Gleneagles Hospital
HONG KONG
港怡醫院

Hosp No.	:	HKID No.:	
Case No.	:		
Name	:		
DOB	:	M / F	
Adm Date	:		
Contact No.	:		

Procedure Information Sheet – Adrenalectomy (Open / Laparoscopic)

1. Introduction

1.1. An adrenalectomy is an operation to remove one or both of the adrenal glands. The adrenal glands are located above the kidneys.

1.2. The major role of the adrenal glands is to release hormones into the body. The main hormones released are:
- 1.2.1. Stress related hormones including cortisol, noradrenaline and adrenaline
- 1.2.2. Hormones that regulate metabolism
- 1.2.3. Hormones that affect immune system function
- 1.2.4. Sex hormones, e.g. androgens
- 1.2.5. Hormones for saltwater balance, e.g. aldosterone

1.3. The indications for adrenalectomy are:
- 1.3.1. The tumor is found to make excess hormones
  - 1.3.1.1. Too much stress hormone, leading to malignant hypertension
  - 1.3.1.2. Cushing syndrome with high level of cortisol
  - 1.3.1.3. Crohn's syndrome with high level of aldosterone
- 1.3.2. The tumor is large in size (more than 4-5 cm)
- 1.3.3. Malignancy

1.4. An adrenalectomy can be done via open or laparoscopic approach.

1.5. The surgery is performed under general anesthesia.

1.6. The excised adrenal gland(s) will be sent to a pathologist for further analysis using a microscope.

2. Procedural Preparation

2.1. A Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) scan may be ordered by the doctor in order to see exactly where the adrenal mass is located.

2.2. The reason of operation, procedure and possible complications will be explained by the surgeon and consent form will be signed before operation.

2.3. Pre-operative anesthetic assessment will be performed. The anesthetic management and its possible risks will be explained by the anesthetist with consent for anesthesia signed.

2.4. Please inform doctor if you are pregnant or on anti-coagulants.

2.5. Avoid smoking as this will help recovery process.

2.6. Compression stockings may be needed to lower the risk of deep vein thrombosis.

2.7. Do not eat or drink for at least 6 to 8 hours before the operation.

3. Procedure

3.1. Laparoscopic Adrenalectomy
- 3.1.1. Laparoscopic adrenalectomy allows for quick recovery, minimize post-operative complications and pain.
- 3.1.2. Laparoscopic adrenalectomy is not recommended for very large tumors and those with a high likelihood of malignancy.
- 3.1.3. The decision to perform an open or laparoscopic operation will be made on an individual basis by the surgeon.
- 3.1.4. In some circumstances, operations that are started laparoscopically will be converted to an open operation. The common reasons are:
  - 3.1.4.1. The tumor being stuck to surrounding structures
  - 3.1.4.2. Signs of malignancy
  - 3.1.4.3. The tumors are too large to be safely removed laparoscopically
- 3.1.5. Laparoscopic adrenalectomy can be done by using one of three different techniques:
  - 3.1.5.1. Transabdominal (i.e. through the belly)
  - 3.1.5.2. Retroperitoneal (i.e. through the back)

3.1.5.3. Robotic

3.1.6. Under general anaesthesia, suitable operative position will be placed according to different approaches.

3.1.7. In general, 3 or 4 small incisions (less than an inch each) are made below the rib cage to create operating ports. The cavity is then inflated with carbon dioxide gas.

3.1.8. The tumor will be visualized and excised by laparoscopic instruments via the operating ports.

3.2. Open Adrenalectomy

3.2.1. Open adrenal surgery can be done through three types of approaches:

3.2.1.1. Anterior (i.e. through the belly)

3.2.1.2. Posterior (i.e. through the back)

3.2.1.3. Thoraco-abdominal (i.e. through the chest and abdomen)

3.2.2. In general, an incision will be made for excellent exposure of organs. So that other organs can be removed with the adrenal tumor if necessary.

3.2.3. The shape and location of incision lines depends on different approaches.

4. Recovery Phase

4.1. An open adrenal surgery will cause more pain post-operatively and require better pain control method and dosage.

4.2. In some cases, intravenous narcotics are given via a patient controlled anesthesia (PCA) delivery system. This system is an intravenous pump with a button that can be pressed to get pain medication when needed.

4.3. When diet is resumed and the pain is under good control, intravenous medications will be changed to oral medications.

4.4. Antibiotic cover maybe required during the post-operative period as prophylaxis.

4.5. Resume diet slowly as tolerated and as per doctor's ordered.

4.6. The appropriate time to get out of bed and return to normal activities will be advised by the doctor.

4.7. Discharge from the hospital may be as early as the day after surgery for those having a laparoscopic procedure.

4.8. For open adrenalectomy, the hospital stay may be up to 5 to 7 days and oral intake may be delayed for 2 to 3 days.

5. Possible Risks and Complications

5.1. Overall, complications rates are significantly higher in open surgery compared to laparoscopic procedures. However, every operation carries certain risks include:

5.1.1. Blood clots in the legs which can travel to the lungs causing pulmonary embolism

5.1.2. Damage to other nearby organs e.g. spleen and pancreas

5.1.3. Chest Infection

5.1.4. Heart attack or stroke

5.1.5. Wound infection or Bleeding

5.1.6. Allergy reaction

5.1.7. Loss of bowel function

5.1.8. Incomplete wound healing

5.1.9. Scarring

5.2. The specific complication for this procedure is adrenal insufficiency, where the other adrenal gland is not making enough cortisol because it has been suppressed by the tumor or in patients who have had bilateral adrenalectomy. Patients in this situation may need steroid medication for up to two years following surgery and for those who have had both adrenals removed, will require lifelong steroids.

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6. Remark

6.1. This information sheet provides general information pertaining to this operation or 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.

7. References

7.1. National Health Service (NHS), Queen Elizabeth Hospital Birmingham. Patient Information Leaflet: Adrenalectomy.

7.2. The American Association of Endocrine Surgeons. Patient Education Site: How is Adrenal Surgery Performed?

I acknowledged the above information concerning the operation or procedure. I have also been given the opportunity to ask questions and received adequate explanations concerning the condition and treatment plan.

Patient/ Relative Signature: _____

Patient/ Relative Name: _____

Date: _____