

Episode 21 – Your Lung Surgery

(Intro) Rosie: Do you have an upcoming surgery? Are you feeling a little overwhelmed? Then this is the podcast for you. Welcome to Operation Preparation. You are listening to Pre-Anaesthetic Assessment Clinic podcast or PAAC for short from St. James's Hospital, Dublin. Here we put together a series of short episodes to help you, your family and your loved ones learn more about your upcoming perioperative experience.

Hi everyone, and welcome back again to 'Operation Preparation', our 21st episode. And today we'll be talking about your lung surgery. My name is Roseann and I'm one of the Clinical Nurse Specialists in the pre-anaesthetic assessment clinic. We have some very special guests joining us here today. Consultant to Cardiothoracic Surgeon, Ms Rebecca Weedle, Consultant to Cardiothoracic Anaesthesiologist, doctor Lauren O'Callaghan and Cardiothoracic Advanced Nurse Practitioner, Stephie Keating, who are going to talk us through everything that a patient needs to know about going for lung surgery. So Stephie, we might start with you. We've mentioned the word there thoracic a few times, but what does that mean in terms of surgery?

Stephie: Thanks so much for having us today, Rosie. It means surgery, I suppose, on your thoracic or your chest cavity. It can include one of your airway pipes, such as your bronchus, your lungs or your ribcage or your diaphragm. Also including the lining between your ribcage or your lungs called your pleura or your thoracic lymph nodes.

Rosie: And so what common types of thoracic surgery are usually performed?

Stephie: So I suppose the most common types of surgery are performed on your lungs. Some of the surgeries might include lobectomies, wedge resections or segmentectomies. We have two lungs, we have our right and our left lung. Our right side is divided into three sections, an upper, middle and lower. And our left side is divided into two sections, our upper and lower lobes. If one of these sections or lobes was to be removed, this is known as a lobectomy. Or if part of this section or lobe was to be removed, this would be called a wedge resection or segmentectomy. And if they were to take out one side of the lung, that would be called a pneumonectomy.

Rosie: Okay, that makes a lot of sense. But why would you have to get part of your lung removed? Rebecca, would you be able to tell us a little bit about that?

Rebecca: Sure. The specific reason you need surgery to remove part of your lung will be discussed in detail with you in the clinic. Most commonly, we do these operations for lung cancer, or another cancer that has spread to the lungs, to remove the cancerous lesion and take a selection of the surrounding lymph nodes from your lungs and the middle of your chest. Where the tumour is located will influence the proposed surgery. And this will be discussed with you in detail at your clinic appointment. Different approaches to the operation can be taken depending on, for example, where your tumour is located, the size of the tumour, or whether your cancer involves any nearby structures like your ribs or big blood vessels. This can be keyhole surgery approach, such as VATS or robotic-assisted surgery, or an open surgery approach with a bigger incision. All of the approaches involve

going in between the ribs to access the inside of your chest. Again, the plan for your exact surgery will be discussed with you on an individual basis.

Rosie: Yeah, okay, that's really clear. And so imagine I have this diagnosis now, what kind of tests will I need before having surgery? And can you tell us a little bit about them?

Rebecca: So usually before you see us in the thoracic surgery clinic, you'll have had tests to diagnose your cancer and determine the stage of your cancer. This helps us to make sure surgery is an appropriate treatment for you. You'll have a CT scan of your chest, which looks in detail at the chest, a PET CT, which is a specialised scan that allows us to see the uptake of a tracer in active tissues. Some active areas can be normal on the PET CT, but others can be abnormal and give us an idea about the stage of your cancer. A CT scan of your brain might also be needed for some people depending on your other test results. Most people will need a biopsy or a tissue sample to confirm that what we're seeing on the scans is a cancer. This might be done through the outside of your chest with guidance from a scan like a CT scan or ultrasound or through your airways by bronchoscopy. And similarly, you might need biopsies or tissue samples from your lymph nodes to see if they're involved. The results of these tests are usually explained to you by your Respiratory Physician in clinic. And if surgery is a possible treatment option for you, you'll be offered an appointment to see a Thoracic Surgeon in clinic.

Rosie: Great. And what other kind of investigations then will patients need?

Rebecca: You'll also need tests to assess your fitness for surgery and help us talk to you about how you might feel after you recover. These include breathing tests called pulmonary function tests, which look at how well your lungs work. You might need extra tests to assess your fitness for surgery such as an echo, which is an ultrasound of your heart, or a CPET, which is a more detailed exercise test. Everybody will have an ECG, which is a tracing of your heart rhythm, a chest x-ray, and a panel of blood tests to look for other problems. You'll also be referred to prehab physio where the physiotherapist will do a six minute walk test with you to further check your fitness. You'll be offered online or in-person exercise classes after assessment to see what is suitable for you. Episode 15 of the podcast is a great episode on the importance of prehabilitation and exercise before your surgery. So do have a listen to that one too. So once you meet your surgeon and decide that surgery is the best treatment plan for you, you'll be referred to our cardiothoracic pre-admission clinic.

Rosie: Okay, that's great. And we've had an entire episode dedicated to explaining what pre-assessment is and why it exists and how they benefit patients, but it's also important for our listeners to know that not every pre-assessment clinic runs exactly the same way and the preparation for thoracic surgeries, like you've mentioned, can all be a little bit different. So Stephanie, can you tell us a little bit about the cardiothoracic pre-assessment clinic and how they prepare patients for their lung surgeries?

Stephie: Yeah, so the aim of the pre-assessment clinic is to provide an individual risk assessment while also giving us an opportunity to get the patient ready for surgery. It provides a chance for the patients to undergo outstanding tests that needed to be completed prior to surgery, such as bloods or ECG or chest x-ray. And then depending on

their medical history or their fitness, you might require some further assessments, which Rebecca has already spoken about. It also gives us a chance to educate the patient on their upcoming surgery, identifying areas for health promotion or optimization and where possible, correct these prior to admission. So we're looking at specific areas on how we can prepare the patient for the surgery. One big thing would be to stop smoking. I know there's a separate episode on smoking sensation, episode 13, so we would advise patients to listen to this. Stopping even two weeks before helps people recover much better after the surgery and reduces their chance of getting a chest infection. Looking at their physical activity and seeing if they have the ability to increase. Even getting out for a small walk, we would try and encourage frequent small walks to increase their activity, while also looking at their alcohol intake, healthy eating and managing their medications. Basically trying to improve their health prior to the surgery to help improve their surgical outcomes. All of these have been covered in episode 6 and on the hospital's website, Step for a Stronger Start, which is a one-stop shop for patients who want to improve their health before surgery. We've included the link to this in the show notes. This gives the patient a chance to ask questions about their surgery, while also providing an opportunity for the ANP to ensure that they understand the procedure that they're going to have. The patient will receive education on their specific surgery on an individual basis and will also receive education on advice of day of surgery of admission, if that's suitable for them, which is also known as DOSA, along with written instructions for skin care prior to their admission. The patient will receive an antiseptic solution to shower in the evening before surgery that really helps reduce infection risk.

Rosie: That's brilliant and you know we've covered medications before in episode 8, but can you remind our patients again because we can never have enough reminders.

Stephie: So it's important to know the medications you're taking. It's a good idea to bring a list of medications to any medical appointment, particularly if you're taking any blood thinners or diabetic medications, as you might be required to stop taking these before tests or investigations or your surgery. Pre-op assessment appointment gives us an opportunity to go through the medications that you are taking. You'll be given written instructions about which medications not to take before the surgery and which ones you can take the day of the surgery, so it's very important to follow this advice.

Rosie: That's great tips and advice there and what do you think people need to know beforehand?

Stephie: So I suppose before the surgery the patient will be contacted by the hospital and informed of their surgery date. One thing would be to what to pack and so to bring clothes that is light and non-restrictive, such as pyjamas, that button up the front is quite useful and for particularly females to reassure them that they can wear a bra, just not a non-wired bra, so just a nice soft bra. We encourage our patients to get up and dressed every day, so to bring nice loose clothing, comfortable clothing for the daytime and pyjamas for night. To bring a small bag with toiletries and to reassure that we have towels here in the hospital. To bring suitable footwear, supportive ones that enables them to participate in their physio appointment, such as runners or slippers with a good back on them. To leave any valuables at home and just bring in the important valuables, such as your phone and just to reassure

patients that their phones can be sent away to security during the operation and then they can receive it back after. Remembering to bring an extra-long charger and books or magazines or tablet for something to watch for entertainment. I suppose always thinking about planning for home also, if you live alone think about what kind of supports you need in place after. I suppose someone to do the shopping or someone to do the cooking and patients I suppose can be either admitted the night before or the morning of the surgery, depending on the hospital's bed availability. If they are admitted the day of surgery, the fasting instructions will be explained to them beforehand in the pre-assessment clinic or it'll be sent out to them by post and just to reassure non-English speaking patients that interpreter will be arranged and will be going to theatre with them.

Rosie: Thanks for that, Stephe. And now to our Consultant Cardiothoracic Anaesthesiologist, doctor Lauren.

Lauren: Thanks so much for having me, Rosie. I think good preparation is so important, particularly for lung surgery. So hopefully I'll be able to give some good insights.

Rosie: Of course. So can you outline for us what should people expect then on the day of their surgery?

Lauren: Of course. So as Stephe mentioned, a lot of patients will be admitted to hospital either on the same day or the night before their surgery. Sometimes patients will already be in the hospital. So when you are admitted to the hospital, you'll be checked in on the ward and you'll meet members of the nursing and surgical team. You might need to have some of your tests repeated if it's been a while since they've been done, such as blood tests or chest x-rays. And before you go down to theatre, you'll be changed into a gown and you might have a drip or a cannula inserted into your arm or hand.

Rosie: And so what does anaesthesia for lung surgery involve or how is it different to other anaesthesia?

Lauren: So the initial preparation is quite similar to any anaesthetic. When we bring you into theatre, we'll attach you to our routine monitors and talk you through everything as we go along. As I said, you'll have a drip inserted in your hand. We use that to give the anaesthetic medicine. And sometimes for lung surgery, people will get a second drip in their wrist, which allows us to monitor their blood pressure really closely. When we give the anaesthetic medicine through the drip, people fall asleep quickly and peacefully, and it's our job to keep you deeply asleep and comfortable while the surgery is happening. Then more specific to lung surgery, depending on the surgery itself that you're having, you might have an epidural inserted before you go to sleep. And that's to help with pain after the operation. And your anaesthesiologist will discuss this with you on the day. For lung surgery itself, we use special breathing tubes, which allow the surgeon to work safely on your lung. After you go to sleep, you might get some additional drips inserted in your neck called a central line or a tube in your bladder. These are all there to keep you safe during and after your surgery. And then afterwards, a team of people, including surgeons, nurses and health care assistants, will all work as a team to get you into the correct position for your operation.

Rosie: So you mentioned an epidural there for pain control. Pain control is something we often hear patients worry about. Can you help alleviate any kind of fears here?

Lauren: Yeah, absolutely. And good pain control is key to recovery after surgery, but in particular lung surgery. So our goal is to ensure that you're comfortable enough to be able to take a deep breath, to cough and to mobilise. All of this helps reduce complications after lung surgery. We have a broad variety of things that we can do to help control pain after lung surgery. And we usually combine multiple methods together to give the best pain relief for our patients.

Rosie: Okay, so what might some of these techniques be?

Lauren: So first off, we'll always prescribe regular tablet or IV medications such as paracetamol and anti-inflammatories. From there, then it depends on your specific surgery, whether it's open or keyhole or robotic, and your anaesthesiologist will discuss this with you on the day. Some of our options include an epidural. This is a small tube in your back that delivers pain control continuously, and it helps numb the whole chest area. These are generally used for open lung surgery. We also use pain catheters. These are small tubes which are placed near the nerves in the chest wall, which numb the surgical site. A third option is patient-controlled analgesia. This is commonly called a PCA. This is a pump that allows you yourself to give small doses of a strong painkiller when you need it by pressing a button. A PCA is generally combined with either an epidural or a pain catheter. As I said already, you'll be getting regular tablet painkillers as a baseline of pain relief. Once your chest drain is out and you're eating and drinking normally, we aim to then stop the PCA and change you back to tablet medicine. It's important to say here as well that there's always something that we can do to help with pain. So if you are sore, make sure you tell your nurse or your medical team. The Pain Team will come and see you after your surgery as well. So have a listen to episode 22 about our pain team and also episode 11 to learn about pain and your recovery.

Rosie: So that all sounds really, really reassuring. And can you explain why it's so important to be able to cough and to take a deep breath afterwards?

Lauren: Yeah, so that's a really good question. And it's one of the single most important things to help your recovery. The physiotherapists will work with you on the ward after surgery to learn deep breathing exercises and coughing techniques. Chest physiotherapy helps to do several really important things after lung surgery. It helps to re-expand your lung. It helps to clear mucus and phlegm. All of this helps prevent chest infections after your surgery and also improve your oxygen levels. In addition to teaching you coughing and breathing exercises, our physiotherapists will also help you get back on your feet in the days after your operation. Again, this helps improve your breathing and also reduces your risk of blood clots and helps you get your strength back.

Rosie: And so where do patients go then after their surgery? Is it just back to a regular ward?

Lauren: No, so patients will generally go to a ward with nurses who specialise in caring for patients after lung surgery. Sometimes people will go to a high dependency area after, particularly if they're having major or open lung surgery or if they have complicated medical problems in the background. High dependency allows closer monitoring after your surgery with increased nursing support. There we can give additional oxygen and breathing support as well as special medicines to help support your blood pressure if required. This is all quite normal after major lung surgery and most patients only stay there for a short time.

Rosie: So do people wake up then with lots of monitors and tubes after lung surgery?

Lauren: So after your lung surgery you'll have heart and oxygen monitors in the recovery area and then initially back on the ward or in high dependency. You'll also have some drips in your hand and you might have some in your neck. You'll be getting oxygen either through tubes in your nose or a face mask and you may also have a tube in your bladder. And then we've already discussed some of the special drips for pain management. You will have a tube in your chest to help remove air and fluid from around your lung. And these tubes and monitors might sound scary but they're all there to help keep you safe and as you recover in the coming days after your surgery these will gradually be removed when they're no longer needed. As mentioned before episode 10 is a really good one to have a listen to because it explains all these lines and also has a video to show you what they look like.

Rosie: Thanks so much for all of that Lauren. And back to you now Rebecca. So Rebecca the surgery's finished what happens next?

Rebecca: Yeah thanks. So as Lauren said most patients will spend a bit of time in the recovery area of the operating theatre and then they're taken back to the high dependency unit or the ward depending on what type of operation they've had and their underlying medical problems. In the high dependency unit each nurse looks after fewer patients and you have more frequent monitoring or checks if needed especially on the day of your surgery itself. You'll have a plastic tube connected to a collection system called a chest drain after the lung surgery, as Lauren said, and your nurse will help you manage this as well when you get out of bed. So you'll have a few other lines and monitors as well which Lauren has gone through. So you'll be sitting out in the chair the evening after your surgery or first thing the next morning and you'll have multiple checks to make sure it's safe for you to get out of bed and the nurses and physios and everyone there to help you do that. It's really, really important to sit out early after surgery especially lung surgery and to engage with the physiotherapy plan so that you can take deep breaths and cough to keep the chest clear and prevent chest infections as Lauren said and because if you stay in bed too much after the surgery you start losing muscle quite quickly.

Rosie: That's very reassuring and it does sound like everything's down to a fine art. So how are the lines managed after my surgery Stephie?

Stephie: So Lauren and Rebecca have covered majority of the drips and lines that'll be attached to after your surgery but one that the patients find most uncomfortable is the chest drain. Like it has been mentioned already the chest drain goes in around the area where the operation was and drains out any air or fluid or blood. This will come out when

there's a small amount of drainage or when the lung is not leaking any air and that will be assessed daily by the surgical team when they come around to assess the patient. Most people will also have a special line on their wrist which has already been mentioned by Lauren for monitoring their blood pressure called an arterial line and that'll usually be taken out quite soon after surgery. Some patients may also have a central line in their neck which will also be removed when it's no longer needed. Everyone will have an IV cannula or a drip in their arm which will give fluids and will also be connected to their patient controlled analgesia button, their PCA, which Lauren has already spoken about. So the nurse and the bedside and the physio will be there to assist with all these lines and tubes and as we've all mentioned will be removed as soon as they're no longer required. Episode 10 goes through the more details and it also has some visual aids so we will encourage you to listen to that.

Rosie: Thanks for that Stephie and so Rebecca how long can a patient expect to be in hospital for?

Rebecca: So this will vary a huge amount from patient to patient and also depends on the operation that they're having done. The quickest time is usually about two days but the average time is closer to five to seven days but it can sometimes be longer for some patients. This is guided by the patient themselves how they're recovering and how their lungs are recovering. The chest drain output gives us an idea about how the lung is healing in general once your chest strain is out your pain is controlled on the tablet medication and the physiotherapist is happy that you're safe to walk around and climb the stairs we'll get you home.

Rosie: And what about potential complications with these surgeries then?

Rebecca: So any operation on the chest is a big deal and we'll talk to you about what you can expect when everything is going right during and after your surgery but we'll also let you know what can potentially go wrong and what we can do to help fix those complications if they do occur. So we'll discuss the potential complications with you in the clinic and again before your operation. So complications can happen that might keep you in the hospital a bit longer and need extra medicines like an irregular heart rhythm, chest infection, wound infections, fluid leaking from the lymph gland channels called a chyle leak or a prolonged air leak from your lung. The nerve that controls the voice box is near some of the lymph glands that we take out during surgery. So an uncommon complication is that the nerve itself goes to sleep and if that happens you'll notice your voice is hoarse. If it does happen it usually recovers with time or if needed a small procedure can be done to strengthen the voice. Anytime you have surgery and especially anytime you have surgery for cancer you're at increased risk of clots in the legs and the lungs or heart attacks and strokes so we give you blood thinning injections and special compression socks while you're in hospital to help reduce that risk.

Rosie: And what about any serious complications that people need to be aware of?

Rebecca: Yeah so the more significant complications we worry about are things like bleeding where you might need a blood transfusion or we might need to change approach from keyhole surgery to open surgery and of course anytime you have surgery there's a risk to

your life of not surviving the operation in the same hospital. For most of our patients this risk is somewhere between one and three percent but your individual risk will be discussed with you and how we reduce that risk as much as we can. It's really important to remember that most people get through these operations very well. We do a lot of these surgeries here in St James's so we're very experienced in preventing these problems as much as possible and getting people home safely.

Rosie: Great that's all really reassuring and Stephie back to you then. Will my family be allowed to visit me?

Stephie: Yeah families are more than welcome to visit and we encourage families to come in to visit the patients but just to highlight there is no visiting on the day of surgery and I suppose it is limited to two visitors per patient and within the visiting hours. The best way to stay in touch would be to call the ward and get an update from the nurses looking after your loved one on the day of the surgery and most patients would have their phones with them so even to contact the patient themselves for an update. If there is any unexpected changes just to flag we will notify the next of kin.

Rosie: Perfect and just to build from that if anyone's unsure just to check with their hospital about the local visiting policy and times and Rebecca can you tell us a bit about the recovery at home and the road ahead for patients then afterwards?

Rebecca: Yeah of course people slowly build themselves back up. Before they go home they should be able to walk up the stairs get up and dress themselves and almost be back to their baseline mobility before they came into hospital. People will be on strong painkillers for usually a couple of weeks after surgery and that can make them quite tired so it's important to stay active and get out for walks every day. Most people feel fully back to themselves after about one to two months. As Lauren was saying, the specialised physio goes through breathing and coughing techniques with you before you go home and you'll also be offered follow-up cancer rehabilitation physio sessions after your discharge. People will often feel more short of breath in the first few weeks after surgery as everything heals and while they still have pain that needs to be managed with painkillers but for most people this gradually improves over time but just to reassure people that the shortness of breath they feel in the initial couple of weeks usually gets much better. You can't do any heavy lifting on the side of your operation for about six weeks and the heaviest you should lift is about a kilogram on the affected side so we say nothing heavier than a kettle. You should also avoid any pushing, pulling, lifting or dragging from that side as well which is important to think about especially if you have a dog at home who likes to go for walks. People shouldn't drive when they're taking the strong painkillers so it's important to plan for this after your surgery. A lot of people after lung surgery ask about flying so we generally say you shouldn't fly for about six weeks after surgery. We'll see people back in the clinic with a new chest x-ray about four to six weeks after they're discharged home and at that point we can make sure it's safe for them to fly again.

Rosie: Okay so diagnosis to treatment and surgery time can happen very quickly for some people and be very overwhelming for patients and their families. So Stephie what supports are out there for patients?

Stephie: Yeah it can indeed be quite a stressful and overwhelming time for patients and their family and I suppose just to reassure them that they are in the right place and reach out if they do need any support and support is out there and so such support is such as the Irish Cancer Society or the Irish Lung Cancer Community. The Irish Cancer Society actually have a stand here in James's that patients can visit while they're inpatients and family members. There's the Daffodil Centre and the ARC House which are also all wonderful resources. The Irish Cancer Society have also done an episode here as well and is available for people to listen to. Patients are also given this support information from our lung cancer coordinators at their first consultation visit in clinic with their surgeon.

Rosie: That's great to know and we can put the links to those resources in the show notes as well. And Rebecca what kind of follow-up care should patients expect then post-operatively?

Rebecca: So all the samples that were taken from theatre are sent away for further analysis to the lab. It usually takes about two to three weeks for those results to come back. So people will be contacted by phone with those results and the next steps will be discussed at that stage. You'll have the contact details for the ward and the cardiothoracic ANPs like Stephie to ring if you've any concerns about your recovery and early review can be arranged if that's needed. Most people will come back to see their surgeon about four to six weeks after their discharge and the next steps will be discussed again in the clinic. Depending on the results of your test before or after surgery some people will require extra treatment for their cancer such as drug treatment and if surgery is the only treatment that people need they'll be entered into a surveillance program where they have a CT scan at six months and a year after their surgery and then nearly for at least five years.

Rosie: Fantastic, thanks Rebecca. So what would you say are the key take-home points then for anyone who's listening to this episode?

Stephie: Yeah so I suppose some key take-home messages for people who are coming in for lung surgery is the fitter you are coming into the surgery the easier you'll find it after the surgery. So be sure to stay active and eat well before and after your operation. Stop smoking is also really important to make it easier for you in your recovery and as Lauren has mentioned pain control is super important after thoracic surgery so be sure to use your pain relief frequently and to stay on top of your pain and that will really help you throughout. The most important thing for people to know is that there's a whole team around them to help them get through this journey and to get a good outcome. It's really important for us that people understand what's happening and what to expect so that they can engage with the different steps of the process and reduce their worry as much as possible. Please ask as many questions as needed at any time throughout your journey and use all the resources available such as this podcast.

Rosie: Thanks Stephie, such an informative episode and thanks so much to Consultant Cardiothoracic Surgeon Ms Rebecca Weedle, Consultant Cardiothoracic Anaesthesiologist doctor Lauren O'Callaghan and Cardiothoracic Advanced Nurse Practitioner Stephie Keating for talking us through everything that a patient needs to know about going for lung surgery.

Stay tuned for our next episode on the Pain Team with doctor Áine O'Gara and Clinical Nurse Specialist Lynn.

(Outro) Aislinn: You have been listening to Operation Preparation, Pre-Anaesthetic Assessment Clinic podcast from St. James's Hospital, Dublin. Don't forget to subscribe and check out our website, links and abbreviation in our show notes to learn more about the topics we've covered today. If you have a question that you would like us to cover here, email us at operationpreparation@stjames.ie. Thank you for listening. Until next time.