

# Labor Epidural Analgesia in Aiiku Hospital

We provide pain relief (labor epidural analgesia) anytime for 24 hours if the expectant mother requires it. To deepen your understanding of labor epidural, those who are considering labor epidural are required to take the “Labor Epidural Class” which is provided with video (in Japanese) on demand. We also have an outpatient service on labor epidural with English. Please ask for “Labor Epidural Class” at the Obstetrics Outpatient Clinic.

## ◆ Precautions

- **We do not apply labor epidural analgesia for parturients who have implanted device during spine surgery.**
- The following individuals may not be eligible for epidural analgesia for medical reasons. If you have lumbar spine disease and have neurological symptoms such as numbness, have had lumbar spine surgery, are taking medication for anticoagulation or antiplatelet therapy, have abnormalities (eczema, lipoma, etc.) on the skin or subcutaneous area of the injection site. If you have any of the above conditions, you should consult the Anesthesiology Outpatient Clinic. Please contact the Obstetrics Outpatient Clinic.
- In some cases, such as when the mother or fetus is unstable, your doctor may decide that epidural analgesia is not appropriate.
- A minimum of 2 hours fasting is required before epidural analgesia. (Analgesia may be started 2 hours after eating).
- You will not be able to eat or drink freely during the analgesia (up to 2 hours after the analgesia ends). During this time, you can only drink water, tea, sports drinks, and hospital-provided beverages.
- During analgesia there is a risk of falling, so you cannot walk.
- Labor epidural is available 24 hours a day, but staffing levels may be low at night and on holidays, so you may have to wait for analgesia to be administered.
- It may take some time (10 to 40min) for the analgesia to take effect.
- Even if you wish to give birth with labor analgesia, you may give birth without analgesia, depending on the circumstances.
- We will make every possible effort to ensure a comfortable childbirth and to take safety, but we cannot guarantee the results you expect because analgesia is an advanced medical practice. Even if the result does not meet your expectations, the full labor epidural fee will be charged.
- The planned hospital stay may be extended due to treatment for complications.
- Treatment for complications is all done by insurance treatment.
- The cost of hospitalization due to complications is borne by the patient, just like any other medical care.

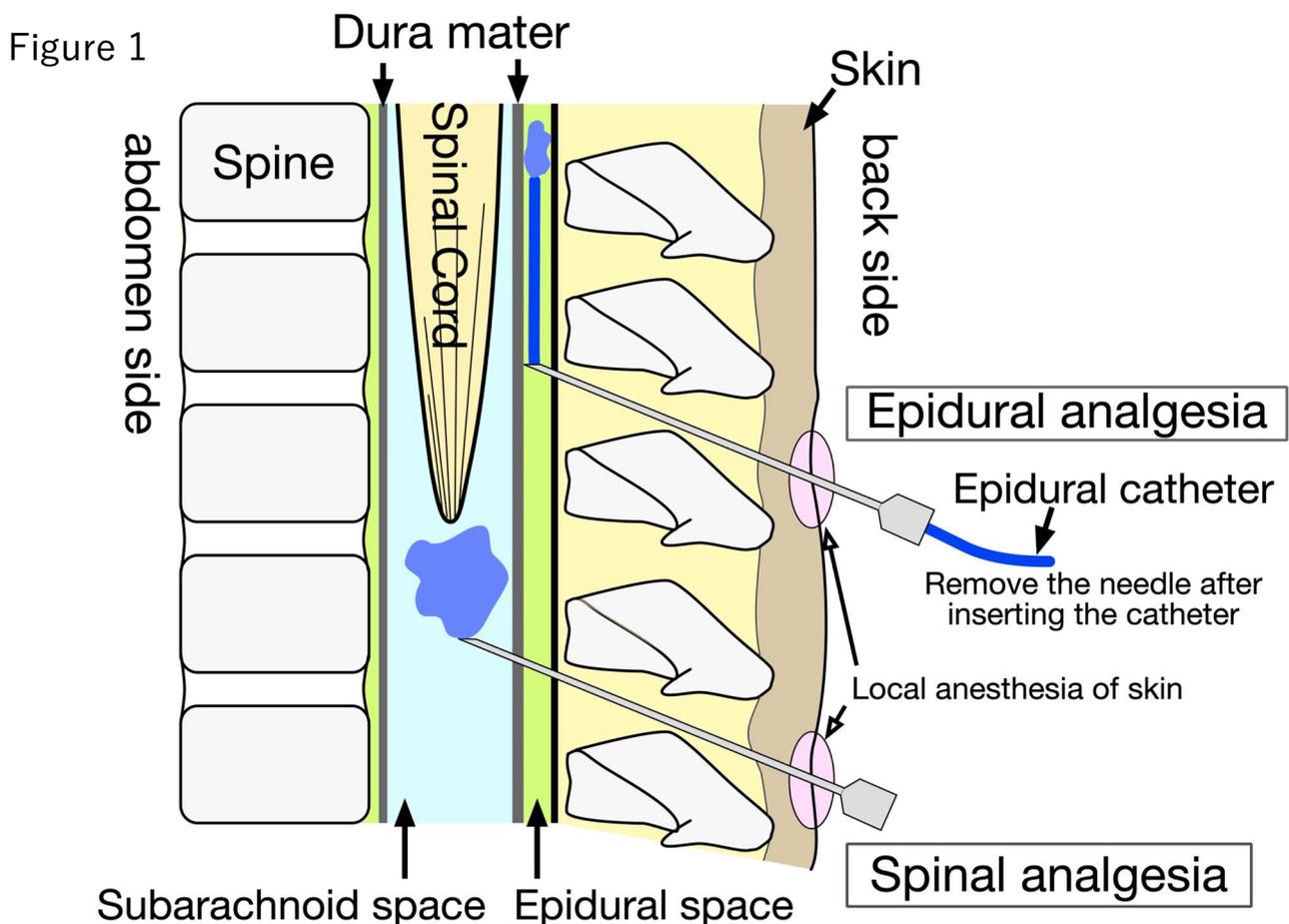
## ◆ Pain relief treatments and procedures

Analgesia (pain relief) is provided by a combination of epidural analgesia and spinal analgesia. In each case, the lower back is injected during the procedure. The procedure for analgesia is chosen according to your situation, but please let us know if you have any requests.

- There is a bundle of nerves called the “spinal cord” in the spine. The area around the spinal cord is filled with fluid called “spinal fluid”, and the surrounding area is covered by a membrane called “dura mater”. (Figure 1)

A method of inserting a needle into the back, inserting a thin tube (epidural catheter) into the “epidural space” outside the dura mater, and infusing anesthetics through the tube is called epidural analgesia. (Figure 1)

The method of injecting anesthetics through a needle into the “subarachnoid space” inside the dura mater is called spinal analgesia. (Figure 1)



- During the injection, your back should be rounded and your knees should be close to your stomach (to spread between your spines). This posture is important for safe analgesia, so we need your cooperation. (Figure 2) Your anesthesiologist will touch your back to check and disinfect the injection site. A local anesthetic is then injected into the skin. You may feel some sharp pain. If the local anesthetic is effective, your anesthesiologist will pierce the epidural needle. If you experience severe pain, numbness, or a running electrical current, please let us know. Please note that it is very dangerous to move your body during the injection.

- When analgesia is started, not only the pain of the birth, but also the sensation from the navel to the toes becomes dull, making it hard to feel pain. Your legs may feel numb because of the dullness, but this is not unusual. It is possible to move the legs, but it may be difficult to put force into it, so we will restrict walking for safety.

If you stay in the same position for a long time, parts of your body (skin, nerves, etc.) that are under pressure in that position can be damaged by compression, just like bedsores. During an epidural, sensation becomes dull and pain is less likely to be felt, making it difficult to notice.

**In order to prevent such injuries due to compression, it is necessary to consciously change your position during labor epidural so that you do not remain in the same position for a long time.**



Figure 2

#### ◆ Advantages of labor epidural analgesia

- The biggest advantage is that the pain of delivery is relieved. Labor epidural may smooth the birth.
- It is said to be useful for the management of blood pressure during delivery for patient with hypertensive disorders of pregnancy.
- The treatment of perineal suturing and bleeding after delivery is painful. But epidural analgesia works well for such pain.
- A catheter placed on your back with epidural analgesia can also be used for anesthesia in an emergency cesarean section. This is said to be useful for some parturients who are expected to have difficulty undergoing anesthesia for an emergency cesarean so that they can give birth with confidence.

#### ◆ Effect on delivery process

- Uterine contractions often weaken with labor epidural, in which case the labor augmentation medication is needed. The medicines for labor augmentation increase the contraction of the uterus. It does not mean that they increase the pain. Labor augmentation drugs are also used for delivery without analgesia, but the proportion of patients who need labor augmentation drugs increases in the case of labor epidural.
- The rate of forceps and vacuum extraction increases with epidural labor because the progress of the delivery tends to stagnate near the exit of the birth canal.
- Labor epidural tends to make the time of labor longer but does not increase the rate of resulting in cesarean section.

- With regard to the timing of starting labor epidural, it was thought that if labor epidural was started after the cervix was 4-5 cm dilated, the delivery would be smooth. More recently, it has been suggested that it is better to start labor epidural when the expectant mother wants it.

The starting time is decided in consultation with the mother, midwife and obstetrician. We can give a labor epidural 24 hours a day, so you can start analgesia at any time of labor.

- For planned delivery (induction of labor) for multipara women, please contact the Outpatient Obstetrics Clinic. We do not recommend planned delivery for primiparas.

The finding that "cesarean section rate does not increase with labor epidural" is based on the principle of induction of analgesia after spontaneous onset of labor. This is not always the case with planned labor (induction of labor).

### ◆ Effects on the baby

- Anesthetics used for epidural or spinal analgesia have been known to have very little effect on the baby through the placenta. During analgesia, the baby's heartbeat is constantly monitored to prepare for any changes.
- After analgesia is well established, the contractions of the uterus may shortly become too strong, which may temporarily decrease the baby's heart rate. This has been shown to be transient and has no effect on your baby's condition thereafter.

### ◆ Effects and Complications on the mother

During labor epidural, you will wear a vital signs monitor, such as a blood pressure monitor, to prevent and detect analgesia complications.

#### ➤ Symptoms that may occur during delivery

- Itching: Mild itching may occur as a side effect of the anesthetics.
- Fever: 20% of parturients with labor epidural develop fever. A number of mechanisms for epidural fever have been hypothesized but are still uncertain. No specific treatments or procedures are performed, but measures such as preventing heat buildup are taken.
- Leg weakness: Occasionally, anesthetics may weaken your legs. We respond by reducing the anesthetics and adjusting the position of the epidural catheter.
- Pain can occur even during labor epidural. We respond by adding an anesthetic, adjusting the position of the epidural catheter, or reinserting the catheter.
- Low blood pressure, discomfort, nausea: If analgesia works over a wider area than usual, your blood pressure may drop or you may feel sickness or uncomfortable. We will always monitor your vital signs, such as your blood pressure. If you feel sick during labor epidural, let us know immediately.

## ➤ Symptoms that may occur after delivery

### ● Urinary retention

If the labor stagnates near the exit of the birth canal and the bladder is compressed for a long period of time, it may make it difficult to feel urination or make it difficult for urine to flow after birth. It is often relieved by the time of discharge, but self-conduction may be necessary after discharge.

### ● Sensory disorder, movement disorder, abnormal sensation

Sensory and motor deficits may remain after the local anesthetic has worn off. It usually improves within a few days, but rarely lasts for months or years.

Although it is difficult to identify the cause of nerve injury, it is said that nerve injury is often caused by prolonged pressure on peripheral nerves running close to the surface of the body. In everyday life, even if nerves are subjected to stimulation, such as compression, there is no problem because the pressure is relieved by changing posture due to pain or numbness. Alternatively, if the sensation is paralyzed by analgesia, you will not feel pain or numbness even if pressure is applied to the nerve. For this reason, it is possible that the state of being pressed will last for a long time and the nerves will be damaged.

On the other hand, the possibility of nerve damage associated with analgesia procedures or side effects of local anesthetics is not zero, but it is said to be rare.

### ● Headache; headache after dural puncture

Spinal fluid leaks from the dura mater after spinal analgesia or when the dura mater is accidentally damaged during epidural analgesia. Usually, this leakage resolves spontaneously. But if it doesn't, the amount of spinal fluid can decrease and headaches can occur. It is often a symptom that the pain increases when you raise your body and lift your head, and relieves when you lie down. Symptoms peak on the second and third days, often improve within a week, but may persist. These headaches can extend the length of your hospital stay.

### ● Epidural hematoma ※extremely rare

After an anesthetic injection, a blood clot (hematoma) may form around the spinal cord, compressing the nerves. Severe back pain and paralysis of the lower limbs may occur. Symptoms may occur after returning to the postpartum ward. Emergency surgery at a spine specialized facility is required. If you notice any of these symptoms, please let us know immediately.

### ● Local anesthetic poisoning or systemic toxicity ※extremely rare

Blood concentrations of local anesthetics become too high, causing dizziness, tinnitus, and numbness around the mouth. In severe cases, loss of consciousness, convulsions, respiratory arrest, arrhythmia, and cardiac arrest may occur.

### ● Remaining catheter ※extremely rare

Very rarely, when a catheter is being removed, the catheter may tear and remain in the body. Surgery may be required to remove it.