

## The Post Operative Care of a Patient with Whipple's Operation

Laxmi Rai, MSC Health Dept.  
Nursing Campus, Maharajgunj

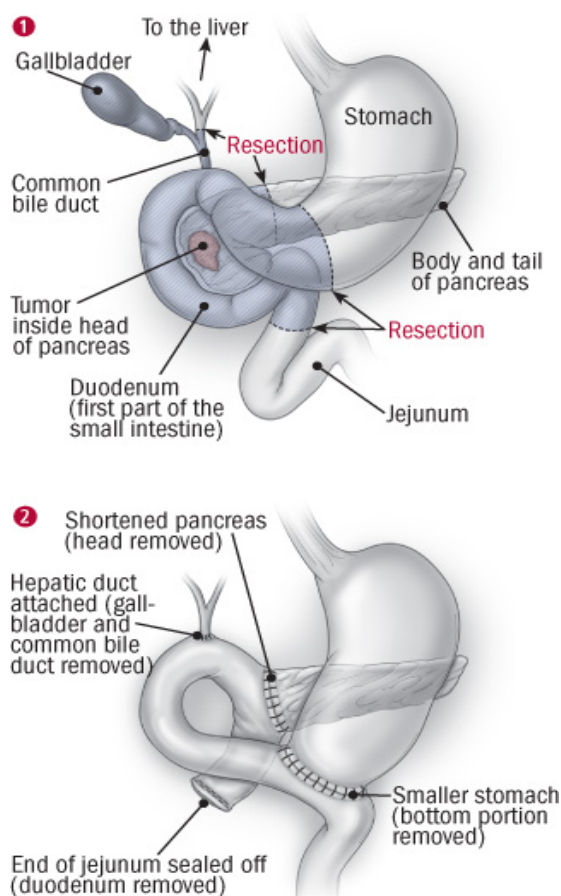
### Abstract

This article describes the most important part, the post operative care of a patient having Whipple's operation. Whipple's operation consists of resection of the pancreatic head, duodenum and followed by pancreaticojejunostomy, choledochojejunostomy, and gastrojejunostomy, & duodenojejunostomy. This complex surgical procedure causes alterations of the normal anatomy which may lead the post operative changes and common complications. The most serious and complications immediately after surgery are pancreatic fistula and gastroparesis. Likewise, there are other immediate complications such as bleeding, infection, pneumonia, stomach ulcer, urinary catheter complication, weight loss, pain, and prolonged numbness under the wound. Besides these complications, the long term complications such as malabsorption, alteration in diet, loss of weight and diabetes may occur. Hospital stay varies from 12 to 23 days, depending on the seriousness and intervention. Furthermore, the complication rate can be low, that depends upon in the hands of surgeon as well as nurse who are experienced. The combination of Whipple's procedure and postoperative care, the outcome in terms of prolonging life, quality of life for patient having cancer of pancreas's head.

### Introduction

Whipple's operation was first described in the year 1903 by New York surgeon Allen O. Whipple. It is also called Kausch-Whipple's or Pancreatoduodenectomy operation. In Whipple

operation the head of the pancreas, a portion of the bile duct, the gall bladder and duodenum is removed. Occasionally a portion of the stomach may also be removed. After removal of these structures, the remaining pancreas, bile duct and stomach are rejoined in the intestine. This allows pancreatic juice, bile and food to flow back into the gut, so that digestion can proceed normally.



The Whipple's procedure is for pancreatic cancer. It is performed in two stages

### 1. Removable Stage

Removal of the gallbladder (cholecystectomy), the common bile duct (choledochectomy), the head of the pancreas, duodenum, small part of the small bowel, lymph glands in the area and sometimes part of the stomach .

### 2.Reconstruction Stage

This stage consists of attaching the pancreas to the jejunum, the bile duct to the jejunum and finally the stomach is attached to the jejunum to allow food to pass through.

Indications:

Whipple's operation is performed for

- a. Cancer at the head of pancreas
- b .Cancer of duodenum
- c. Cholangiocarcinoma
- d. Cancer of the ampulla
- e.Trauma (Duodenum trauma, pancreatic head injury)

Incidence:

Only 15 to 20 in every 100 patients i.e. (15 to 20)%are suitable surgery.

Complications

The Whipple's operation is a complex surgery with many potential complications. The most serious and specific complications that may be seen after this operation are:

- Pancreatic fistula
- Gastroparesis
- Other immediate complications of this surgery

### 1. Pancreatic fistula

After the tumor is removed from the pancreas, the cut end is sutured back into the bowel so the pancreatic juice can mix with food and be absorbed. The pancreas is very soft organ, and in some patients this suture line may not heal very well. If this happens, then patients develop leakage of pancreatic juice.

### 2.Gastro paresis-paralysis of the stomach

It is quite common (about 25% of the patients) for the stomach to remain paralyzed for some time after Whipple's operation. The small bowel begins to function in the first one to two days after surgery. It may take up to four to six weeks for the stomach to adapt the changes after the surgery. This means that the patient can not take anything by mouth during this time and he/she will have to remain in the hospital. He may require continuous drainage of the stomach (through a tube in the nose) to prevent vomiting.

### 3. Other immediate complications of this surgery

- Bleeding may occur, either in the first two to three days requiring a return to surgery , or delayed bleedig from a ruptured arthey some weeks after surgery. The patient may require blood transfusion.
- Infections may develop in the wound, urine, bile duct, intra abdominal or related to the epidural, IV line and gastrostomy tube. Patient may develop pneumonia.
- It is common to experience weight loss, about 10% of his/her starting body weight

after this surgery (approx. 5-10%).

- Patient may experience wound pain and prolonged numbness under the wound.
- A stomach ulcer might develop which may or may not bleed. This may present as a vomit of blood or black bowel motions.
- Urinary catheter complications may leave the patient unable to pass urine after the catheter is removed, especially in man.
- Death is very rare. It happens to one percent of all patients having this type of operation.

#### 4. Long Term Complications

1. Malabsorption
2. Alteration in diet.
2. Loss of weight
4. Diabetes

#### A. Post operative Care:-

#### I. Immediate Postoperative care

After the operation, patient will be in recovery for two to four hours. After recovery, he will then be admitted to the intensive care unit. After surgery, he will require close monitoring and care by the nursing staff. This includes:

1. Receive the patient from the recovery room and take patients chart and take complete handover of the patient.
2. Call the patient's name and ask to open eyes.
3. Keep the patient safely in comfortable position as required.
4. Vital signs (temperature, pulse, respiratory rate, and blood pressure) every 15-60 minutes, and tapered gradually throughout your hospital stay. (Monitor vitals 15 min for the first hour, every 30 minutes for the next

one hour followed by every 4 hours routinely and record in the chart).

5. Maintain intake and output. Urine output is monitored closely with a foley,s catheter
6. A nasogastric (NG) tube is in place and will suction any stomach contents to prevent vomiting.
7. One or two intravenous (IV) catheters will be in place to administer IV fluids and medications. Patient may receive nutrition intravenously or through a jejunostomy tube (J-tube) that was inserted into your small intestine during surgery.
8. A chest x-ray and other radiology exams may be performed as needed.
9. Laboratory tests will be obtained on a regular basis. This will be done less frequently as you recover from surgery. Send the blood sugar as ordered and watch for hypoglycemia.
10. Give chest physiotherapy to pulmonary insufficiency.
- Deep breathing is encouraged to help prevent post-operative pneumonia. You may also be provided with an incentive spirometer and instructed on how and when to use it. Give nebulizer inhalation 6 hourly
- 11 Measures will be taken to help prevent the formation of blood clots in your legs.
12. Pain medications may be given intravenously or through an epidural catheter placed in your back at first. The epidural decreases your sensation of pain in your abdomen, without having systemic effects, such as slowing mental function. Later, pain medications can be given by mouth.
13. Connect ECG monitor and oxygen saturation monitor. If abnormal inform doctor

14. Maintain the patency of CVP line and measure two hourly.
15. Check the drain site for soakage and measure the amount of drainage and record its color and consistency. Change the dressings if ordered.
16. Change the position and give back care every two hourly to prevent bed sore.

## II. Nursing Process

### Assessment

Before surgery the nurse assess the patient's and family's knowledge of postoperative surgical routines and rationale for surgery. The nurse also assesses the patient's nutritional status. After surgery the nurse assesses the patient for complications, such as hemorrhage, infection, abdominal distention, atelectasis and also the nutritional status.

### Nursing Diagnosis

Based on the assessment data, the patient's major nursing diagnosis may include the following:

- Anxiety related to surgical intervention.
- Acute pain related to surgical incision.
- Deficient knowledge about surgical procedure and postoperative care.
- Imbalanced nutrition less than body requirements related to poor nutrition before surgery and altered GI system after surgery.

### Planning and Goals

The major goal for the patient undergoing Whipple's operation may include reduced anxiety, increased knowledge and understanding about the surgical procedure and postoperative care optimal nutrition and management of the complications that can

interfere with nutrition, pain relief avoidance of hemorrhage.

## Nursing Intervention

### 1. Reducing Anxiety

The nurse encourages the patient to verbalize fears and concerns and answer the patient's and family's questions. The nurses should be available there to support and further explanations .

### 2. Relieving Pain

After surgery analgesics may be administered as prescribed to relieve pain and discomfort. It is important to provide adequate pain relief so that the patient can perform deep breathing coughing exercise, turn from side to side and ambulate. The nurse assesses the effectiveness of the analgesics intervention and consults with other members of the team if pain is not adequately controlled. Every effort will be made to minimize the discomfort and keep it bearable. The physicians and nurses will be monitoring the level of pain control frequently. When he or she is back on a normal diet you will be converted to oral pain relief.

### 3. Drain Tubes and IV Lines

Patient will have a number of plastic tubes following surgery. They will be removed at various time following his or her surgery under the direction of the surgeon.

1. IV lines will be placed in patient's arm and neck under anesthesia to provide him with fluids and pain relief after surgery.

2. A urine catheter will be placed in bladder so he or she won't have to get up to pass urine.

3. Abdominal drain tubes are two or three soft plastic drains coming out of patient's abdomen, placed around the pancreas to drain any fluid ,

bile or pancreatic juice so it doesnot collect in abdomen.

4. A stomach or small bowel feeding tube is a double barrelled tube that sits on patient's small bowel and emerges through the skin . It has the dual function of draining fluid from stomach while feeding his or her small bowel with high energy food . This tube is not used in all cases . The surgeon will decide on this .

#### **4. Eating**

Patient will not have anything to eat or drink for the first several days after surgery. An intravenous infusion will provide with the necessary fluids. You will have a nasogastric tube (NG) in pt's nose which will remove the stomach contain until stomach and intestine recover. A feeding tube (also called a jejunostomy tube) may be inserted to help with feeding after the surgery. The surgeon will let patient know when be or she be able to eat .

#### **5. Urination and Bowel Movements**

During the first few days after the surgery, the tube placed in bladder will drain urine. Patient will probably not have a bowel movement until several days after surgery.

#### **6. Activity**

Patient can expect with nurse and physiotherapist to help him to get out of bed on the first day after surgery. Patient will be able to walk short distances even with all tubes and intravenous lines. As each day passes the tolerance for walking and sitting in a chair out of bed will increase. This is extermly important to prevent pneumonia, clots in the legs and loss of general condition. While in hospital to prevent clots patient will have an injection of heparin twice a day under the skin for the same reason.

#### **7. Incision**

Patient can expect to have a bandage over his incision for the first several days. The surgeon will remove the dressing at the apporiate time . It is quite common to have a small amount of leakage around the wound. Usually stitches will be dissolvable and will not have to be removed.

#### **8. Length of Stay in Hospital**

On average most patients will expect two to three week hospital stay. The length of an individual patient's stay will differ greatly. Some stay shorter, some much longer. You will not be discharged before patient can walk unaided and care for yourself.

#### **10. Teaching on Self Dietary Management**

Because patient may experience bile reflux, dumping syndrome and vitamin deficiencies which affect the patient's nutritional status nursing intervention includes proper dietary instructions . The following teaching points are emphasized:

- To delay stomach emptying and dumping syndrome, the patient should assume a low folwer's position during meal time and after the meal the patient lie down for 20 to 30 minutes.
- Antispasmodics as prescribed also may aid in delaying the emptying of the stomach.
- Fluid intake with meal is discouraged, instead fluids may be consumed up to an hour before and one hour after meal.
- Meals should contain more dry items than liquids.
- The patient should eat low carbohydrates and also avoid concentrated sources of carbohydrates.

- The patient should eat smaller but frequent meals.
- Dietary supplements of vitamins and medium chain triglycerides may be prescribed.

### Evaluation

#### Expected Patient Outcomes

I. Expected patient outcomes include the following

Reports decreased anxiety express fears and concerns about surgery.

II. Demonstrates knowledge regarding surgery by discussing the preoperative and the postoperative care.

III. Attains optimal nutrition by:

- a. Maintain a reasonable weight
- b. Tolerating six meals per day
- c. Not experiencing dysphagia, gastric retention, bile reflux, dumping syndrome

IV. Attains a optimal level of comfort

V. Exhibits no complications.

III. Health Education During Discharge

Follow up: Ask patient to see the doctor if following problems occur

- Develop a fever
- Develop diarrhoea, vomiting or can not eat properly
- Develop an unusual degree of pain
- Become jaundiced(yellow eyes, dark urine)

Wound scar becomes red and painful and has smelly discharge. ,

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