IHH Healthcare

Minimally Invasive Whipple Surgery

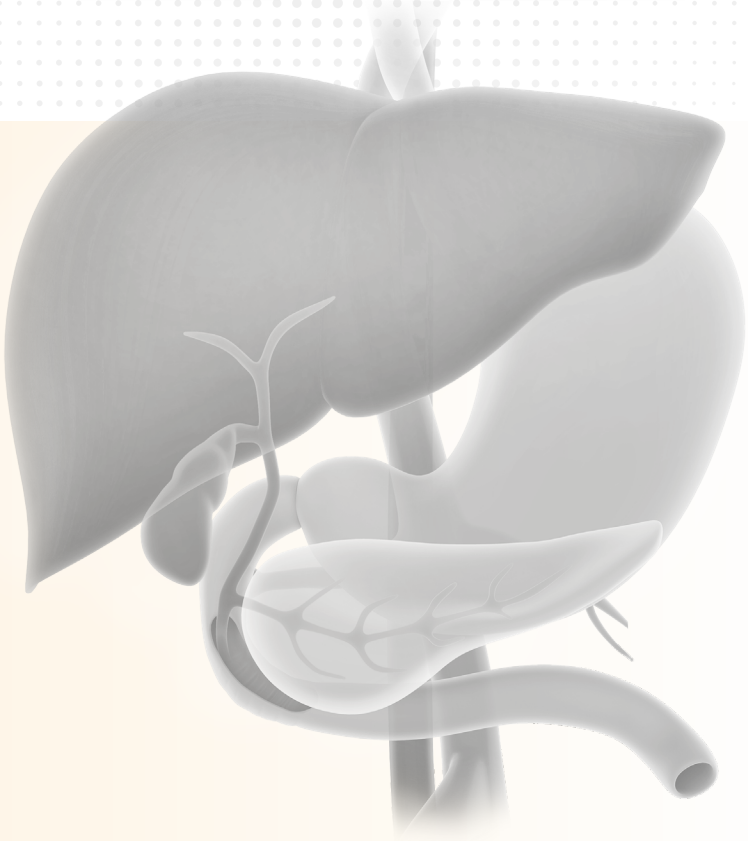
(MIS Pancreaticoduodenectomy)

KEY PROCEDURE HIGHLIGHTS

1. The **only potentially curative surgery** for cancers of the head of pancreas, lower bile duct and duodenal, and proven to **extend long term survival**.[4]

2. Highly complex and high risk procedure requiring **advanced, specialised surgical expertise** for pre-, intra-, and postoperative management.[1,4]

3. **Growing evidence in the use of MIS and robotic techniques** on feasibility, safety, surgical and oncologic efficacies.[2,5]

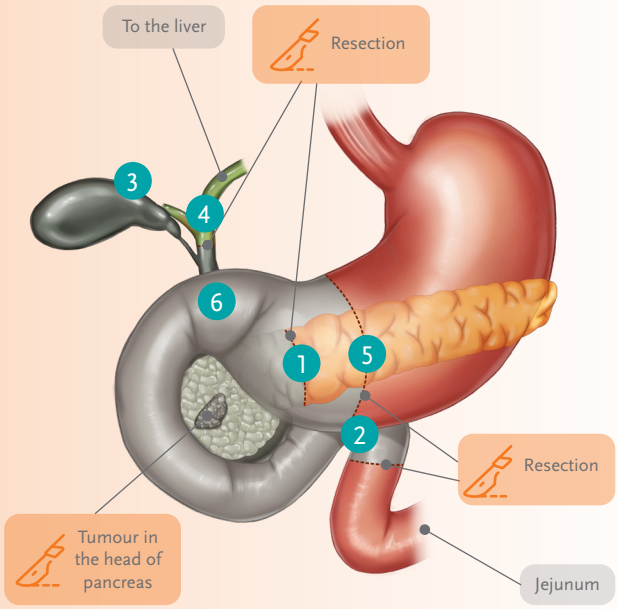


MINIMALLY INVASIVE WHIPPLE SURGERY (MIS WHIPPLE)

Whipple surgery is the surgical treatment of choice to stop the growth of pancreatic tumour and its spread within the head of the pancreas.

In MIS Whipple, the procedure is performed through several small incisions in the abdominal wall, compared with a long midline or rooftop incision in open surgery. Hence, MIS Whipple results in shorter recovery time and hospital stay, less blood loss and post-operative pain, and better cosmetic outcome.

During Surgery

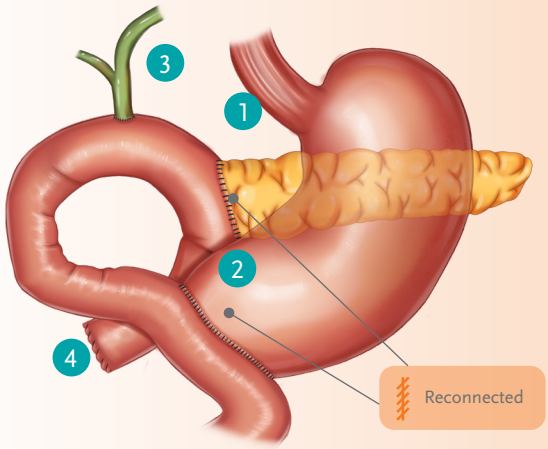


MIS Whipple is a complex surgery which involves resection of nearby blood vessels and:[1]

1. head of the pancreas
2. duodenum
3. gallbladder
4. part of the bile duct
5. a small portion of the stomach (in some cases)

In the case of small tumour(s), the stomach 5 and pylorus 6 can be conserved with the pylorus-preserving Whipple surgery.[1,3]

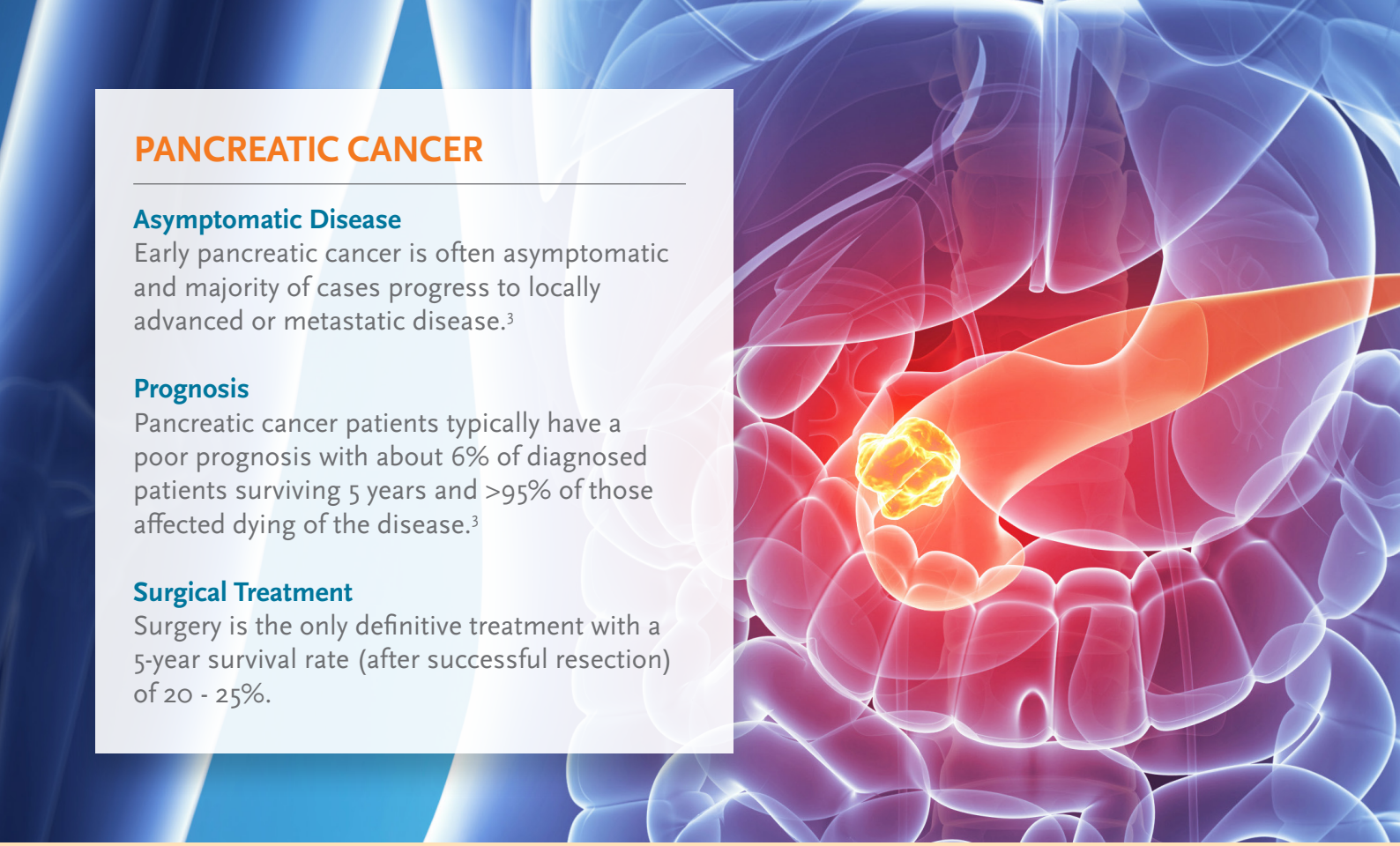
After Surgery



After resection, organ parts are reconnected to the jejunum to restore normal digestive function:

1. Shortened pancreas: Allow drainage from remaining pancreas
2. Stomach: Allow drainage into the small bowel
3. Hepatic duct: Allow drainage from the liver
4. Jejunum: Sealed at the end

Patients' recovery progress and signs of infection or complications will be monitored closely for about 2 weeks before they can be discharged.



PANCREATIC CANCER

Asymptomatic Disease

Early pancreatic cancer is often asymptomatic and majority of cases progress to locally advanced or metastatic disease.[3]

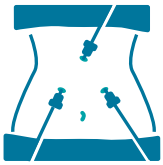
Prognosis

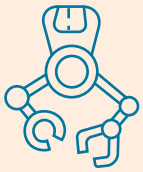
Pancreatic cancer patients typically have a poor prognosis with about 6% of diagnosed patients surviving 5 years and >95% of those affected dying of the disease.[3]

Surgical Treatment

Surgery is the only definitive treatment with a 5-year survival rate (after successful resection) of 20 - 25%.

BENEFITS OF MIS WHIPPLE OVER OPEN SURGERY

		
Open Surgery	**MIS Whipple**	**Benefits**
Long midline or rooftop incision	Several small incisions	Reduced infection risk, less pain, minimal scarring and less blood loss
LOS: 10 to 14 Days including 2 to 4 days in HDU/ICU	**LOS: 8 to 12 Days** including 2 to 4 days in HDU/ICU	Shorter hospital stay



Robot-assisted Whipple (advanced form of MIS or laparoscopic surgery) has been proven to be **safe and feasible**.[2,5]

Robotic surgery offers superior benefits of **precision** in manoeuvring through the patient's body, and accuracy in resecting and suturing of organs to minimize procedure complications.

PATIENT SELECTION

MIS Whipple is recommended for patients with the following conditions. However, only about 10 - 20% of the patients are amenable to surgical treatment at the time of diagnosis.[4]

- Pancreatic head cancer (confined to head only or involving portal vein)
- Bile duct cancer
- Duodenal cancer
- Duodenal and Pancreatic Neuroendocrine Tumours (PNETs)
- Other tumours or disorders involving the pancreas, duodenum or lower part of the bile duct

REFERENCES

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5. Lai EC, Yang GP, Tang CN. Robot-assisted laparoscopic pancreaticoduodenectomy versus open pancreaticoduodenectomy – A comparative study. *International Journal of Surgery*. 2012;10(9):475-479. doi:10.1016/j.ijsu.2012.06.003

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