



## Procedure Information Sheet

### Introduction to pancreas

Pancreas is located in the upper part of the abdominal cavity. The pancreatic head is surrounded by the C-shaped duodenum. Pancreatic duct and common bile duct join together in the pancreatic head to drain pancreatic juice and bile into duodenum at an opening called Ampulla of Vater. The functions of pancreas include secretion of digestive enzymes and hormones such as insulin which regulates blood glucose level.

### Indications of Whipple operation

- Benign or malignant pancreatic tumor
- Benign or malignant distal bile duct tumor/stricture
- Benign or malignant tumor of Ampulla of Vater
- Benign or malignant tumor of duodenum

### The Operation / Procedure

The operation is performed under general anaesthesia. An incision of the upper abdominal wall is made. The pancreatic head, duodenum, distal bile duct and gallbladder will be resected, followed by anastomoses of the pancreatic duct, proximal bile duct and stomach to jejunum (small bowel).

### Before the Operation / Procedure

1. Patient is usually admitted one day before operation.
2. Doctor should have explained about nature of operation and possible risks and complete the consent form for the operation.
3. Patient may need physical check-up or examination such as blood tests, urine tests, electrocardiogram and X-ray of chest.
4. Pre-operative anaesthetic assessment will be performed by anaesthetist about the anaesthetic management, nature of anaesthetic and possible risks, and anaesthetic consent form will be completed.
5. May need bowel preparation such as rectal suppository or enema one day before operation.
6. May need hair clipping of the abdominal skin
7. May need skin preparation, bathing/shampooing and cleaning the umbilicus to prevent wound infection.
8. Keep fast for 6 - 8 hours before operation.
9. Take off underwear, remove denture, contact lens and jewellery (including hair pins, necklace, ear rings and ring etc.) then change to operation gown and cap.
10. Empty bladder before transfer to Operation Theater.
11. May need pre-medications, prophylactic antibiotics and intravenous infusion.

### After the Operation / Procedure

1. Usual management after operation
  - 1.1 May need transfer to intensive care unit or high dependency unit for closed observation after general anaesthesia, depending on patient's condition.
  - 1.2 May feel mild throat discomfort and sputum retention due to intubation. Please use your hand to protect the abdomen wound if you want to expel the sputum; may need chest physiotherapy and deep breathing and coughing exercise.
  - 1.3 May need to use "Patient Controlled Analgesic" therapy for pain relief in the early postoperative period. Intravenous and oral analgesics will be provided for pain relief.
  - 1.4 Patient will be kept fasting immediately after surgery but will be given intravenous fluid and if necessary parenteral nutrition; nasogastric tube is usually inserted to keep the stomach empty.
  - 1.5 After general anaesthesia, you may feel tired, nausea or vomiting; inform nurses if severe symptoms.
  - 1.6 A urinary catheter is inserted; the catheter will be removed after operation depending on your recovery rate.
2. Wound care
  - 2.1 Wound will be covered by sterile dressing.
  - 2.2 Keep the wound dressing clean and dry, abdominal wound stitches or staples will be removed on day 7 to day 14 post-operatively.
  - 2.3 There may be tube/drains such as nasogastric tube, abdominal drain and urinary catheter, avoid excessive movement which may pull out/twist the catheters.

#### Patient's Label

Patient Name: \_\_\_\_\_  
Hospital No: \_\_\_\_\_  
Episode No: \_\_\_\_\_



2.4 Drain and tube would usually be orderly removed on day 2 - 7 post-operatively depending upon the progress of recovery.

2.5 Please take the analgesic prescribed by doctor for relief of wound pain.

3. Diet

Patient will be kept fasting for the first few days after surgery. Oral intake can be gradually resumed (fluid, congee or soft diet) when bowel function returns and doctor is satisfied with healing of the anastomoses. When started on diet, you may try frequent small meals to alleviate some common symptoms such as poor appetite, bloating, indigestion and other gastrointestinal symptoms. Digestive enzymes may be prescribed to assist digestion.

4. Activity

4.1 In first 24 - 48 hours after operation, you can have some minor activities, use your hand to protect the wound when get up in bed. Move your legs even in the bed to reduce risk of deep vein thrombosis

4.2 Early mobilization is encouraged. You should increase daily activity gradually after the operation according to doctor's instruction and resume normal activities as tolerated.

4.3 You should avoid lifting heavy objects and don't take more than two shopping bags for 4 - 6 weeks.

4.4 Restrict to touch too height or too low drawer and to avoid bending or extending the body excessively.

4.5 May need 1 - 3 months for full recovery.

5. Follow up

Please follow-up according to surgeon's suggestion.

**Risk and Complication**

1. Complications of general anaesthesia: (rare but may induce permanent injury or be fatal)

1.1 Cardiovascular complications: myocardial infarction, myocardial ischemia, stroke, deep venous thrombosis, pulmonary embolism.

1.2 Respiratory complications: pulmonary atelectasis, pneumonia, asthmatic attack, chronic obstructive airway disease attack.

1.3 Renal failure

1.4 Allergic reaction and anaphylactic shock.

\*\* For any enquiry of the possible complications of anaesthetic, please contact your anaesthetist.\*\*

2. Procedure related Complications:

2.1 Pancreatic leak, bile leak or gastric leak from the anastomoses

2.2 Serious bleeding

2.3 Intra-abdominal collections, wound infection or septicemia.

2.4 Delayed gastric emptying or intestinal ileus

2.5 Malabsorption

It is impossible to mention all the possible complications that may happen after the operation. The above are the most important and common complications which may occur. Serious complication can be fatal. Before operation, patient must acknowledge and accept the fact that no matter how ideal the situation and how smooth the operation may be, these complications may occur. Blood transfusion may be needed for bleeding. You may require another operation to deal with the complications such as organ injury, bleeding, anastomotic leakage or intra-abdominal infection after operation. This is an ultramajor operation with a chance of mortality around 2 - 5 %, depending on complexity of the operation and patient's general condition.

**Disclaimer**

This leaflet only provides general information pertaining to this operation / procedure. While common risks and complications are described, the list is not exhaustive, and the degree of risk could also vary between patients. Please contact your doctor for detailed information and specific enquiry.

Reference: Mayo Clinic

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Patient Name: \_\_\_\_\_  
Hospital No: \_\_\_\_\_  
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Patient's Signature: \_\_\_\_\_ Date: \_\_\_\_\_