

INFORMATION ON ANESTHESIA

I. Type of Anesthesia technique

1 General Anesthesia with or without a breathing tube

1.1 Technique

Medicine is administered through the IV line to render you unconscious. A breathing tube may be placed into your windpipe, or nose after you are unconscious or awake if necessary. Anesthetic gas and oxygen are administered through the breathing tube or mask to keep you unconscious. Alternatively, IV medications can be administered to maintain unconsciousness while breathing oxygen and/or air.

1.2 Expected Result

Total unconsciousness (monitored by an electroencephalography) so that you do not see, hear or feel anything during the surgery with assisted, controlled or spontaneous breathing.

1.3 Specific Risks (non-inclusive):

1.3.1 Common

Pain at the IV site, mouth and/or throat pain, coughing, hoarseness, nausea and vomiting, high or low blood pressure, muscle aches.

1.3.2 Uncommon

Injury to the teeth, gums, mouth, nose, eyes, larynx (voice box), headache, infection at the IV site, breathing stomach contents into the lungs, pneumonia, skin burns, permanent weakness, numbness, pain from a nerve injury or joint stiffness, staying on a breathing machine after surgery with the breathing tube in your windpipe, awareness of what is happening during surgery.

2 Epidural, Spinal, or Caudal Anesthesia

2.1 Technique

Medicine with local anesthetics and/or opioids is administered through a catheter or needle placed into the back that will numb the body.

2.2 Expected Result

Temporary loss of feeling and/or movement to the lower part of the body, abdomen or chest, relief of pain for a period of time after surgery. You may also get medicines to make you comfortable, drowsy and blur your memory.

2.3 Specific Risks (non-inclusive)

2.3.1 Common

Nausea and vomiting, headache, backache, soreness and swelling at the puncture site.

2.3.2 Uncommon

Seizure, permanent weakness, numbness, pain or paralysis from a nerve injury during application or from bleeding, infection, breathing, heart rate or blood pressure impacted.

3 Peripheral Nerve Block

3.1 Technique

Medicine with local anesthetics and/or opioids is administered through a catheter or needle placed near nerves in the arm, leg, chest or abdomen that will numb only those specific parts of the body.

3.2 Expected Result

Temporary loss of feeling and/or movement of all or part of the limb, chest or abdomen, relief of pain for a period of time after surgery. You may also get medicines to make you comfortable, drowsy and blur your memory.

3.3 Specific Risks (non-inclusive)

3.3.1 Common

Soreness or bruising at the puncture site, nausea and vomiting.

3.3.2 Uncommon

Injury to a blood vessel, seizure, permanent weakness, numbness, pain or paralysis from a nerve injury, infection. Lung collapse with specific types of peripheral nerve blocks.

4 Sedation or Monitored Anesthesia Care (MAC)

4.1 Technique

Medicine is administered through the IV line to render you sleepy and less aware during the surgery. You will be semi-conscious.

4.2 Expected Result

Decrease in anxiety and awareness while sleeping or resting during the surgery, less discomfort, fewer side effects and a quicker recovery.

4.3 Specific Risks (non-inclusive)

4.3.1 Common

Nausea and vomiting, Slowed breathing, injury to a blood vessel, feeling pain, being aware.

4.3.2 Uncommon

Respiratory arrest.

II. Notice

Since surgical intervention is necessary to solve the patient's current medical problems, appropriate anesthesia is therefore needed to remit pain and fear during the operation. Although anesthesia provides a more comfortable and safer physical condition under surgical stress in most situations, certain anesthesia-related risks may still happen, particularly in patients with the physical conditions listed below:

1. For patients with active or latent blood vessel disease in the circulating or/and central nervous systems, there are increased chances of an acute heart attack (myocardial infarction) after anesthesia. For example, the risk of a heart attack during or after anesthesia increases in patients with pre-existing coronary artery disease.
2. For patients with active or latent blood vessel disease in the circulating or/and central nervous systems, there are increased chances of a stroke attack (cerebrovascular accident) after anesthesia. For example, the risk of a stroke during or after anesthesia increases in patients with the past history of suffering a stroke.
3. Fever and even lung tissue collapse or pneumonia may happen in patients with upper respiratory tract infection after recovery from the anesthesia, especially in patients who are unable to expectorate adequately.
4. The chance of anesthesia-related adverse events increases remarkably in patients who are seriously ill, consciously disturbed, in shock status, in advanced age with organ dysfunction, or on long-term hemodialysis due to kidney failure. These patients may be requested to stay for a longer period in the operating room, and may even need to be transferred to the intensive care unit.
5. Allergic reaction may develop following administration of anesthetic drugs due to patient's constitutional factors. Furthermore, a very limiting number of patients may experience malignant hyperthermia (a state of extremely high body temperature probably caused by a genetic disorder that is still not fully understood in modern medicine). Transfusion reaction may occur in some patients. Should any of these unexpected reactions happen, further investigation and management will be undertaken.
6. Administration of anesthesia may cause vomiting that results in choking and serious lung infection (aspiration pneumonitis). These serious events are more likely to happen when the stomach is inadequately empty (less than eight hours after the last food intake) or when the stomach is distended. Therefore, purposely conceal of eating or drinking before anesthesia can result in serious consequences.
7. A tube will be placed into the trachea of patients undertaking general anesthesia to ensure unobstructed flow in the respiratory tract. The procedure of placing the tracheal tube (endotracheal intubation) may break the teeth; injure the gums, lips and mouth cavity. The placement of the tracheal tube may also cause sore throat, change in voice, or injuries of larynx and glottis after recovery from anesthesia. Some patients may experience nosebleeds when the tracheal tube is placed through the nose. A larger caliber double-lumen tracheal tube is frequently required for operations in the heart, great blood vessels and

lungs. The placement of these double-lumen tracheal tubes can result in rupture of the trachea or main bronchus.

8. During prolonged anesthesia period or with special positioning of the patient during operation, pressure ulcers or/and injury of peripheral nerves may happen.
9. In some major operations, insertion of catheters into the arteries and central veins, and placement of ultrasound probes into the esophagus are always obligatory. These more invasive interventions may lead to certain complications, such as tissue hematoma, hemothorax, pneumothorax, rupture of the heart and esophagus, and bleeding from the digestive tract.
10. A small amount of patients may experience back pain, headaches, transient or permanent nerve injury after regional anesthesia. In case of prolonged surgical time or ineffective regional anesthesia, the anesthetic plan may switch to general anesthesia.
11. For patients receiving anesthetic techniques of nerve blockade, there are occasional reports of transient or permanent nerve injury. Some patients may experience systemic toxic response resulting from the local anesthetics. In case of ineffective nerve blocking, the anesthetic plan may switch to general anesthesia.
12. Other uncommon adverse responses may also occur.

Statements mentioned above are the potential problems we may be facing during and after the anesthesia procedures. Patient and his/her family are always appreciated to provide the detailed past and current medical problems, history of drug allergy, previous experience of receiving anesthesia, and related family medical history. All the anesthesia procedures, to our knowledge, carry certain levels of risk. However, we will definitely put all our efforts to minimize the anesthesia-related risks and help every single patient to regain his/her health.

Patient and the authorized consentor are always welcome to make inquiries for any additional information and discuss the proposed anesthesia procedures to the anesthesia doctor before operation.