Episode 10 – What Are All These Lines and Tubes?

(Intro) Pam: 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 the 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.

Pam: Hi everybody, welcome back to 'Operation Preparation'. In today's episode we are talking about drips, lines and tubes. I'm Pam, a clinical nurse specialist in the clinic. And joining me today are Consultant Anesthesiologist Dr Alan Broderick and Clinical Nurse Specialist Rosie. So, you're drowsy and a little disorientated, and you're waking up in the Recovery Room. And you're thinking, what are all of these lines and tubes attached to me? So to help patients prepare and know what to expect when they wake up, we'll explain a little bit about the different kind of lines and tubes that you might have when you wake up. So first off, Rosie, what do we mean by lines?

Rosie: So this is an umbrella term for a collection of all the different monitoring devices and cables, IV drips, lines, and tubes, as well as surgical drains and catheters. It can look a bit daunting to patients when they wake up and they see themselves surrounded by all of these wires and equipment.

Pam: And Alan, can you tell me what are the different kind of lines that patients can have?

Alan: Well Pam, a patient can have one or more of the following. They could have IV lines in a vein for fluids or medication. This is the drip that we use to send patients off to sleep for their general anaesthetic, and we've covered this in episodes four and five. Some patients might also have an arterial line in their wrist, and this is used to monitor blood pressure and monitoring their condition. You may have a central venous line or a central line for short, and this is like a bigger version of an IV line. And this is used more for major surgeries or longer operations and is often placed in the side of the neck or the groin. You might have an epidural line, which would carry medication into an area of your back to help with post-operative pain relief. And then you could also have a urinary catheter or a tube into the bladder, which helps us monitor how well your kidneys are functioning. And some patients, in addition, could have surgical drains, and these also can be monitored.

Rosie: So this is on top of the standard monitoring equipment we use to monitor your blood pressure like a blood pressure cuff, ECG dots to monitor the heart and the heart rate, and an oxygen probe on the finger to monitor your oxygen levels. We've also put together a video presentation. The link for this is in the show notes, and you can see what these lines look like on a patient for anyone who's a little bit more curious.

Pam: Okay. So Rosie, will I need *all* of them?

Rosie: Well, everyone will have a blood pressure cuff, ECG leads on their chest, and an oxygen monitor on their finger even if they're just having a local or a regional anaesthetic, which we covered in episode three. The rest will depend on the kind of surgery that you're

having and your overall health condition. For general anaesthetics, when you wake up, there will also be an oxygen mask on your face, and everyone having a general anesthetic will definitely have an IV cannula.

Pam: Okay. Fantastic. So let's start at the beginning. Alan, what is an IV cannula or peripheral line, and how many will I need?

Alan: So an IV cannula is a tiny straw placed into a vein to give medication or fluids. It's important to know that once it's in place, there's no longer any needle in your skin, so you're free to move about without causing any damage to yourself. All that's left is a small flexible tube that is placed through the skin into a vein, usually in for a few days and often in the hand, but sometimes the elbow. A sticky plaster is then put on top of that to secure it in place. This goes in before you go to sleep, and sometimes we would put in extra ones after you've gone to sleep. These then are taken out when it's no longer needed or if it stops working or if it begins to show any signs of infection.

Pam: Okay. And Rosie, can you tell me a bit more about an arterial line?

Rosie: So an arterial line can look just like an IV cannula except this one goes into an artery usually in the wrist. It's used to monitor your blood pressure. So most patients will have their blood pressure monitored with a blood pressure cuff on their arm that inflates up and down every few minutes. But some patients who might have, say, for example, a cardiac history or undergoing major surgery or very long surgery will require what we call an arterial line. It tells us your blood pressure with each heartbeat and can stay in for a number of days or until it's no longer needed. This can be inserted before or after you go to sleep, and it's inserted and removed in a similar way to an IV cannula. There's no needle left, just a thin flexible tube so you're free to move your arm and your hand. What's very handy is that we can also use this line to take blood samples from and looks at your oxygen and your carbon dioxide levels.

Pam: That's really interesting, Rosie. Thank you. And, Alan, tell me, what is the difference then with a central line?

Alan: A central line, to keep it simple, is a larger version of an IV line. It's inserted into a much larger vein usually after you've gone asleep. It has a few extra attachments on it for fluids and medications, so we can give different drugs and fluids all at the same time. We use these lines for patients undergoing perhaps major operations or longer surgeries. We can also take routine blood samples from this, which would save you extra needles after the operation. If you get one of these lines, you will need to have a routine chest X-ray afterwards to make sure it's in the correct position. Again, there's no needle left here.

It's just a long flexible straw that's usually stitched in place. Again, this can stay in for a few days. And once it's no longer needed, it's very easily removed, but you are encouraged to lie flat for fifteen minutes after it's removed. It has multiple attachments coming out of it so that we can give different medications and fluids at the same time. Very handy.

Pam: That's really interesting, Alan. Thank you for that. And Rosie, epidural was mentioned on the list. Now most people think about that when they're having a baby, but if I'm coming in to have surgery, why would I have an epidural?

Rosie: Well, exactly. Most people probably associate epidurals with childbirth, but they are used for surgeries in men and women too. So an epidural is a catheter inserted into a particular space called the epidural space in your back, and this is inserted by the anesthesiologist before you go to sleep by sitting up on the side of the bed. The procedure will be explained to you step by step by the anesthesiologist and anaesthetic nurse. It's usually used alongside a general anaesthetic to help manage your pain after your surgery so that you wake up nice and comfortable. Again, once it's inserted, there's no needles, just a long, thin, flexible straw, and it's held in place by a large, sticky dressing.
An infusion of local anesthetic and sometimes extra pain medicine is usually running through it.

Alan: Patient undergoing major abdominal or thoracic surgery may be offered this type of analgesia, and this will be discussed with them beforehand. When you wake up, the recovery nurses will regularly check your pain score with you. You'll be visited by the pain team who will decide when the epidural is no longer needed. This usually happens after a couple of days.
It comes out very easily just like an IV line. In fact, most patients say the worst part of taking out an epidural line is removing the sticky dressing! We are planning a future episode where we'll deep dive into epidurals a little bit more.

Pam: That's brilliant. Thanks Rosie and Alan. That's really interesting and informative information. Rosie, can you tell me a little bit about urinary catheters?

Rosie: Yeah. So some patients require a urinary catheter depending on the type and length of surgery they're having and their condition. They're inserted usually after you've gone to sleep. These are inserted so we can monitor how much urine your kidneys are making, and that in turn helps us to monitor your condition. This will be removed as soon as it's not needed anymore, and that can be anything from the same day to a few weeks afterwards depending on your condition and also the kind of surgery that you've had.

Pam: And, Alan, is there any other lines that I should know about?

Alan: So these are all the lines from an anaesthetic point of view, but you could also have some extra tubes courtesy of the surgical team. Again, this depends on the nature of the surgery, but these include surgical drains to collect fluids that will be monitored by the nurses; NG or nasogastric tubes, these are tubes that go into your nose, down to your stomach to help with drainage of your stomach or with feeding. You may also need a chest x-ray depending on which type you have.

Pam: Great. And Rosie, will I know before I go to see which one of these lines I'll have when I wake up?

Rosie: So this would have been explained to you in the Pre Anaesthetic Assessment Clinic and in your surgical appointment, but it will be explained again on the day of your surgery with your anaesthesiologist, and they can answer any questions that you might have.

Pam: That's brilliant. Thank you so much, Rosie and Alan for all your information. Have you any tips for the patients?

Rosie: So sometimes the sticky dressings that we use to keep our lines in place and nice and secure can start to become undone or peel away for a variety of reasons. But if you do start to notice this, do let the nursing staff know so that they can secure it again and keep your lines in place.

Alan: Also, if you're on the ward after your operation and you feel that one of the lines is a bit too short or that maybe it's in a inconvenient location, you can let the nursing staff know so it can be adjusted. We'd much rather know these kinds of problems ahead of time rather than risk the line being accidentally pulled out.

Rosie: Also, if you know in advance that you're going to be having an awful lot of different lines, we'd recommend pajamas with shorter loose sleeves for ease of access and for your own comfort and maybe ones that open down the front. Loose pajama bottoms or even shorts for a urinary catheter might be a little bit more comfortable for yourself as well.

Pam: That's great. Thanks so much Alan and Rosie for that really helpful information. Hopefully now, future patients will have a better idea of what to expect when they wake up after surgery and why those different lines and tubes are there. We all know it's much easier to cope with things when we understand what they're there for, and even something as simple as bringing the correct type of PJs can help us cope a little bit better. Join us for the next episode where we will discuss pain and its management in more detail.

Outro (Pam): You've been listening to 'Operation Preparation', the Pre Anaesthetic Assessment Clinic podcast from St. James's Hospital Dublin. Don't forget to subscribe and check out our website, links, and abbreviations 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 the podcast at perioperativepodcast@stjames.ie. Thank you for listening. Until next time.