Patient Information Sheets

Pancreaticoduodenectomy – Whipple's Procedure.

This is a complex and major operation to remove the head (the 'right end') of the pancreas gland. This procedure is carried out in patients who:

- Have a suspicious lump in the head of the pancreas gland (including cancer);
- Have a blockage in the terminal part of the bile duct (often first becoming apparent after the patient develops jaundice).

- Here, we explain some of the aims, benefits, risks and alternatives to this procedure (operation/treatment). We want you to be informed about your choices to help you to be fully involved in making any decisions.
- Please ask about anything you do not fully understand or wish to have explained in more detail.

WHY DO I NEED THIS OPERATION

The most common reasons to have this operation are; cancer of the head of the pancreas, bile duct, duodenum or ampulla. Whipple's operation offers the only chance of cure for many of these problems. There are also many non-cancerous conditions that are treated with this procedure: e.g. cysts of the head of the pancreas and bile duct, pancreatitis, pre-cancerous tumours, trauma and rarely even for gallstones lodged in the head of the pancreas.

It is often difficult to obtain an absolute diagnosis of cancer either before or even during the surgery. Cancers in this area are often right in the middle of the pancreas and are not easily or safely biopsied. The pancreas also tends to develop a great deal of scarring or reaction that interferes with interpreting a pre-operative needle biopsy. It is common to biopsy a cancer in this region and obtain a benign result. Thus, it is up to the surgeon's judgment whether or not there is cancer present and if a Whipple's Procedure would be of benefit.

The presence of cancer in the piece of tissue removed is determined by the pathologist when they look under the microscope. A result from the pathologist can take anywhere from 2 – 7 days.

The decision to proceed to this type of surgery is very complicated. This is the reason that it is important to be operated on by a surgeon with a great deal of experience in surgery for cancer of the pancreas and bile duct. His/her judgment will be valuable in determining whether or not a tumour is present and if it is removable.

Sadly, sometimes during surgery the surgeon will determine that the cancer is not removable. This can be due to the finding of secondary cancer in the liver. Another reason may be the cancer's relationship to important blood vessels supplying blood to the liver and bowel. These blood vessels cannot be removed without threat to the patient's life. If the cancer is not removable, the surgeon may elect to perform a biliary bypass procedure to permanently drain away the jaundice. This will be discussed fully with you and your family after the surgery.

WHAT DOES THE PANCREAS DO?

The pancreas has two functions.

1. It produces insulin to prevent you getting diabetes
2. It produces digestive juices to help your body breakdown your food.

THE OPERATION

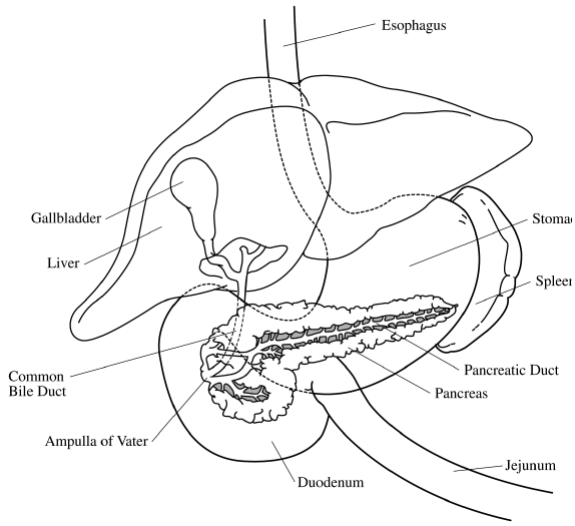
The Whipple's procedure is performed in two stages:

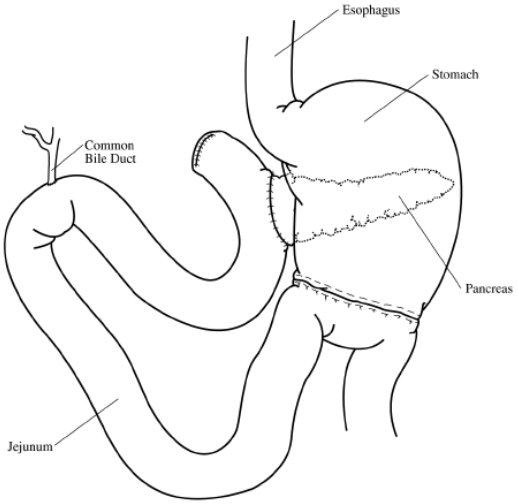
1. Removal stage

The gall bladder, the common bile duct, the head of the pancreas, duodenum, part of the stomach, part of the small bowel and the lymph glands in the area are removed.

2. Reconstruction stage

The pancreas is attached to small bowel, the bile duct joined to the bowel and finally the stomach is joined to the bowel to allow food to pass through.





WHAT TO EXPECT IMMEDIATELY AFTER SURGERY

Pain Relief

In the first few days after surgery there may be a moderate amount of discomfort. You will have some form of pain relief. There will be a choice of:

• Epidural (if medically suitable) – this is a fine tube placed in the back that delivers local anaesthetic to the nerves around the spinal cord. It is highly effective and you will still be able to walk with it in.

• Patient Controlled Analgesia (PCA) - a button you will press that delivers strong pain killers (like morphine) straight into your IV line. This is combined with a tiny catheter placed in the wound providing local anaesthetic.

These devices are very safe and have locking mechanisms to prevent overdose.

IT IS VERY IMPORTANT THAT YOUR RELATIVES DO NOT PUSH THE PAIN BUTTON FOR YOU AS THIS WILL RESULT IN AN OVERDOSE OF MEDICATION THAT MAY STOP YOU BREATHING.

Your anaesthetist will discuss the pros and cons of each with you prior to surgery and it is your choice in conjunction with your anaesthetist. Either option may not be suitable for every person. Every effort will be made to minimize the discomfort and make it bearable. Your treating team will be monitoring your level of pain frequently. When you are back on a normal diet, you will be converted to oral pain relief.

Drain tubes

You will have a number of plastic tubes in your body following surgery. They will vary a little depending on your particular medical need. They will be removed at variable times following your surgery under the direction of the surgeon. All tubes except for an IV in your hand will be placed under anaesthesia.

1. IV line: Central venous line placed in your neck (done under anaesthesia) to give you fluids and pain relief after surgery.
2. Urinary catheter: tube placed in your bladder so you don't have to get up to pass urine.

3. Abdominal drain tubes: soft plastic drains coming out of your abdomen that are placed around the pancreas to drain any fluid, bile or pancreatic juice, so it does not collect in your abdomen.
4. Nasogastric tube: all patients require a tube that goes from their nose into their stomach.

Eating
You will not have anything to eat or drink for several days after surgery. An intravenous infusion will provide you with the necessary fluids. You will have a nasogastric tube (NG) in your nose that will remove the stomach contents until your stomach and intestines recover. I will let you know when you will be able to eat. You will start on liquids first and gradual take solids.

Urinating/Bowel Movements
In the first few days after the surgery, a tube placed in your bladder will drain your urine. You will probably not have a bowel movement until several days after the surgery.

Intensive Care
It is likely you will be looked after in intensive care for at least the first day after your surgery. Your continued stay here will depend on your condition.

Activity
You can expect your nurse and physiotherapist to help you get out of bed on the first day after surgery. You will be able to walk short distances even with all of the tubes and intravenous lines. As each day passes your tolerance for walking and sitting in a chair will increase. This is extremely important to prevent pneumonia, clots in the legs and loss of general condition.

Other Medications and Preventative Measures
You will be given a blood thinner once or twice a day as a small injection under the skin. This helps to prevent clots in the legs (DVT) that may travel to the lungs and be life threatening. If you are in a high risk group for DVT, you may be sent home with this injection for several weeks after surgery. You or a family member will be taught how to give the injections. You will be asked to wear TED stockings throughout your hospital stay. These prevent clots in the legs. You may stop wearing these when you are able to get up and walk easily by yourself.

In many instances you will be given a medication to decrease the acid secretions in the stomach. This prevents stomach ulcers that may occur after major surgery. You must not smoke at all. Alcohol is very toxic to the pancreas. After surgery, alcohol should be avoided for at least 6 weeks.

Your Incision
You can expect to have a waterproof bandage over your incision for the first several days. Your surgeon will remove the dressing at the appropriate time. You will be able to shower with the waterproof dressing on. It is quite common to have a small amount of leakage from the wound. Most commonly, you will not have any stitches to remove; they will be of the dissolving type.

Other Important Information
You can expect to see your surgeon every day. On weekends or in times when your surgeon is operating elsewhere, you will see one of the practice partners. All are very experienced in this type of surgery and commonly assist each other in the operating theatre. We will make every effort to keep you informed of your progress. We are always honest and open with you and your family. Feel free to ask questions.

Length of Stay in Hospital

On average most patients will expect a 7-10 day hospital stay. This time however differs greatly for individual patients. Some stay shorter, some stay much, much longer. You will not be discharged before you can walk unaided and care for yourself.

What are the complications that may happen immediately after surgery?
The Whipple's operation is a complex surgery with many potential complications. In the hands of surgeons who are experienced, the complication rate is usually very low. The most serious and specific complications that may be seen after this operation include:

Pancreatic Fistula - After the tumour is removed from the pancreas, the cut end of the pancreas is stitched onto the bowel so that pancreatic juices can mix with food to allow absorption. The pancreas is a very soft and sometimes fatty organ. In some patients, this stitching may not heal very well. If this happens, then a leakage of pancreatic juice into the abdomen occurs. A significant pancreatic leak occurs in 10-15% of patients. Often, this leak is controlled by the soft plastic drain that is left in at the time of the surgery, without any ill effect to the patient. In most patients who develop a leak of pancreas juice, the leak heals on its own. Sometimes, the drains do not do a good enough job and a new drain needs to be placed in the X-ray department. Occasionally the drain doesn't cope with all the drainage and the patient will need to be re-operated on to drain the pancreatic juice. This re-operation occurs in 1-4% of patients undergoing Whipple's procedure.

Gastroparesis – paralysis of the stomach. It is quite common (about 25% of patients) for the stomach to remain paralysed for a variable time after a Whipple's operation. The small bowel however, begins to function in the first one to two days after surgery. It may take up to **4-6 weeks** for the stomach to adapt to the changes after the surgery. This may mean that you cannot take anything by mouth during this time and you will have to remain in the hospital. It also may mean that you may require continuous drainage of your stomach to prevent vomiting. (Done with a tube in the nose or a tube through the skin of your abdomen into your stomach).

If you experience a prolonged period of time where your stomach does not work, rest assured, the stomach will start working again in its own time and when this occurs it usually does so rapidly.

Other immediate complications and implications of this surgery
Like all major surgery there are a number of serious complications that may occur. These must be dealt with on a case by case basis. Some of these complications are:

• Death from any cause: approx. 1% of all patients having this type of operation.
• Bleeding: either in the first 2-3 days requiring return to surgery or delayed bleeding from a ruptured artery some weeks after surgery. You may require a blood transfusion. (Approx. 20% of patients having this surgery).
• Other blood vessel problems: heart attack or stroke.
• Development of diabetes requiring insulin injections.
• Infections: Wound, pneumonia, urine, bile duct, intra-abdominal, epidural related, IV line related, related to the gastrostomy tube.
• Punctured lung secondary to the IV line in your neck.
• Clots in the legs that may travel to the lungs.
• Stomach ulcer that may or may not bleed. This may resent as a vomit of blood or black bowel motions.
• Urinary catheter complications: unable to pass urine after catheter removed especially in men
• Weight loss: it is common to lose about 10% of starting body weight after this surgery. (approx. 5-10kg)
• Wound pain and prolonged numbness under the wound.

• Hernia of the wound.

AFTER DISCHARGE

What are the long-term complications of the Whipple operation?

Some of the long-term consequences of Whipple operation include the following:

Malabsorption

The pancreas produces a substance (enzyme) that digests food. In some patients, removal of part of the pancreas during the Whipple's operation can lead to a decreased production of this enzyme. Patients complain of diarrhoea that is very oily. Treatment consists of taking oral pancreatic enzyme pills and usually provides excellent relief from this problem. About 20% of all Whipple's patients may require these supplements.

Diabetes

Another role of the pancreas is to produce insulin that controls blood sugar levels. During Whipple's operation the head of the pancreas is removed. Therefore there is a risk of developing diabetes. In general, patients who are diabetic before surgery or who have an abnormal blood sugar level controlled on a diet prior to surgery, have a high chance of their diabetes becoming worse. On the other hand, patients who have completely normal blood sugar prior to surgery with no history of diabetes and do not have chronic pancreatitis or morbid obesity, have a low probability of developing diabetes after the Whipple's operation.

Alteration in diet

After a Whipple's operation, we generally recommend that the patients eat smaller meals and snack between meals to allow better absorption of the food and to minimise symptoms of bloating or fullness.

Loss of weight

It is common for patients to lose up to 5 to 10% of their body weight after this surgery. The weight loss usually stabilizes very rapidly and many patients will regain this weight in the six months after surgery.

How you may feel

You may feel weak or "washed out" when you go home. You might want to nap often. Even simple tasks may exhaust you. You may lose your taste for food. You might have trouble concentrating or difficulty sleeping. You might feel depressed. These feelings are usually transient and can be expected to resolve in 2-4 weeks.

Your medications

Your surgeon will discuss with you which medications you should take at home. If needed, you will go home with a prescription for pain medicine to take by mouth.

Your incision

Your dressing will be removed before you leave the hospital and if it is not leaking it will be left open to the air. You may wear clothes over the top of it. Your incision may be slightly red along the cut. This is normal. You may gently wash dried material around your incision and let water run over it. Pat the wound dry with a towel. Do not rub soap or moisturizer into your incision for at least 4 weeks or until it is fully healed. After this you may rub vitamin E cream along the wound. It is normal

to feel a ridge along the incision. This will go away. It is normal to have a patch of numbness under the wound.

You may see a small amount of clear or light red fluid staining your dressing or clothes. If it is minor cover that part of the incision with a pad. If leakage is severe, you should contact your surgeon. Over the next few months your incision will fade and become less prominent.

Passing drain tubes in bowel motion

During surgery, your surgeon may place a soft piece of plastic tubing to hold open your pancreatic duct. These may pass with your bowel motion at any time after your surgery. It is common not to notice it. If you do see them in the toilet, it is completely normal. Do not retrieve them from the toilet bowl.

Activity

Listen to your body, if it is hurting, don't continue with the activity. Do not drive until you have stopped taking narcotic pain medication and feel you could respond in an emergency. You may climb stairs. You may go outside, but avoid travelling long distances until you see your surgeon at your next visit. Don't lift more that 10 kg for 6 weeks. (This is about the weight of a briefcase or a bag of groceries) This applies to lifting children, but they may sit on your lap. You may start some light exercise when you feel comfortable. You may swim after 4 weeks Heavy exercise may be started after 6 weeks - but use common sense and go slowly at first. You may resume sexual activity when you feel ready unless your doctor has told you otherwise.