

## What happens after surgery?

- ◆ The patient is nursed in the ICU and cared for by ICU doctor/ anesthetist/ nurses. Patients will return to the normal ward after his/ her condition stabilizes after several days of observation in the ICU.
- ◆ Pain killers are given to the patient to control the pain after surgery.
- ◆ Patients are allowed to eat after being seen by the surgeon.
- ◆ Antibiotics may be given or continued if there are elements of infection.
- ◆ A urinary tube may be left in place temporarily.
- ◆ A temporary tube or "drain" is placed in the area of surgery which may be seen coming out of the body
- ◆ The wound is usually examined 3 days after surgery. Stitches may need to be removed (depending on the stitches used by the surgeon).
- ◆ The patient will be seen again at the clinic for follow-up after returning home.

## When can I return to work or back to normal activities ?

- ◆ Patients who undergo liver surgery will have to stay in hospital for at least 1 to 2 weeks for observation.
- ◆ Sick leave will be granted to patients who requires it.
- ◆ Patients who exercise actively can return to normal activity 2 to 3 months after surgery.

## Other matters arising:

- ◆ Patients can be refer back to their surgeons shall there be any questions or queries. You can contact: -
  1. Dr. Yoong Boon Koon
  2. Dr. Koh Peng Soon
  3. Dr. Koong Jun Kit
- ◆ The Hepato- Pancreatico- Biliary (HPB) surgical unit , UMMC is always willing assist patients at any time.
- ◆ The HPB Surgical Clinic is held every Monday starting 2 pm at: -

Tingkat 1,  
Klinik Pembedahan,  
Menara Utama,  
Pusat Perubatan Universiti Malaya,  
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### Disediakan Oleh

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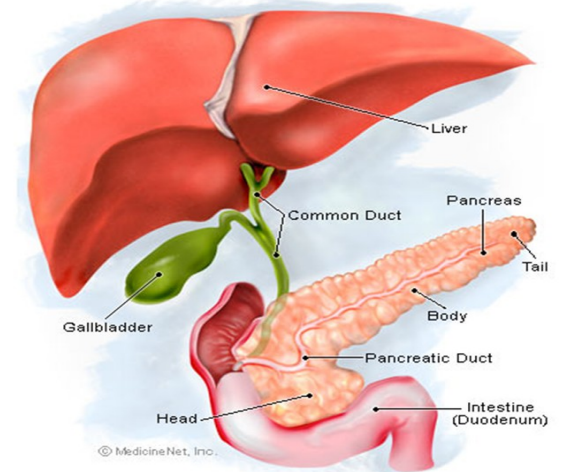
### Sebarang Pertanyaan Sila Hubungi

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# LIVER SURGERY

## Patient Information

## Function of the liver

- ◆ The liver is the largest organ in the body.
- ◆ Function of the liver includes metabolism and sugar control, detoxification of drugs, produces bile for fat digestion, synthesizes proteins, fight infections and blood contamination, and produce blood clotting factors.
- ◆ When suffering from liver disease, these functions will be affected

## Liver diseases that require surgery:

- ◆ Surgery are often performed for cancer cases. Noncancerous cases may also undergo liver surgery.
- ◆ Liver cancer or "hepatocellular carcinoma" - cancer which originates from the liver and is closely related to "cirrhosis" of the liver usually results from infection (Hepatitis B and C) or alcohol abuse.
- ◆ "Liver metastases" are cancer originating in other organs that has spread to the liver. It usually originates from bowel cancers but could also originate from breast and kidney cancers. The ability to perform surgery depends on the size and number of tumor that has spread to the liver.
- ◆ Cancer of the bile ducts or "cholangiocarcinoma" - the type of surgery depends on the type and stage of the cancer.
- ◆ Liver surgery can also be offered to cases of non-cancerous growths such as "haemangioma", "liver cyst", focal nodular hyperplasia (FNH) "and so on.
- ◆ Although surgical care can be offered, alternative treatments should be discussed with the patient so that the most optimal treatment can be given to patients.

## The purpose of liver surgery:

- ◆ The main objective in liver surgery primarily for cancer cases is an opportunity for patients to fully recover from liver cancer.
- ◆ To prevent the cancer from spreading to other parts of the body.
- ◆ To provide symptom relieve from the disease

## Matters to be considered before liver surgery:

- ◆ Patients need to understand that liver surgery is a major surgery where the risk of death during and after surgery is expected at around 5% and the complications that may occur are expected to be approximately 30%.
- ◆ Intensive care unit (ICU) admission are required for the surgery. If there are no ICU beds, surgery will need to be postponed
- ◆ The amount of healthy liver should be sufficient in order to proceed for surgery
- ◆ Liver function should be normal
- ◆ The patient's general health should be optimized and is not weak
- ◆ "Bowel preparation" - you may be given drugs that cause you to purge to cleanse the small and large intestine before the day of surgery.
- ◆ Other diseases such as hypertension and diabetes should be well controlled before surgery.
- ◆ Patients who smoke should stop smoking several weeks before surgery
- ◆ Patients who are taking blood thinning medications should stop taking the medications several days before the day of surgery.

## Tests necessary before the surgery:

- ◆ Blood tests (eg Hepatitis B / C status, "tumor markers", etc.)
- ◆ Radiological investigations such as "CT scan" or "MRI", "PET" scan may be done if necessary.
- ◆ "Indocyanine green (ICG)" - (test not available in UMMC at the moment)
- ◆ "Electrocardiogram (ECG)" and "Echocardiogram" - a referral to the Cardiology Unit may be required for certain cases.
- ◆ "Lung function test" - to assess the condition of the lungs.
- ◆ Earlier referral to the anesthetic doctor may be required for certain cases.

## Types of Liver surgery :

- ◆ Liver surgery can be done "Open" or "Laparoscopic".
- ◆ Laparoscopic surgery benefit patients by earlier recovery and less pain after surgery compared with the open method. However, this type of surgery can only be done for certain cases. It depends on the state of the liver and the liver tumor location.
- ◆ Open "Hepatectomy" or liver resection is more commonly performed in liver surgery.
- ◆ The gallbladder is usually removed during the surgery.

## Complications or risks that may occur during and after surgery:

- ◆ Patients should understand that risks and complications can occur in any type of surgery especially in major surgeries such as liver surgery.
- ◆ Complications in anesthesia. (will be discussed in detail by the anesthetic doctor)
- ◆ Complications or risks that may occur in liver surgery includes : -
  1. "Acute liver failure," where the liver function is affected after surgery.
  2. Injury to the bile ducts
  3. Leakage of bile that collects within the body to become a "biloma". May require further treatment.
  4. Injury to nearby organs such as the stomach, adrenal gland, diaphragm and intestines.
- ◆ Other complications or risks that may occur include allergy to anesthesia, antibiotics or contrast administered; bleeding during surgery or over the wound; infection of the wound, the lungs, the bladder, or the intravenous (IV) lines; blood clots in the legs or " Deep Vein Thrombosis "; chronic pain over the wound or surgical area; heart attack or " stroke ", adhesions, hernia and so on.