Implanted Epidural or Intrathecal Catheter for Long-Term Pain Control in Cancer Patients
Disclaimer

This is general information developed by The Ottawa Hospital. It is not intended to replace the advice of a qualified health-care provider. Please consult your health-care provider who will be able to determine the appropriateness of the information for your specific situation.
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Introduction

Welcome to The Ottawa Hospital Complex Cancer Pain Clinic (TOHCCPC). You are at TOHCCPC because your pain is not well controlled with standard medications, such as morphine, or because you have side effects from your medication that limit the dosage you can receive. Our team of dedicated staff, nurses and physicians is here to help you reduce your cancer-related pain.

At the clinic you will see an anesthesiologist—a doctor skilled in pain management and the procedures offered in this clinic. There are a number of methods we can use to help control your pain. We will discuss these alternatives with you.

The anesthesiologist may also suggest an epidural or an intrathecal infusion catheter for giving your pain medication. With these techniques patients generally have improved pain control, use less medication and experience fewer side effects. Most patients also feel less sedated and more physically active following the procedure than they may have felt while on their previous medications.

This booklet outlines the risks and benefits of the epidural or intrathecal infusion. Take this booklet with you when you leave here today and use it to help you decide if you would like to go ahead with the procedure. It describes the tests, procedures, and discharge plans involved with these procedures. Keep it with you and refer to it whenever you or your loved ones have questions. Bring it with you when you come to the hospital on your next visit. If it does not answer all your concerns, please ask us your questions and we will answer them for you.

Remember: the decision to go ahead with an epidural or an intrathecal infusion is always yours to make.

Epidural or Intrathecal Catheters for Pain Control

An epidural or intrathecal catheter is a very fine plastic tube which is used to deliver pain medications. It is placed directly into the spinal column, giving you the best possible pain control because it bathes and numbs the nerves that transmit pain. It works in a similar way to the epidurals women receive when in labour. Placing the medication exactly where they are needed in the spine helps them be more effective and causes fewer side effects.
**Epidural Catheter**

For patients suffering from a severe pain crisis, in need of urgent pain relief, the anesthesiologist will use an epidural catheter. This procedure can be performed in The Ottawa Hospital Pain Clinic. However, it is only a temporary measure designed to give quick pain relief until a more permanent solution can be found.

When inserting an epidural catheter, the anesthesiologist will first freeze the skin over the middle of your back. Once the freezing has taken effect, the anesthesiologist will make a tiny (1 cm) incision into the back. An epidural needle is inserted through the incision until it reaches the epidural space (see Diagram 2). The anesthesiologist will then thread a thin plastic catheter through the needle into the epidural space. The needle is removed and the epidural catheter is left in place. Following this, the anesthesiologist will work the catheter under the skin (this is called tunneling), so that the catheter or tube will exit from your side. (see Diagram 3). The epidural catheter will then be attached to a pain pump. The pump is used to get pain medication directly into the epidural space within the spinal column. Pain relief should be nearly instant.

![Diagram 2: Spinal Column showing both Epidural and Intrathecal Spaces](image)

**Intrathecal Catheter**

The insertion of an intrathecal catheter is a planned procedure. It is always done in the operating room (OR). The intrathecal catheter is a more permanent option for pain control than the epidural catheter described above. The insertion of an intrathecal catheter can usually be arranged within 24 to 72 hours.
When the day for your procedure arrives and you are in the OR, you will either be given medications that make you sleepy or you will be placed under a general anesthetic. The anesthesiologist is the best person to decide what is right for you and will ensure that you are comfortable during the procedure. After the anesthetic takes effect the anesthesiologist doing the operation will use x-ray guided techniques to insert a needle into your spinal column’s intrathecal space.

Once the needle is placed, a plastic catheter is threaded into the intrathecal space and guided to the correct location to manage your pain. The needle is removed but the catheter is left in place. The catheter is tunneled under your skin from your back to your side where the anesthesiologist has made a small incision (3 to 4 cm). (see Diagram 3).

2nd incision over 11th rib
1st incision
Catheter

Diagram 3: Tunnelling the catheter from the patient’s back to the patient’s side (Diagram by D. Cherry 1987)

The catheter is connected to a ‘port-a-cath’ access device. The port-a-cath serves as a port, or doorway, to the catheter tube (see Diagram 4).

Diagram 4: Port-a-Cath Access Device with Catheter attached
The port-a-cath and the catheter are left tucked under your skin as shown in Diagram 5. The incision is then stitched up using 4 or 5 stitches with the port-a-cath and tubing left under your skin.

The port-a-cath is under the skin

Diagram 5: Placement of the Port-a-Cath
(Courtesy of SIMS Deltec, Inc, St.Paul, MN.)

The plastic catheter and port-a-cath create the pathway through which pain medications reach the spine. To get medications into this pathway a small external pump is used. The pump is attached to the port-a-cath and tubing with a small needle called a “Gripper” or Huber as shown in Diagram 6.

![Diagram 6: Gripper and Pump Attachment — M. McCaffery 2000](image)

*Note: If you consent to the placement of an intrathecal catheter you will be carrying the pump and medications with you 24 hours per day, 7 days per week indefinitely.*
Medications

We use a number of different medications to help control pain. Some, such as lidocaine (Xylocaine) and bupivacaine (Marcaine), are the same ones used by dentists when freezing a patient’s gums to allow for pain free dental work. Family and other doctors also use these medications when "stitching up" cuts and lacerations. These drugs are also called local anesthetics and are very good at relieving pain. Others medications are opioid-based, such as morphine, hydromorphone or fentanyl. These are also given directly into the spinal column through the catheter. Your anesthesiologist will discuss these drugs with you, reviewing each one, their benefits and side effects. Together you will select the drug which is the best fit for your particular needs.

Complications

Complications can happen during and following all procedures and as a result of medications. The following are some of the more common complications with the placement of epidural and intrathecal catheters.

Procedural Complications

Occasionally, spinal fluid can leak from the intrathecal space and cause a headache. This is called a post-dural puncture headache. To relieve the headache, patients are advised to lie flat and drink fluids (sometimes fluids with caffeine). This is usually enough to help the headache go away. However, in rare cases if the headache is severe and does not go away you may need to undergo a procedure called an epidural blood patch. During this procedure, a small amount of your own blood is injected into the spine to block the leak.

Catheter Complications

Catheters are tools, and like all tools, they can break, get damaged or sometimes malfunction. Some of the more common catheter complications that we see include:

1. **Disconnection** – Sometimes the pump and medication can be accidentally disconnected from the port-a-cath causing poor pain control. This is easily fixed by reconnecting the tubing or putting in a new “Gripper” needle; but until then, patients will experience increased pain scores. Increased pain can be temporarily managed using other oral or intravenous drugs. Your doctor will ensure this back-up medication is readily available.
2. **Blockage** – Sometimes the catheter tube kinks and blocks the flow of medication to the spine. The pain may return if this happens. Usually such a blockage will set off the high pressure alarm on the pump. We will need to ‘unkink’ or unclamp the tubing to fix this problem. On rare occasions we may need to redo the catheter, and on the rare occasion we may need to insert another intrathecal catheter in the operating room.

3. **Air in the line** – Sometimes air gets in the line which sets off an alarm and stops the pump. You will need to call the nurse to reset the pump. The nurse will decide if the line needs to be changed.

**Drug Complications**

**Side Effects of Local Anesthetics**

With local anesthetics such as lidocaine (Xylocaine) and bupivacaine (Marcaine) patients sometimes experience side effects. The following are some of the most common:

1. With the placement of an epidural or intrathecal catheter, patients may feel that their pain is gone, but now feel a sense of numbness or tingling that they didn’t feel before the procedure. These sensations are usually manageable with a few adjustments to the medication dosage.

2. Some patients may feel pain relief but feel weak. This too is usually manageable through dosage adjustment.

3. Some patients may have trouble passing urine. This usually only lasts a short time before getting better. To help ease this transition, we can put in a bladder catheter to drain the bladder. When your body gets use to the medications you will be able to pass urine on your own again. However, some patients do require the aid of a urinary catheter for longer periods of time.

4. Some patients may experience allergic or adverse reactions to the medications. This might mean seeking alternative medications.

**Side Effects of Opioid-based Medication**

There are a number of side effects to opioid usage as well. The following are some of the most common:

1. Some patients feel increased drowsiness. This is usually manageable, and accomplished by adjusting medication levels until the drowsiness improves without compromising pain relief.
2. Patients may also feel itchy. The itchy feeling usually goes away after a few days, but until then patients can feel itchy all over, often around the face.

3. Some patients may have trouble passing urine. This usually only lasts a short time before correcting itself. To help ease this transition we can put in a bladder catheter to drain the bladder until your body gets use to the medications, at which point you will be able to pass urine on your own again. However, some patients do require the aid of a urinary catheter for longer rather than shorter periods of time.

4. Some patients may experience allergic or adverse reactions to the medications, such as nausea. This might mean seeking alternative medications.

   *Note: Regardless of medication used, you should keep in mind that good pain control sometimes comes at the cost of living with side effects, such as numbness. Pain control can be a balancing act between acceptable loss of feeling and pain relief. Ultimately you, the patient, must decide if the pain relief is worth any side effects you are experiencing.*

**Extremely Rare complications**

Some complications can be quite extreme. Thankfully, they are also very rare. These include:

1. Allergic or immune system response to the implanted materials
2. Spinal cord injury
3. Infection
4. Meningitis
5. Bleeding
6. Paralysis
7. Death

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**Your Hospital Stay**

**The Day Before Your Intrathecal Catheter Procedure**

If you are not already in the hospital as an in-patient, you will be admitted the day before your procedure. Please bring this booklet with you.

Once admitted to hospital you will have some blood taken. These tests help the anesthesiologists decide if you are at increased risk for bleeding. The procedure will be
explained to you again, along with its risks and benefits. You will then be asked to sign a consent form allowing us to perform the procedure.

You can eat on the day of arrival in hospital, but you will not be able to eat anything from midnight that night until after your operation. You can drink water up until 2 hours before the procedure and you can continue to take medication with sips of water. You may need some intravenous fluids to keep you hydrated while we wait to see what time you will be going to the operating room. If you are taking any medication to prevent clots, this medication will be stopped for 12 to 24 hours prior to (before) the procedure.

**On the Day of Surgery**

On the day of the surgery you will be asked to remove all of your clothing and to wear a hospital gown. When the time of your surgery approaches you will be taken to the operating room where you will be met by the surgical team who will be looking after you during the procedure. You will either be given a general anesthetic or you will be lightly sedated for the procedure. You will be asked to lie on your stomach or on your side so that the anesthesiologist can perform the procedure. The anesthesiologist will place the intrathecal catheter into your back as described earlier in this booklet.

**In the Recovery Room**

After the procedure is finished you will be taken to the recovery room (also called the PACU, or Post-Anesthetic Care Unit) by the anesthesiologist. The nurses there will take your vital signs, give you oxygen and cover you with a warm blanket. The pump will be attached to the port-a-cath and the medication will start flowing to your spine. The nurses will assess you for numbness by placing an ice cube on your skin at various locations. They will also ask you to move your feet and legs to see if you have any weakness. Once the anesthesiologist and nurses are satisfied that you have good pain control, that your blood pressure and oxygen levels are stable and that you are awake from your anesthetic you will be taken back to your room.

**After Your Procedure**

**On the Ward**

When you return to the ward you will meet the nurse assigned to your care. The nurse will continue to take vital signs and test for numbness with ice. The nurse will also instruct you on how and when to use the pump. The pump will be programmed to give you medication continuously around the clock. You will be shown a button that you can push to give yourself additional pain medication if and when it is required.
Your nurse will explain to you where you can expect to feel the changes in sensation. If there are any changes with your bowel movement or bladder function, discuss them with your nurse. Rarely, you might feel numbness around your mouth. If so you will need to discuss this with your nurse also.

*Call your nurse immediately if:*

1. The “Gripper” needle becomes dislodged or disconnected.
2. Your dressings, clothing, or bedclothes become wet.
3. Your pain gets worse.
4. Your legs feel weaker.
5. You feel mixed-up/confused or too sleepy.
6. Your speech becomes slurred and you have trouble speaking.

When you feel you are ready to get out of bed for the first time, you will need to have two people help you in case your legs feel weak. Do not attempt this on your own as you may fall and injure yourself. Call for the nurse and let the nurse know that you want to stand up. Two people will need to help you the first time.

Whenever you want to get out of bed, it is best to always be cautious as you could be at risk of falling. Always sit on the side of the bed first, and then tap your feet on the floor to make sure you have good feeling in your feet and legs, before you attempt to stand up. You could have more weakness in your legs if you have recently used a bolus.

About one week after your procedure the gripper and all tubing will be changed. Your stitches will also be taken out at that time.

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**Discharge and Going Home**

Unless there are complicating circumstances you can go home with an intrathecal or epidural catheter in place. The nurses in the community can look after the medication, change your gripper and also change the tubing and medication bags. On the day of discharge, a nurse will connect you to another portable medication infusion pump. It works much the same way as the pump you were using during your hospital stay. Don’t fear, a nurse will teach you how to use it before you leave.

If for any reason you cannot go home you may be transferred to a more appropriate hospital such as the Elizabeth Bruyere Palliative Care Unit. You can also go to Hospice Renfrew or the Cornwall Hospice if that is better for you and your family.
Homecare
In the meantime, we will have arranged for a homecare team to look after you once you have left the hospital. The homecare team will arrange to have medication bags brought to your home as required. They will also arrange for any necessary supplies to be delivered to your home the same day. The homecare coordinator will arrange for a nurse to visit you in your home and assess your pain as well as monitor your catheter and medication. The homecare team will also give you an information form if you need to go to a hospital in the future.

What Can You Do For Yourself
Once at home, it is a good idea to be aware of your own needs and changes to how you feel. Let the nurse or caregiver know if you are experiencing any unusual feelings, sensations or weakness or if you notice equipment problems, such as loose tubing. If you are experiencing anything out of the ordinary let someone know so that assistance can be arranged.

Call your nurse immediately if:
- The "Gripper" needle becomes dislodged or disconnected
- Your dressings, clothing, or bedclothes become wet from the ‘gripper’ or tubing is leaking
- Your pain gets worse
- Your legs feel weaker
- You feel mixed-up/confused or too sleepy
- Your speech becomes slurred and you have trouble speaking
- If you have a temperature over 38°C
- Increasing headache that does not go away
- Lights become too bright
- Stiff neck

You may want to consider getting a Medic Alert bracelet as an extra way to communicate with your health-care team.

If you are up and about, then we would like to see you in the Complex Cancer Pain Clinic during the week after your procedure and likely once a week for the next several weeks. During these appointments, we will ensure that you are progressing well with your intrathecal or epidural infusion pump.

Remember: You are your own best advocate. Your doctors and nurses have your best interests at heart. However, you have an essential role in helping yourself while you have an epidural or intrathecal catheter. Many doctors and nurses may not be familiar with intrathecal
catheters, so it is important to inform them that the medication in your pump goes directly into your spine. **It is OK for you to let them know that no other medications or blood products can be infused through this catheter.**

You can show them this booklet so they have a better understanding of what the catheter is about. The doctors and nurses can call the Pain Clinic or the emergency numbers if they have any questions.

**We Are Here To Assist You**

The homecare nurse will give you her contact number. Write it down here:

Homecare Nurse

Phone Number

The following doctors and nurses are experienced with epidural and intrathecal infusion catheters. Call them as required.

- Gini Jarvis, Palliative Nurse Specialist at The Ottawa Hospital Cancer Centre and Complex Cancer Pain Clinic
  Pager: 613-788-1321

- Dr. C. Smyth, Anesthesiologist at The Ottawa Hospital General Campus
  Pager: 613-274-1221
  Cell: 613-325-9123

- Dr. Shona Nair, Anesthesiologist, at The Ottawa Hospital General Campus
  Pager: ______________________
  Cell: 613-601-1106

- Health Care Professional
  Pager

- The Complex Cancer Pain Clinic:
  Telephone Number: 613 737-8949

- Acute Pain Service, General Campus
  Locating Number: 613-737-8222
Questions

Write down and questions or comments that you have so that you can discuss these with your health-care team member at your next visit.