

Anaesthesia for Thoracic (Lung & Chest Wall) Surgery

This leaflet will explain more about your anaesthetic pathway: before, during and after your thoracic surgery. At St George's Hospital (SGH) there are 900-1,000 heart operations performed each year and the anaesthetist will play a significant role during your patient journey.

When do I meet the anaesthetist?

Most of the patients who are having planned thoracic surgery are admitted to hospital the day before the operation. The anaesthetist will see you either on the day of admission or the morning before the operation. Your anaesthetist will come and find you on the ward, usually Caroline ward (CW) in the Atkinson Morley Wing (AMW) of SGH.

Where do I need to go?

On the day of your admission you will go to Caroline ward on the third floor of Atkinson Morley Wing at the time stated in the accompanying letter. This is not the time of your procedure, but allows extra time for you to be seen by your surgeon, anaesthetist and other members of the team.

Who is the Anaesthetist?

Anaesthetists are doctors who form the largest hospital medical specialty and their skills are used in many aspects of the patient journey during an admission. Your anaesthetist will be specialised in cardiothoracic anaesthesia and in addition may also be specialised in intensive care medicine. They spend the majority of their time anaesthetising patients undergoing cardiac and thoracic surgery and looking after these patients in the cardiothoracic intensive care unit (CTICU). Thoracic anaesthetists are trained to monitor and manage the changes that occur to your lungs during your operation. They are also trained to handle both intraoperative and postoperative pain and they will discuss the several possible strategies with you.

Whilst there will be a consultant anaesthetist allocated to your list, an anaesthetic registrar may also be involved in your care during your hospital stay.

Preoperatively, your anaesthetist will perform a preoperative anaesthetic assessment when they meet with you (see below).

Intraoperatively, your anaesthetist will induce anaesthesia in the anaesthetic room and maintain anaesthesia during surgery in the operating room (see below).

Postoperatively, anaesthetists will be responsible for your postoperative pain relief (see below).

What is General Anaesthesia?

General anaesthesia (GA) is a triad of unconsciousness, analgesia and amnesia. During your operation you won't be aware of what is going on around you (unconscious), you won't feel any sensation or pain due to the operation (analgesia) and you won't be able to recollect any memories of the operation (amnesia).

Before coming to hospital

- If you smoke you should give up for at least four weeks before surgery and certainly not smoke on the day of an operation. It will reduce the risk of perioperative complications. The longer you can give up the better it is.
- If you have loose teeth or crowns see your dentist in order to reduce the risk of dental damage during anaesthesia.
- If you feel unwell, e.g. have a temperature or cough and cold, please telephone us before you come in to get some advice.
- You should have clear instructions with regard to what food and drink you can have. In general you can eat food up to six hours before having a GA and drink clear fluids until two hours before.
- You should have clear instructions from your surgical team about what medications you should omit prior to surgery, particularly medicines that affect your coagulation and some blood pressure medications.

Anaesthetic assessment

When your anaesthetist has reviewed your surgical preoperative assessment, s/he will discuss all aspects of your GA and the risks of anaesthesia with you. You will be asked about your general health and past medical history. In particular you will be asked about:

- medical issues such as diabetes, blood pressure and respiratory problems.
- regular medications.
- previous GAs and operations.
- dental, neck and airway issues including an examination of the airway.
- post-operative pain relief.

The preoperative anaesthetic assessment is an opportunity for you to ask any questions that you may have about your anaesthetic.

In the anaesthetic room

On the day of your operation a nurse will walk with you to the anaesthetic room where members of the anaesthetic team will be present. The ward nurse will formally hand over your care to the team in the anaesthetic room.

The team consists of your consultant anaesthetist, an Operation Department Practitioner (ODP) and sometimes there is also an anaesthetic registrar. The formal handover will include confirming your identity and the site and type of surgery to which you have consented.

The team will monitor your heart rate with an ECG, blood pressure (BP) with a cuff around your arm and oxygen saturations. Prior to the administration of the GA, your anaesthetist will insert a cannula into a vein in the back of your hand or arm. This cannula will be used to administer fluids and anaesthetic medications. If you are having a spinal injection (see section below about pain relief), this will be done before your anaesthetic starts.

When your cannula has been inserted you will be given oxygen via a face mask and an

anaesthetic drug will be given intravenously.

When you are anaesthetised, a breathing tube will be placed in your trachea. You will not be aware of this as you will be under GA.

During surgery

The anaesthetist will maintain your GA by giving you anaesthetic medications throughout the operation. This will ensure that you are unconscious throughout the operation.

As well as maintaining your GA, the anaesthetist will monitor your vital parameters (breathing, heart activity, temperature, total body blood supply, blood biochemistry).

If you require any blood or blood products during your surgery, these will be administered by your anaesthetist.

If there are no complications, the anaesthetist will start to wake you at the end of the operation in the operating theatre. The breathing tube will be taken out before you are fully conscious. This is not distressing for most patients.

Selected patients need to go to the Intensive Care Unit (ICU) because the risk of postoperative complications is higher than average. This is due to various preoperative medical problems therefore it will be discussed with you during the anaesthetic assessment before surgery.

After surgery

The anaesthetic team will transfer you to a recovery area where a dedicated nurse will take care of you until you are fully conscious and your pain is well controlled.

The recovery nurse will give you pain killers and antiemetic (anti sickness) medications if needed to make you as comfortable as possible.

In case of intraoperative complications or in high risk patients (see above) you will be transferred to ICU instead of recovery.

Once you are fully alert, warm, comfortable and stable you will be transferred back to Caroline ward.

Postoperative Analgesia (pain treatment)

The pain management is specific and tailored for each patient and depends on the type of surgery and your personal preferences. It will be discussed and agreed with your anaesthetist before surgery.

It is very important to breath normally as soon as possible after the operation because shallow breathing can increase the risk of pulmonary complications. Pain might prevent you from breathing sufficiently deeply therefore treating postoperative pain is fundamental after your thoracic operation.

The anaesthetist will discuss the possible options with you before the operation.

Pain relief options:

1. PCA (patient controlled analgesia) ± intravenous painkillers:

When you are fully conscious you will be given a button to press when you are in pain. In so doing you will receive a dose of painkiller through your venous cannula. It means you are in control of your pain relief and you can press it anytime you need: it is designed to

stop on its own once a certain limit is reached, so that you do not risk overdose.

2. Spinal injection:

This involves placing a thin needle into the fluid around your spinal cord and injecting some strong painkillers there. The spinal injection will be thoroughly discussed with you during your preoperative anaesthetic assessment.

It is usually done in the anaesthetic room before the induction of general anaesthesia, when you are still conscious.

Your anaesthetist will inject some local anaesthetic into your back before inserting the spinal needle and will help you get into the correct position for the spinal.

This injection of painkiller around your spinal cord will help to control your pain and it will make you feel more comfortable for several hours after the operation.

It might not be possible to insert the needle into the correct space and if this is the case the procedure will be abandoned.

3. Paravertebral block (PVB):

This involves injecting local anaesthetic around the nerves on the side of your back which transmit pain sensation from the area where the surgeon is working. The local anaesthetic stops the pain signals. It is generally done under general anaesthesia by the surgeon during your operation. It will last for several hours after surgery.

A plastic tube (catheter) may be left in place so that the local anaesthetic can be continually injected as needed.

Risks and complications of general anaesthesia

These will be discussed at your anaesthetic pre-operative assessment.

1. Postoperative nausea (sickness) and vomiting (PONV).

Following general anaesthesia it is possible to have postoperative nausea and vomit (PONV) and therefore you will be given regular anti-sickness medications postoperatively. This is a common complication and can last from a few hours to several days.

2. Aspiration.

Before the operation you will be “nil by mouth” (NBM) meaning that you will be given specific fasting instructions by the anaesthetist and the nurse staff on the ward. The reason why you need to be NBM is because of life threatening complications due to the accidental passage of the gastric content into the lungs (aspiration) which could lead to a severe inflammatory reaction of your lungs leading to acute respiratory failure (aspiration pneumonitis). This is a very rare complication of elective planned surgery.

3. Dental damage, oral soft tissue injury, sore throat.

During the insertion of the breathing tube into your mouth your teeth, lips or tongue can be damaged. In the vast majority of thoracic cases a double lumen tube (DLT) will be needed. The DLT is a special airway tube which allows the surgeon to perform the operation in optimal condition.

A possible but rare complication of the insertion of the DLT is tracheobronchial tree (airway) lesion.

Once the operation is finished and the tube is out you might have a sore throat or hoarse voice. This is a common occurrence following a GA.

4. Dizziness and feeling faint.

Your anaesthetic may lower your BP and you might feel dizzy. This may also be caused by dehydration (when you have not been able to drink enough fluids). If needed, fluids or drugs will be given into your cannula to treat this.

5. Shivering

You might shiver after your operation because of the effect of the anaesthetic. Generally a hot air blanket is used to warm you.

6. Confusion or memory loss.

This might occur among elderly patients after GA and due to various causes. It is generally temporary.

7. Allergic reactions.

Minor or severe allergic reactions can occur during the administration of any medication with potential life threatening consequences. This is a very rare complication.

8. Awareness.

Accidental awareness during general anaesthesia occurs rarely but is often something patients worry about pre-operatively. It is very rare (1 in 19,000).

9. Bleeding, Transfusion.

Nowadays blood transfusions are very safe as they are screened for viral infections such as hepatitis and HIV. There is also a very small risk of blood reactions due to incompatibility with your blood which can lead to cardiovascular collapse or organ dysfunction. These complications are very rare.

10. Death.

Deaths caused by anaesthesia are extremely rare. There are probably about five deaths for every million anaesthetics given in the UK.

11. Side effects and complications of spinal analgesia

- **Low blood pressure:** the spinal injection can lower your blood pressure with resulting sickness or dizziness. This will be promptly managed by your anaesthetist who will give you fluids intravenously or drugs to support your blood pressure;
- **Itching:** this might be a side effect of using morphine. The anaesthetist will give you medications to relieve it.
- **Headache (postdural puncture headache PDPH):** this can occur after a spinal injection (1 in 200-300) and generally happens 24-48 hours after the injection. If you are in hospital you need to contact a doctor, if you are at home you should notify your GP or attend A&E. The treatment is variable: it includes taking oral pain killers and drinking fluids. In case of severe headache or if your symptoms do not improve you will be seen again by the anaesthetist who may recommend an epidural blood patch.
- **Nerve damage:** this is a rare (1 in 10,000) complication. In order to minimize the risk

please inform your anaesthetist if you experience any sharp or radiating pain during the placement of the spinal needle.

In addition to the risks described above, you will be informed about the risks and complications of surgery by the surgeon before the operation. Some of these complications may become evident during your admission to the CTICU where any organ dysfunction will be treated.

Contact us

If you have any questions or concerns about your admission, you can contact us using the details on the accompanying letter.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.stgeorges.nhs.uk

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9.30am and 4.30pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough Wing (near the lift foyer).

Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS Choices

NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.

Web: www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.

Tel: 111



Reference: CAS_ATS_01 **Published:** March 2019 **Review date:** March 2021