MODEL FOR TRAINING OF SURGICAL OPERATION OF CATARACT

FIELD OF THE INVENTION

The present invention relates to a model for training of surgical operation of cataract which is prepared to learn a skill and a technique for surgical operation of cataract of a human's eye including an enucleating operation of a nucleus lens fallen down into corpus vitreum.

DESCRIPTION OF THE PRIOR ART

The cataract of eye indicates the cloudy state of the crystalline lens of an eye, and is a main complaint of an eye sight injury or sight loss. The cataract of old aged people's eye is in the cataract of a human's eye. A method to extract a crystalline lens or a phacoemulsification and aspiration method can be mentioned as the concrete examples of methods for medical treatment. To learn a skill and a technique of a surgical operation of cataract, many exercises for surgical operation training are carried out.

In general, a pig's eye is used as a training model for a surgical operation of cataract of a human's eye, assuming that the pig's eye is the human's eye suffering from eye cataract. In this case, a pig's eye is taken off from a butchered pig, and the age of the butchered pig is about 6 to 8 months. However, a provided pig's eye from a young pig is not suffering from eye cataract. Further, since the tissue and hardness of a pig's eye are different from those of a human's eye, the conventional training method for a surgical operation of cataract that uses a pig's eye is different from the actual surgical operation of cataract for a human's eye.

Further, in a case of an enucleating operation, the falling down of a lens into corpus vitreum is considered to be the worst failure in the surgical operation of cataract. And, if the fallen lens is left as it is, it causes inevitably loss of sight, therefore, it is necessary to carry out an enucleating operation to enucleate the fallen nucleus lens immediately. However, nowadays, there is not an appropriate training model or training method to learn the technique of the enucleating operation.

BRIEF SUMMARY OF THE INVENTION

The inventors of this invention have conduced an intensive study to develop a training model by which an operation similar to a surgical operation of cataract of a human's eye and accomplished the present invention. Namely, the object of this invention is to provide a training model of cataract by which the feeling of an actual surgical operation for cataract of the old aged people and additionally an enucleating operation of a nucleus lens fallen into corpus vitreum can be learned.

The important point of this invention is a training model for a surgical operation of cataract comprising a pig's eye which is prepared by injecting self hardening type chemicals into a crystalline lens capsule of said pig's eye, or a training model for a surgical operation of cataract comprising a pig's eye which is prepared by injecting self hardening type chemicals into an empty crystalline lens capsule of said pig's eye. Further, another important point of this invention is a training model for a surgical operation of cataract comprising a pig's eye in the corpus vitreum of which a false nucleus of cataract prepared by injecting self hardening type chemicals into an empty crystalline lens capsule of said pig's eye is existing.

That is, the present invention is the training model for a surgical operation of cataract having similar hardness to the hardness of an old aged people's eye with cataract prepared by injecting a self hardening type chemicals into a capsule of crystalline lens of pig's eye or prepared by making a capsule of crystalline lens of pig's eye empty then injecting a self hardening type chemicals into the empty capsule of crystalline lens of pig's eye. And, this training model for a surgical operation of cataract can be also used as a training model for enucleating operation to enucleate a fallen nucleus lens from the corpus vitreum, assuming the case when the nucleus lens is fallen down into corpus vitreum by error during the enucleating of nucleus lens from the capsule.

BRIEF ILLUSTRATION OF THE DRAWINGS

FIG. **1**(*a*)–FIG. **1**(*d*) are drawings illustrating the preparation process of a model of eye with cataract of this invention.

FIG. **2**(*a*)–FIG. **2**(*d*) are drawings illustrating another preparation process of a model of eye with cataract of this invention.

FIG. **3**(*a*) and FIG. **3**(*b*) are drawings illustrating the preparation process of a fallen cataract nucleus lens of this invention.

In the drawings, each numerical numbers indicate, **1**: syringe **2**: chemicals **3**: 27G dull needle **4**: crystalline lens **5**: empty crystalline lens capsule **6**: chemicals **7**: sclera of posterior pole of eyeball **8**: posterior capsule of crystalline lens **9**: anterior capsule of crystalline lens **10**: sclera **11**: scalpel for sclera

DETAILED DESCRIPTION OF THE INVENTION

The detail of this invention will be illustrated more readily.

The training model used in the present invention is made of a pig's eye. As mentioned above, a pig's eye is taken from a butchered pig. Generally, a pig's eye for training model are provided from young pigs of about 6 to 8 months age, however, in the present invention, the pig's eye for training model is not restricted to the young butchered pig's eye.

In the present invention, the self-hardening type chemicals are injected into a capsule of crystalline lens, and there are two methods of this invention. That is, the method to inject the chemicals into a capsule of crystalline lens and the method to inject the self hardening type chemicals into an empty capsule of crystalline lens from which the whole contents are taken out. Further, as another case, the method to make the hardened chemicals fall down into corpus vitreum and make exist it in corpus vitreum by breaking capsule of crystalline lens consciously at the point when the injected chemicals into an empty crystalline lens capsule is hardened can be mentioned. In this case, the hardened chemicals are called as the false nucleus of cataract.

The self hardening type chemicals to be injected into a capsule of crystalline lens of pig's eye or into an empty capsule of crystalline lens from which the contents is taken out is a chemical which has a gelling function and indicates the similar hardness to the hardness of an old aged people's eye with cataract. As the concrete example of said chemicals, the materials mainly composed of dibenzylidenesorbitol or derivatives of it, polyhydric alcohol such as glycerin or coloring pigment can be mentioned. Dibenzylidenesorbitol is a condensed product of benzaldehyde and sorbitol. Nuclear substitution products of benzaldehyde,