Informed Consent Form for a Clinical Study of Inverted Internal Limiting Membrane Insertion Combined with Air Tamponade in the Treatment of Macular Hole Retinal Detachment in High Myopia

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A Single Center, Randomized and Controlled Clinical Study of Inverted Internal Limiting Membrane Insertion Combined with Air Tamponade in the Treatment of Macular Hole Retinal Detachment in High Myopia

Brief introduction

We sincerely invite you to participate in this clinical study of macular hole retinal detachment in high myopia (MHRD). This study does not affect your choice of treatment. You are invited to participate in this study because you were diagnosed with macular hole retinal detachment in high myopia. Before participating in this study, you can read and be informed of the contents of the informed consent of patients. The informed consent explains the research purpose, process, possible benefits and risks, and your rights as a participant. You need to read the informed consent carefully and fully understand the content. After reading the informed consent, please discuss with your attending physician. If you decide to participate in this study, you need to sign this informed consent, and you will get a copy of the signed informed consent.

Study purpose and implementation

The aim of this study is to evaluate the efficacy and safety of inverted internal limiting membrane insertion combined with air tamponade in the treatment of macular hole retinal detachment in high myopia.

Vitrectomy combined with internal limiting membrane peeling + expansive gas or silicone oil tamponade is the main treatment for macular hole retinal detachment (MHRD) in high myopia. Although the internal limiting membrane peeling has greatly improved the rate of retinal reattachment, the closure rate of macular hole is only about 50% - 70% in MHRD. In idiopathic macular hole, the treatment of limiting membrane peeling and inverted internal limiting membrane insertion can increase the closure rate of MH (up to 98%). After the operation, the diameter of the ellipsoid zone defect is significantly reduced, and the visual acuity improves significantly also. Therefore, vitrectomy combined with internal limiting membrane peeling + inverted internal limiting membrane insertion is gradually becoming the mainstream method for the treatment of idiopathic macular hole. The current standard intraocular tamponade, which includes silicone

oil and expansive gas, such as C3F8, SF6, sustains a very long time, and during the duration, retinal detachment seldom recurs. However, silicone oil and expansive gas can lead to postoperative complications such as elevated intraocular pressure, rapid cataract progression, and corneal degeneration. The sterilized air as the third kind of intraocular tamponade, sustains for a short time, and can bring early exposure to the macular region, shorten postoperative prone time, reduce the pain of patients, and also can reduce operation time and cut off procedures of the infusion of silicone oil or expansive gas, which can thereby reduce the risk of surgical infection. Compared with silicone oil infusion, sterilized air infusion has the same repair effect in patients with idiopathic macular hole and primary retinal detachment caused by peripheral retinal hole. Due to the complex condition of macular hole retinal detachment, after gas absorption or silicone oil removal, recurrence of retinal detachment may occur and reoperation may be required. According to the reports, the recurrence rate of retinal detachment after silicone oil infusion and gas absorption is similar.

This study is a clinical study of vitrectomy+ inverted internal limiting membrane insertion combined with air tamponade for MHRD in high myopia. The study is conducted in about 38 patients in the center. The duration of the study is about 12 months. In this process, you will be asked to visit the research center for a period of 12 months. The duration of each visit varies according to the procedure required by the research program. You should be prepared to stay for about 2 to 3 hours at each visit.

Before you agree to participate in this study, you need to understand the risks and benefits of the study, and decide whether to participate in the study in the informed state, which is known as informed consent. This informed consent is to inform you of the research you may be involved in. Please read the information carefully, and you can discuss it with anyone, including your relatives and friends. If you have any questions, please ask your research doctor or researcher.

1. Participating in the study

If you are aware of the research and the examinations to be conducted and agree to participate in the study, please sign this consent form. Whether you decide to participate in the study is entirely voluntary, that is, you may choose to participate in this study, or you may choose not to participate in this study. And you can quit at any time of the research without any reason. If you don't take part in the study, you can also discuss your regular treatment with the research physician.

If you don't participate in this research, or if you decide to quit, it will not affect your future treatment. If you decide to quit the study, or if the doctor thinks you should quit your research in advance, then you need to go back to the research center for the last visit, ocular and other examinations. You don't need to

explain why you quit the research, unless you have any side effects. In this case, please make sure that the side effects are immediately told to your research doctor or nurse.

The research doctor can ask you to withdraw from this study for any reason. We will inform you of all the new information about the surgical procedures so that you can decide to continue the research or withdraw from the study.

You may be asked to withdraw from the study as follows:

1) Continuation of the study may be detrimental to you

2) You need to use the forbidden treatment in this study

3) You fail to follow the instructions

4) Research stops

If you decide to quit the research, you should inform the research doctor or researcher. They will ensure that the appropriate procedures are followed and the last security visit to you will be made.

2. **Research visits**

First visit: if you volunteer for this study, after you sign informed consent, screening inspection will be made within two days prior to inclusion into the study, to determine whether you fit in this study. The so-called "screening inspection" includes

1) Understanding your demographic data and medical history.

2) Knowing what medications you used or are using.

3) Hematology tests (Blood samples from your dorsal vein will be about 8-10 ml). Blood pregnancy tests are also performed for women who may be pregnant.

4) Ocular examination, including visual inspection (check your visual acuity), slit lamp examination, direct / indirect ophthalmoscopy, Optometry (check your best corrected visual acuity), optical coherence tomography (non-invasive examination that scans your eyes to check the extent of macular hole and retinal detachment), intraocular pressure detection; wide-angle fundus examination and ocular ultrasonic examination (check the extent of retinal detachment, posterior staphyloma degree), IOL-Master (measurement of axial length), MERG examination and microperimetry (check your visual function).

5) Measuring your vital signs, including body temperature, breathing, pulse, and sitting blood pressure, as well as height and weight.

6) Questionnaire on health and vision.

3. **Research and treatment**

If you agree to participate in this study, you will be assigned to one of the two surgical treatment groups. Your treatment group will be decided by randomization. In this study, you have the possibility of 50% to be assigned to group 1 or group 2. Before the randomization, both of you and the evaluation research doctor do not know which group you will be assigned to. After the randomization, you have the right to know which group you are assigned to.

We will monitor your vision, ocular condition and related auxiliary examination results at each visit, and you need to return to the research center at the twelfth month to complete the final efficacy and safety assessment.

Doctors will only choose one eye as "study eye"". If you have both eyes with macular hole retinal detachment in high myopia, the eye with lower eyesight will be chosen as the study eye. If your research doctor believes that your contralateral eye (not study eye) also needs to be treated during the study period, your research doctor will take care of it appropriately.

If necessary, when your doctor considers that the symptoms described by you need further examination, he/she may wish to meet you at the time out of regular visit. The inspection conducted at the research center during the visit is only for the purposes of the study. We will notify you if any abnormalities which may indicate potential health problems are detected.

Research grouping：

- Group 1: The patients in Group 1 are treated by the surgical method of standard 3-port 23 gauge pars plana vitrectomy + internal limiting membrane peeling + air-fluid exchange + silicone oil infusion
- Group 2: The patients in Group 2 are treated by the surgical method of standard 3-port 23 gauge pars plana vitrectomy + internal limiting membrane peeling + inverted internal limiting membrane insertion + air-fluid exchange

You need to visit the center on the first postoperative day, 1 week, 2 weeks, 4 weeks, 8 weeks, 12 weeks, 6 months and 12 months after the operation.

4. Risk and discomfort：

You may or may not have any adverse reactions as mentioned below during the study period. There may be some problems or adverse reactions that have not been known so far. We will notify you, if there is any new information that may affect your willingness to start or continue to participate in this study.

1) Your doctor will tell you the symptoms you need to pay special attention to. If you feel that one or

more of these symptoms are happening to you, or that you are worried about your overall health conditions, you should immediately notify your research physician. The doctor will take appropriate treatment for your condition and may let you withdraw from research and treatment.

2) The risk of new surgical treatments

3) Common side effects

At present, there is no direct side effect on air tamponade. Some patients may have complicated cataract or secondary glaucoma after silicone oil infusion. At the same time, it may happen that macular hole closure is not recovered, retinal detachment is not reset, all or local crystal opacity is aggravated, intraocular pressure is increased after both kinds of operations, and that may need for medication intervention or reoperation.

4) Each visit is conducted as standard medical examination. Risks of haemospasia may include fainting, pain and / or needle insertion caused ecchymosis. In very few cases, small blood clots or infections may occur at the site of the needle. Discomfort or ecchymosis also may cause by the cuff. In rare cases, doctors or nurses, lab technicians may be brought into exposure to your blood, if this happens, it is necessary to check whether there is the presence of hepatitis B and C virus and HIV in your blood samples, in order to ensure these staffs to get attention, blood monitoring and proper treatment. In this case, the research doctor will tell you about your health and suggest what you should do next. We will ensure the confidentiality of your data at any time.

All operations are carried out in strict accordance with medical procedures. Complications and accidents cannot be completely avoided. If it occurs, the doctor will treat the patients according to the relevant diagnosis and treatment routine.

5. Benefits：

Participation in this study can facilitate your regular visits, and help you to be informed of the changes in your condition, which is crucial for disease control and good outcomes.

6. Participants' responsibilities and rights；

You have the following duties: Provide the truth about medical history and current condition; Tell the doctors any discomfort during the treatment; Do not take restricted food or medications; Tell doctors whether you have ever participated in other treatment recently, or is currently participating in other research and treatment.

You can choose not to participate in the treatment, or choose other treatment, or notify the doctors at any time to request withdrawal of the treatment, and your medical treatment and rights will not be affected. Not choosing this treatment will not affect your choice of other treatments, and we will still provide other treatment

options.

If you need other treatment, or you do not comply with the treatment plan, or have treatment related injury, or for any other reason, the doctors can terminate your treatment.

You can be informed of the information and the progress related to the treatment. If you have any questions, or you have any discomfort and injury during the process of treatment, you can get more information from the operation informed consent, or consult the doctor. You can contact your attending physician about the participant rights of the treatment

7. Compensation for injury of patients

It is very important for you to carefully follow the instructions of the research requirements.

If you are ill or physically injured due to the participation of this study, please contact the research doctor immediately [Name: Contact information:] , he / she will treat you or transfer you to other hospitals. If you have any adverse events because of participating in this study or surgery, medical institutions will provide the corresponding economic compensation based on the provisions of relevant laws and regulations.

Even if you sign this informed consent, you will not give up any legitimate rights and interests, nor will it relieve the legal and professional responsibilities of the doctor, the applicant or the participating institution.

8. Confidentiality and authorization of the collection, use and publication of personal medical information

For this study, institutions and researchers will use medical information collected from you or the study, such as medical records and test results. The information will include your name or other identification. You agree to participate in this study, which means that you agree that the agencies and researchers participating in this study can obtain your medical information from your doctor and other medical staff for the purpose of the study.

You also agree that the organizations and researchers participating in this study can use and share this information with the following organizations.

Unless required by law, only the team and professional personnel and its authorized agents, other national government agencies, as well as the ethics committee can share medical information from you. Your personal information will not appear in any of the reports or publications of the study.

The purpose of sharing these data with other institutions is to implement this study and to ensure the accuracy of the data.

You may at any time notify [researcher:] to withdraw the informed consent in written form. If you withdraw your consent, the institutions and researchers participating in this study will no longer use or disclose your medical information unless it is for the scientific integrity of the research. However, withdrawal of consent does not affect the use and disclosure of prior research results, and your medical information will not be deleted from the research records.

If you do not wish to sign this agreement, or you withdraw your consent later, you will not be able to participate in the study and will not accept any treatment in this study. The informed consent will be invalid only if you confirm the withdrawal of the consent.

Contacts

If you have any questions of the research, please contact [Name: Ying Zheng Tel: 13501611126]。

If you have any questions about the rights of participants, please contact [Name: Ethics Committee of Shanghai General Hospital Tel: 021-63240090*6424]。

If any injury related to the research happens, please contact [Name: Ying Zheng Tel: 13501611126]。

Informed Consent and Authorization Statement

Name of the Study： A single center, randomized and controlled clinical study of inverted internal limiting membrane insertion combined with air tamponade in the treatment of macular hole retinal detachment in high myopia

I have read the informed consent form.

I have the opportunity to ask questions and all the questions have been answered.

I understand that participating in the treatment is voluntary, and agree with the researchers to use my diagnostic data according to the informed consent and to use the data for scientific research.

I can choose not to participate in this treatment, or to withdraw from the treatment at any time and without discrimination or retaliation after informing the researchers, and any medical treatment and rights will not be affected.

If I need other treatment, or don't follow the treatment plan, or have a treatment related injury, or if there are any other reasons, the research physicians can stop me from continuing to participate in this treatment.

Be filled only by patients or patients' agents.

The name of the participant(in regular script)：_____

The sign of the participant：_____

Date：_____day_____month_____year

The relationship with the patient（Agent）：_____

The name of the agent(in regular script)：_____

The sign of the agent：_____

Date：_____day_____month_____year

The confirmation statement of the executor of the informed consent

I have informed the patient of the document accurately, and he / she read the informed

consent accurately and has the opportunity to ask questions.

The name of the research physician (in regular script)：_____

The sign of the research physician：_____

Date：_____day_____month_____year

（*Note: If the participant is illiterate, the witness should sign his/her signature, and if the participant has no capacity, the agent should sign his/her signature*）

Operation Volunteer Form

I declare: Informed by the doctor, I fully understand the above situation, agree to receive treatment, and accept the possible medical risks of this treatment.

Signature of the patient：

Signature of the family member(Guardian/Agent)：

The relationship with the patient：

Day Month Year