# CHIARI MALFORMATION / SUBOCCIPITAL DECOMPRESSION

## Informed Consent Document

**Form No:** AOF-018 **Rev. No / Date:** 2026 v09 / 10.07.2026

| | | | |
|---|---|---|---|
| PATIENT PROTOCOL NO | | DATE | |
| TURKISH ID / PASSPORT NO | | DATE OF BIRTH | |
| PATIENT'S FULL NAME | | SEX | |
| DIAGNOSIS | | | |

**Form No: AOF-018** **Rev. No / Date: 2026 v09 / 10.07.2026**

### 1. Dear Patient,

It is your most natural right to be informed about your medical condition and about all medical / surgical treatments and diagnostic procedures recommended to you for the treatment of your illness. After learning the benefits and possible risks of medical treatments and surgical interventions, it is again your own decision to consent or not to consent to the procedure to be performed. The purpose of this explanation is not to frighten or worry you, but to involve you more consciously in the decisions to be made about matters concerning your health. If you wish, all information and documents concerning your health can be given to you or to a relative you deem appropriate. Although this form has been designed to meet the needs of most patients under many circumstances, it should not be considered a document containing the risks of all forms of treatment. Depending on your personal health condition, your physician may give you different or additional information. After learning the benefits and possible risks of diagnosis, medical treatment and surgical interventions, it is your own decision to accept or not to accept the procedures to be performed. Except in situations of legal and medical necessity, you may refuse to be informed or may withdraw your consent at any time. This form has been prepared to inform you about the risks of the surgery and about alternative treatment methods. Please read this form completely and carefully, and sign this consent form only after you have read it and all your doubts regarding the procedure in question have been resolved by the physician.

### 2. General Information About the Disease and Its Treatment

Arnold-Chiari Malformation (ACM) is the downward herniation, through the foramen magnum opening at the skull base, of the cerebellum and of the tonsillar part that is its downward extension. A total of 4 forms of ACM have been defined. The first two types are most commonly seen. Type 1 is more common in adults, Type 2 in the childhood age period. In Type 1, involvement of the spinal cord is generally not seen, whereas in Type 2 the spinal cord and the brainstem are under compression. In Type 3, the cerebellum has descended together with the other posterior fossa structures from the foramen magnum toward the neck; it is generally incompatible with life and is rarely seen. Type 4 is the

incomplete development of the cerebellum. Other pathologies that may accompany ACM are hydrocephalus, syringomyelia and myelomeningocele.

Complaints that may arise in ACM: The most frequent complaint is pain at the root of the neck and headache; it is more so on straining and coughing, radiating also to the shoulders.

Complaints due to foramen magnum / brainstem compression: Gait disturbance (ataxia), motor and sensory deficit, cerebellar complaints (dizziness, imbalance), deficit of the lower cranial nerves (difficulty swallowing), headache.

Central cord (spinal cord) complaints: Loss of pain and temperature sensation while the sense of touch remains intact, loss of strength in the arms and/or legs.

Cerebellar complaints: Gait disturbance (ataxia), rapid involuntary eye movements (nystagmus), speech disorder (dysarthria).

In ACM Type 1, only headache localized to the nape and findings of brainstem compression are seen, whereas Type 2 is generally accompanied by meningomyelocele. Particularly in newborn children, rapid neurological deterioration may be seen in ACM Type 2 (involvement of the lower cranial nerves such as difficult breathing or respiratory arrest and aspiration of what they eat into the lungs, and in addition, loss of strength in the arms and legs depending on the degree of the damage occurring in the spinal cord).

In ACM Type 1, early surgical decompression is recommended in symptomatic cases, while follow-up is recommended in asymptomatic cases. The current surgical intervention in ACM is the "posterior fossa decompression" surgery aimed at relieving the pressure in the posterior cranial fossa. This intervention is the removal of the occipital bone at the skull base together with the posterior rim of the foramen magnum, defined as "suboccipital craniectomy". To this intervention may be added the surgery of "removal of the posterior parts of the C1 and C2 bones and, sometimes, depending on the degree of compression, widening of the dura — also known as the brain-spinal cord membrane — by duraplasty with autologous fascia or an allograft dura." In cases where there is also compression on the brainstem from the front, if there is no improvement or if there is worsening in the neurological complaints of the cases after the procedure of relieving the pressure of the posterior cranial fossa, removal of the odontoid part of the C2 bone by entering through the mouth, or strengthening by fixing the back of the skull to the spine from behind with screws and plates (occipitocervical fusion), may be required. For the hydrocephalus that occurs when the cerebrospinal fluid circulation pathways are under compression, external drainage or ventriculo-peritoneal shunt surgery before or after ACM surgery; and again, if there is also myelomeningocele together with ACM, in this case this defect too must be operated on.

## 3. Alternatives to the Surgery, If Any

As alternatives to the surgery, I have considered the following options:

As explained to me verbally by my doctor, accepting all risks and not having this surgery,

Accepting all risks and follow-up with computed tomography or magnetic resonance imaging,

Other possible treatment options...

I have also evaluated the other treatment methods explained to me by my doctor. The advantages and disadvantages of these alternative methods have also been explained to me by my doctor.

## 4. Expected Benefits of the Surgery

It is the improvement of the patient's current neurological picture and complaints. The surgery is performed with the aim of eliminating the complaints and with the expectation of preserving or improving the function of the nervous system. With the surgery to be performed, it is aimed to relieve the neural structures under compression, to eliminate or reduce pain, and to completely resolve — or to halt the worsening of — the neurological deficits present before the surgery (paralysis-loss of strength-numbness-loss of reflexes-urinary incontinence, etc.) and complaints such as pain-spasm, through the surgical treatment to be applied.

## 5. Estimated Duration of the Surgery

The duration of the procedure to be performed may vary according to the condition of the disease and of the patient, and is on average 2-5 hours. In addition, the procedures to be performed on patients before and after the surgery by the anesthesia doctors are not included in this duration. The procedure may take longer than the stated duration depending on the condition of the case. Your doctor will give you detailed information at the end of the procedure.

## 6. Risks and Complications of the Surgery

In addition to the benefits of the surgical procedure to be performed, there are also risks that may arise.

Anesthesia risk: There are risks during and after local and general anesthesia procedures (due to the position given to the patient during the surgery). In addition, in every form of anesthesia and in sedation, there are also complications and harms that may occur due to the medications. The anesthesia procedure to be applied and the related risks and complications have been explained to me, and I approve the recommended procedure in this regard.

Bleeding: Although very rare, I am aware of the existence of a risk of bleeding, which may be severe, during or after my surgery. In case of bleeding, additional treatment or blood transfusion may be needed. In such a case, I approve the necessary blood transfusion and other treatments. Some medications that I use and/or that need to be used during my treatment may increase the risk of bleeding through drug interactions and/or side effects. In some cases, it may be necessary to use blood-thinning medications earlier than expected, and this may also increase the risk of bleeding.

Blood clot formation: Blood clots may form after any type of surgery. Clots forming in the bleeding area may obstruct blood flow and lead to complications such as pain, edema, inflammation or tissue damage. If the use of blood thinners is discontinued, the risk of clotting may increase.

Postoperative Neurological Deterioration: Nervous system functions may deteriorate after the surgery due to problems such as bleeding at the surgical site, brain edema (pressure on the brain as a result of fluid accumulation) or vasospasm (narrowing of the vessels).

Respiratory problems: After the surgery, respiratory distress, which is usually temporary, or pneumonia may be seen. Pulmonary embolism (obstruction of the vessels of the lungs) may be seen.

Difficulty breathing: Respiratory distress may occur due to brainstem damage during surgery and, after surgery, due to the compression effect of a clot on the brainstem or spinal cord causing a lung infection (pneumonia) and due to the effect of a clot in the pulmonary artery (pulmonary embolism). It may require additional treatment.

Cardiac complications: The surgery carries a low risk of leading to an irregular heart rhythm or a heart attack.

Death: Although very rare, there is a risk of death during or after the surgery.

Failure of the surgery: The surgical intervention to be performed may not provide improvement of all or some of the complaints.

Increase in pain complaint: Although rare, the pain complaint may increase after the surgery.

Infection: Infection may occur at the skin incision site as well as in the surgical field, and even in the bone within the surgical field. Risks related to infection include meningitis (inflammation of the membranes surrounding the brain and spinal cord) and empyema-abscess formation (accumulation of pus).

Nerve root injury: Nerve root injury may cause pain in the leg, weakness in the relevant muscle groups, and sensory disturbances in the relevant dermatomes (nerve areas).

Spinal cord and/or nerve tissue injury: Although very rare, it may occur unexpectedly during or after the surgery. This condition may cause paralysis due to spinal cord injury, weakness in the arm and/or leg, and respiratory distress.

Risk of cerebrospinal fluid leakage: After the surgery, cerebrospinal fluid may leak from the wound site to the outside. For the treatment of this, a spinal (spinal cord) catheter or an additional

intervention aimed at repairing the same wound site again may be required.

Recurrence, Residue: After the surgery, the symptoms may reappear and additional surgery may be required.

Seizure Activity: Abnormal electrical activity may arise in the brain, and this may lead to epileptic (seizure) attacks.

Hydrocephalus: After the surgery, the intracranial cerebrospinal fluid circulation pathways may become obstructed and the placement of a device called a shunt may be required.

Cerebral Vasospasm (narrowing of the vessels): In patients with hemorrhage, or after bleedings that may occur during surgery, before or after the surgery, a regression in nervous system functions may occur due to ischemia in the brain (impairment of the brain's nourishment).

Neuropsychological Disorders: After the surgery, there is a possibility, albeit low, of loss of intellectual (mental) capacity or of depression.

Stroke (paralysis): Although rare, weakness in the arm and/or leg may develop during or after surgery following the lodging of air or a clot into the brain from the veins. It may require additional treatment.

Risks related to the implant: The implants placed during the surgery may lead to conditions such as breakage, displacement, failure to perform their function, allergy and infection. For this reason, they may need to be removed or replaced.

I have also understood the possibility that, during my surgery, in the face of an unexpected situation such as bleeding, injury to an adjacent tissue or organ, etc., my doctor may perform other procedures required for my health apart from the planned procedure, and I approve this.

I have understood and accept all the risks written above that may occur during and after the surgical procedure to be performed on me.

## 7. Consequences to Be Faced If the Surgery Is Not Performed

The patient's current complaints and clinical condition may not improve, and there may be a worsening. In patients, depending on the progression of the disease, an increase in complaints of weakness and numbness in the hands, arms, feet and legs may develop. The herniation of the brainstem and the cerebellum downward beneath the skull carries the risk of creating compression in the regions that control vital functions (the regions that provide respiration, heartbeat and wakefulness). Sudden arrest of respiration and heartbeat, loss of consciousness and death may develop.

## 8. Important Characteristics of the Medications to Be Used

If you have a previously identified drug allergy, you must inform your physician and your nurse about this. During your current treatment process, medications appropriate to the patient's medical condition (painkillers, antibiotics, medications supporting the circulation and the heart, blood products, fluid therapies, medications specific to your disease) will be given according to the reason for your admission or newly developing conditions. During the use of medications, side effects may emerge and cause damage to the heart, kidneys and other organs. New medications will be added to the treatment to correct organ damage. ANTIEPILEPTIC MEDICATION: After brain surgeries, seizure-preventing medications called antiepileptics are used to prevent epileptic seizures. PROPHYLAXIS: Before and after your surgery, appropriate protective antibiotic therapy is applied with the aim of reducing the risk of surgical site infection. USE OF BLOOD-THINNING MEDICATION: If you are using anticoagulant, blood-thinning medications, different medication therapies or blood products may be given to you to counteract the effects of these medications. INTRACRANIAL MASS, HYDROCEPHALUS, VASCULAR MALFORMATION CASES: Medications (antiepileptic medications) may also be given to lower the pressure in the brain (intracranial pressure) and the blood pressure, and to prevent spasm (narrowing) in the vessels and seizures. In the presence of brain edema and progressive clinical symptoms, anti-edema medications may be used. SPINAL CASES: In case of severe pain after spinal operations, medications sold under a green (controlled-substance) prescription, which may cause dependence,

may be used. After spinal surgeries, in cases of no change in the weakness in the arms and legs or of newly developing weakness, anti-edema medications may be used. In this case, the blood sugar balance may be disturbed. INTENSIVE CARE-DELIRIUM: In elderly patients and during prolonged intensive care stays, for psychological symptoms that may emerge in patients, mental health-regulating medications recommended by a psychiatrist may be used. These medications may damage the heart, kidneys and other organs. SHUNT INFECTION, EVD: As a result of a CSF infection, it will be necessary to start appropriate antibiotics recommended by infectious diseases. Among these treatments, the method in which medications are applied into the brain ventricles by means of an EVD, expressed as intraventricular treatment, may also be used. In addition to these, medications related to anesthesia are used. The general anesthetic medications given during the surgery may have toxic (poisonous) effects / side effects on organs such as the lungs, heart, brain, kidneys and liver. For this reason, DANGER OF DEATH may arise. I have informed my doctor about all my known allergies. I have also informed my doctor about the prescription medications I use, over-the-counter medications, herbal medicines, dietary supplements, illegal drugs, alcohol and narcotics/intoxicants. The effects of the use of these substances before and after the surgery have been explained to me by my doctor and recommendations have been made. During my stay in the hospital, I have received information about the important characteristics of the medications to be used for diagnosis and treatment (what they are used for, their benefits, their side effects, how they are to be used).

## 9. Lifestyle Recommendations Critical for Patient Health

**Tobacco and Tobacco Products:** It has been explained to me that smoking tobacco and tobacco products (cigarettes, waterpipe, cigars, pipe, etc.) before or after my surgery may cause my recovery process to be prolonged. Anesthesia risks are higher in patients who smoke; death due to anesthesia is seen more frequently. If you smoke, you should know that the success of the treatment/surgery will be lower than the general success average.

Follow your doctor's recommendations (exercise, nutrition program, etc.) and, if applicable, do not neglect your outpatient clinic check-up on the date requested of you.

I have received information about what I need to do regarding my lifestyle after my treatment/surgery (diet, bathing, medication use, mobility status and/or restriction status).

## 10. Patient-Specific Section

*The patient's individual specific circumstances are recorded at the end of the form under **Section 14 — Signatures**.*

## 11. How to Access Medical Assistance on the Same Matter When Needed

Not accepting the application of the treatment/surgery is a decision you will make of your own free will. If you change your mind, you may personally reapply to our hospital/hospitals capable of performing the treatment/surgery in question.

I have received information about how to access medical assistance on the same matter when needed (my own physician, a different physician, the clinic where I was treated, and in emergencies, 112).

## 12. Permissions

I authorize the Head of the Surgical Team, Responsible Specialist Doctor **Dr. Özgür Akşan**, and his team to perform my surgery.

I understand that this intervention is performed with the aim of eliminating my complaints and with the intention of preserving or improving the function of the nervous system. I confirm that my doctor has explained all the information above, that I have understood this information, and that all my questions regarding this intervention have been answered. Therefore, I give my consent for **CHIARI**

**MALFORMATION (SUBOCCIPITAL DECOMPRESSION) SURGERY** and for all different or additional surgeries and additional treatment interventions deemed necessary by my doctor.

**Use of tissue:** Any tissue not required for medical diagnosis may be used for medical research within the framework of ethical rules. I give my consent to the use of any tissue, medical device or body parts that may have been removed during the surgical procedure.

**Medical research:** I give my consent to the review of clinical information from my medical records for the advancement of medical study, medical research and doctor training, provided that confidentiality rules are observed.

**Photography/Observers:** I consent to the photographing or video recording of the surgery to be performed for scientific, medical or educational purposes, provided that the images do not reveal my identity.

### 13. Consent Verification

I know the alternative treatment methods and their risks.
I know the risks and side effects of the intervention.
I know the possibility of success and failure.
I know what may happen if I am not treated.
I understand that the procedure to be performed may not carry a guarantee of cure.
I have understood everything that has been told to me.
My doctor has answered all my questions.
My doctor has explained to me what is written here, item by item, in a clear, understandable and explanatory manner that I can comprehend.
I know the meaning of the Informed Consent form.
I have been informed about the approximate cost of the treatment.
I am making my decision of my own free will.
I had enough time before the intervention to obtain a second opinion within a reasonable period.
I have read and understood the content of the Informed Consent form.
All the blanks on this form were filled in before I signed it, and I have received a copy.

## Signatures

### A) Patient-Specific Conditions

The patient writes in their own handwriting any personal conditions (allergies, medications, previous surgeries, etc.). If there are none, writing "NONE" is sufficient.

### B) Handwritten Declaration

The patient writes the following sentence in their own handwriting:

*"I have read this form carefully, I have been informed about CHIARI MALFORMATION / SUBOCCIPITAL DECOMPRESSION, my questions have been answered, and I consent to this procedure of my own free will."*

## C) Signatures

| | Full Name | Signature | Date / Time |
|---|---|---|---|
| Patient | | | |
| Patient's Legal Representative / Relative (Relationship: .....) | | | |
| Head of Surgical Team, Responsible Specialist | **Dr. Özgür Akşan** | | |