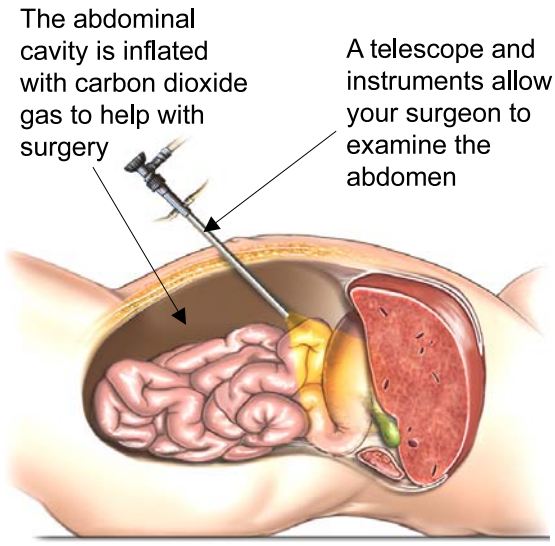

Figure 4

The technique for laparoscopic surgery

What should I do about my medication?

You should make sure your surgeon knows the medication you are on and follow their advice.
You may need to stop taking warfarin or clopidogrel before your operation.
If you are a diabetic, it is important that your diabetes is controlled around the time of your operation. Follow your surgeon's advice about when to take your medication.
If you are on beta-blockers to control your blood pressure, you should continue to take your medication as normal.

What can I do to help make the operation a success?

If you smoke, stopping smoking several weeks or more before an operation may reduce your chances of getting complications and will improve your long-term health.
Try to maintain a healthy weight. You have a higher chance of developing complications if you are overweight.
Regular exercise should help prepare you for the operation, help with your recovery and improve your long-term health. Before you start exercising, ask a member of the healthcare team or your GP for advice.

What complications can happen?

The healthcare team will try to make your operation as safe as possible. However, complications can happen. Some of these can be serious and can even cause death. You should ask your doctor if there is anything you do not understand. Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

1 Complications of anaesthesia

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

2 General complications of any operation

- **Pain**, which happens with every operation. The healthcare team will try to reduce your pain. They will give you medication to control the pain and it is important that you take it as you are told so you can move about and cough freely. After a laparoscopy, it is common to have some pain in your shoulders because a small amount of gas may be left under the diaphragm. Your body will usually absorb the gas naturally over the next 24 hours, which will ease the symptoms.
- **Bleeding** during or after surgery. You may need a blood transfusion or another operation.
- **Unsightly scarring** of the skin, particularly if the wound becomes infected.
- **Developing a hernia** in the scar, if you have open surgery, caused by the deep muscle layers failing to heal. This appears as a bulge or rupture called an incisional hernia. If this causes problems, you may need a further operation.
- **Infection of the surgical site** (wound). To reduce the risk of infection it is important to keep warm around the time of your operation. Let a member of the healthcare team know if you feel cold. In the week before your operation, you should not shave the area where a cut is likely to be made. Try to have a bath or shower either the day before or on the day of your operation. After your operation, you should let your surgeon know if you get a temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics but you may occasionally need another operation.
- **Blood clots** in the legs (deep-vein thrombosis), which can occasionally move through the bloodstream to the lungs (pulmonary embolus), making it difficult for you to breathe. The healthcare team will assess your risk. Nurses will encourage you to get out of bed soon after surgery and may give you injections, medication or special stockings to wear.

3 Specific complications of this operation

a Laparoscopic complications

- **Damage to internal organs** when placing instruments into the abdomen (risk: 1 in 1,000). The risk is higher in people who have previously had surgery to the abdomen. If an injury does happen, you may need open surgery, which involves a much bigger cut. About 1 in 3 of these injuries is not obvious until after surgery, so if you have pain which does not continue to improve each day after surgery, you should let your doctor know.
- **Developing a hernia near one of the cuts used to insert the ports** (risk: 2 in 10,000). Your surgeon will try to reduce this risk by using small ports (less than a centimetre in diameter) where possible or, if they need to use larger ports, using deeper stitching techniques to close the cuts.
- **Surgical emphysema** (crackling sensation in the skin due to trapped gas), which settles quickly and is not serious.

b Nissen fundoplication complications

- **Difficulty swallowing for the first few months** because the site where the stomach is wrapped around the oesophagus is inflamed. This is common and you should be able to swallow most foods normally by three months after the operation.
- **Air in the chest cavity** (pneumothorax), which occasionally needs a tube to be placed into the chest (chest drain).
- **Making a hole in the oesophagus or stomach**, which needs repair. This is a rare but serious complication.
- **Tear of the stitches used for the wrap** if you retch (strain to be sick) or vomit in the first few weeks after the operation. This may cause the wrap to become loose. Occasionally a tear can make a hole in the stomach and you will need surgery straightaway to repair the hole.
- **Damage to the liver** when holding it out of the way (risk: 5 in 100). If the damage is serious, you may need further surgery.

Long-term problems

- **Continued difficulty swallowing** where you cannot swallow most foods normally (risk: 5 in 100). If you find that food such as bread and meat get stuck, you should avoid them.
- **Incomplete control of reflux symptoms** if the wrap is not tight enough or becomes loose (risk: less than 5 in 100).
- **Weight loss** during the first two months after the operation. It is normal to feel fuller than usual and you may only be able to eat small meals. Sit upright when you eat and take a drink with your meal to help the food go down. You should eat more often than before to try to keep your weight up. If you do lose weight, you will usually put it back on.
- **Abdominal discomfort** (risk: 3 to 5 in 10). You will probably not be able to burp as usual, which can cause gas to build up in your abdomen. You may pass more wind than usual.
- **Diarrhoea** (risk: less than 3 in 100). If loose or more frequent stools are troublesome, your doctor may prescribe some medication to slow down your bowel.

If any of these problems are severe and continue for over three months, you may need another operation (risk: less than 5 in 100). If you have these symptoms for over three months, let your surgeon know.

How soon will I recover?

• In hospital

After the operation you will be transferred to the recovery area and then to the ward. You should be able to go home the next day. However, your doctor may recommend that you stay a little longer, particularly if your operation was converted to an open procedure.

You will be given anti-sickness medication. You will be given fluids by mouth from the first day after your operation and then a soft diet. You should no longer need to take your acid-reducing medication.

If you are worried about anything, in hospital or at home, contact a member of the healthcare team. They should be able to reassure you or identify and treat any complications.

• Returning to normal activities

You will need to eat slowly and chew your food thoroughly. Eat soft foods for the first few weeks and gradually build up to a normal diet when you can cope with it.

You should be able to return to work after three to four weeks but this may vary depending on the extent of surgery and your type of work.

Your doctor may tell you not to do any manual work at first and you should avoid heavy lifting for a few weeks.

Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, you should ask a member of the healthcare team or your GP for advice.

Do not drive until you are confident about controlling your vehicle and always check with your doctor and insurance company first.

• The future

You should make a full recovery, with the symptoms of acid reflux gone or much improved.

Summary

Acid reflux can cause heartburn or acid in the mouth. The acid can cause the lining of the oesophagus to become inflamed or scarred. Surgery may be recommended if your symptoms continue while you are on medication.

Surgery is usually safe and effective. However, complications can happen. You need to know about them to help you make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

Acknowledgements

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