



Procedure Information Sheet

Introduction

A craniotomy is a surgical removal of a piece of skull bone (bone flap) to expose the brain for correcting the problem. The bone flap is temporarily removed for the procedure on the brain. It will be replaced and secured after the operation.

Indication

- Brain tumors
- Aneurysms
- Hemorrhage or blood clots within the skull
- Arteriovenous malformation (AVM)
- Brain abscess
- Fractured skull
- Head Injury to reduce intracranial pressure
- Epilepsy
- Parkinson's disease

The Operation / Procedure

1. Operation to be done under general anaesthesia.
2. A urinary catheter will be inserted by nurse to monitor your condition.
3. There are various types of incisions that may be used, depending on the affected area of the brain.
4. A medical drill will be used to make burr holes in the skull and elevating a bone flap.
5. The bone flap will be removed and saved.
6. The doctor begins to proceed the operations such as removing tumor or blood clots or removing of brain tissue for biopsy etc.
7. Once the operation is completed the surgeon will close up the wound.
8. The bone flap will be secured using sutures or wires.
9. The skin incision will be closed with sutures or staples.
10. A sterile dressing will be applied over the incision.

Before the Operation / Procedure

1. The surgeon will explain the operation management, nature of operation, possible risks and complications. Read through and understood this information sheet and complete the inform consent form.
2. Patient may need physical check-up or examination such as blood tests, urine tests, electrocardiogram, or imaging if necessary.
3. To be interviewed by anaesthetist and explain the anaesthesia management, possible risks and complications. Read through and understood the information sheet of general anaesthesia and sign the consent of anaesthesia.
4. Neurological examinations will be performed by medical staff before the operation.
5. The areas around the surgical site will be removed of hair to prevent infection.
6. Bathing and shampooing one day before operation.

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7. Keep fast for at least 6 - 8 hours before the operation to avoid vomiting and risk of aspiration.
8. Take off underwear, remove denture, contact lens and jewellery (including hair pins, necklace, ear rings and rings etc) then change to operation gown and cap.
9. You may be given pressure stocking to prevent blood clot formation at the legs.
10. You may receive a pre-medication.

After the Operation / Procedure

1. After the operation, the patient may need to be transferred to intensive care unit for closely monitored.
2. Frequent simple neurological examinations will be performed by the medical staff to test the neurological functions and to make sure your body systems are functioning properly after the operation. You will be asked to follow a variety of basic commands, such as moving your arms and legs. The strength of your arms and legs will also be tested. Your pupils will be checked with a flash light, and you will be asked questions such as your name, the date, where you are, etc).
3. Bed rest and the head of the bed may be elevated as doctor order to prevent swelling of your face and head.
4. The facial and eye swelling or bruise will be gradually subside.
5. Depending on your condition, kept fasting immediately after surgery but will give intravenous fluid and resume diet later.
6. You may have wound drain in incision site for drainage of fluid.
7. You may have sequential compression devices placed on your legs while you are in bed, it helps prevent blood clots from forming by passively compressing the legs veins to keep blood moving.
8. The incision and head may ache, especially with chewing, coughing or turning the head. Take a pain killer as prescribed by your doctor.
9. A physiotherapist may be asked to evaluate your strength, balance and mobility, and give you suggestions for exercises to do in the hospital and at home.
10. Encourage deep breathing exercise to help re-expand the lungs and prevent pneumonia.
11. The urinary catheter will be removed when you are able to get out of the bed.
12. Keep the incision cleaned and dry, the sutures or staples will be removed in 7-10 days.

Advice on discharge

1. Regular follow-up is need after you are discharged from the hospital.
2. Take medication as prescribed and don't adjust dose by yourself, and monitor the side effects at home.
3. You should gradually increase your physical activity as tolerated.
4. Not to lift heavy items in order to prevent strain on your surgical incision.
5. To prevent fall or other incident at home.
6. Notify your doctor or return to hospital to report any of the following:
 - 6.1 Decrease general condition, speech difficulty
 - 6.2 Vomiting, headache, convulsion, limbs numbness and weakness
 - 6.3 Signs of wound infection such as redness, swelling, pain, fever or exudate etc

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Risk and Complication

Some more general complications include:

- 1. Infection: wound infection, meningitis, subdural empyema, bone flap infection, pneumonia
- 2. Haemorrhage (bleeding): wound or epidural haematoma, intracerebral haemorrhage
- 3. Thrombus: Deep Vein Thrombosis
- 4. Unstable blood pressure
- 5. Epilepsy
- 6. Muscle weakness

The following additional complications are rare and generally related to the locations of the operative site.

- 1. Visual or hearing problem
- 2. Speech or swallowing difficulty
- 3. Facial palsy or numbness
- 4. Abnormal balance or coordination
- 5. Coma

There may be other risks depending on your specific medical condition. You may require another operation to deal with the complications such as organ injury, bleeding or leakage after operation. Be sure to discuss any concerns with your physician prior to the procedure. For risks related to anaesthesia, please refer to general anaesthesia information sheet.

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

- 1. Johns Hopkins Medicine: Craniotomy (2019)
- 2. Mayfield Brain and Spine: Craniotomy (2018)
- 3. University Hospital Southampton, Patient Information Fact Sheet: Craniotomy for Brain Tumour Removal (2019)

Patient's Signature: _____ Date: _____

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