Vitreoretinal Surgery on Video

Tape 8

Complications in cataract surgery, intraocular tumors and miscellaneous

Complications after in cataract surgery
Intraocular tumors
Retina cyst
Retinoschisis
Retinal detachment (RD) after intraocular inflammations

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Text:
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Tapes in this video series

Tape 1. Retinal detachment combined with proliferative vitreoretinopathy (PVR) I
Tape 2. Retinal detachment combined with proliferative vitreoretinopathy (PVR) II
Tape 3. Giant retinal tears (GRT)
Tape 4. Traumatic retinal detachment I
Tape 5. Traumatic retinal detachment II
Tape 6. Proliferative diabetic retinal detachments (PDRD)
Tape 7. Macular surgery
Tape 8. Complications in cataract surgery, intraocular tumors and miscellaneous

Introduction to the series

"Vitreoretinal Surgery on Video" shows a selection of operations performed in the last eight to ten years. The series is meant for vitreoretinal surgeons who have mastered the initial difficulties of this area and now encounter more and more difficult cases in their daily work. Nonetheless, even the experienced vitreoretinal surgeon, who does not exclude any patients from his practice but treats even the most complicated cases himself, will find difficult cases here in all the regular indication groups.

The cases on the videos are divided into the usual indication groups.

From the point of view of philosophy and surgical concepts, vitreoretinal surgery has not changed much in the last ten years. The surgery undertaken in this series is based on the philosophy and surgical concepts described in my book Silicone Oil in Vitreoretinal Surgery, which are still valid. The field has, however, undergone significant modifications in its techniques. The development of new instruments, the introduction of the perfluorocarbon liquid (PFCL) and of the wide angle system are the most important recent innovations. This development can be followed on the videos in the selection of cases, but none of the cases presented can be seen as an isolated technique. On the contrary, surgeons who are not in the situation to apply the most recent techniques in their daily work will be able to see how it is possible to operate successfully with less sophisticated means. Surgeons who are in a position to apply all the modern techniques available will also find sufficiently many cases of interest.

The videos are divided into several texts and films. Each text gives relevant facts on the patient, a description of the course of the operation, with the emphasis on specific moments in the surgery, and the instruments which were used. The videos on proliferative diabetic retinopathy and on macular surgery do not always follow
the described pattern, for obvious reasons. In a number of cases we have added a short comment.

In most cases, the surgery was performed by myself, in some, particularly in the macular surgery and miscellaneous videos, the surgeon was Dr. Carel Claes. The name of the surgeon is given after each case. The text and comment of the course of the operations was written by Dr. Taraprasad Das in cooperation with myself. Most instruments presented and used in the surgery were manufactured by the Dutch Ophthalmic Research Center International.

R. Živojnović. M.D.

PART I

Patient data

Eighty-year old female patient; operation on the left eye. The patient had had a cataract extraction and implantation of AC IOL two days earlier. During the phacoemulsification, the lens material had dropped into the vitreous cavity. On examination, the vitreous was seen to be incarcerated in the corneal wound, part of the nucleus was in the vitreous cavity with temporal retinal detachment.

Surgery

The tape begins after the 360° encircling band is sutured.
1. Pars plana vitrectomy and removal of the last fragments of the lens cortex with the flute needle. Larger fragments had been removed earlier with the fragmentome.
2. Peripheral vitrectomy.
3. Injection of PFCL and vitreous base vitrectomy.
4. Removal of the remaining posterior capsule with the vitreous shaver.
5. Endophotocoagulation 360°.
6. PFCL-air exchange.

Instrumentation

Back-flush needle; vitreous shaver.

Surgeon: R. Živojnović
PART II

Patient data

Seventy-five year old female patient. Operation on the right eye. She had had phacoemulsification for senile cataract three days earlier. During the surgery, the lens had slipped into the vitreous cavity and the implantation of the IOL had to be abandoned. Three days after the operation, the patient complained of pain, redness, and loss of vision in the operated eye. On examination, a corneal edema was found with raised intra-ocular pressure. The entire lens nucleus was seen to be in the vitreous cavity with lens remnants in the pupillary area.

Surgery

1. Pars plana removal of the lens remnants from the pupillary area.
2. Vitreous base vitrectomy.
3. Pars plana removal of the posterior dislocated hard nucleus with the help of the fragmatome. The smaller lens particles were crushed between the light pipe and the vitreous cutter before removal.
4. A small peripheral retinal break was seen; this was photocoagulated.
5. Posterior chamber sulcus fixated IOL was inserted.
6. The inferotemporal peripheral break was supported with radial explant.

Instrumentation

Phaco fragmatome; back-flush needle; vitreous shaver.

Surgeon: C. Claes

PART III

Patient data

Twenty-three year old male patient with a history of gross reduction in visual acuity for three months. Operation on the left eye. He had previously had an encircling band for suspected rhegmatogenous retinal detachment. Three months after that surgery, the patient reported a gross reduction in visual acuity. On examination, he was found to have vitreous hemorrhage. Ultrasonography showed total retinal detachment with restricted retinal mobility and associated choroidal detachment.

Surgery

1. Pars plana lensectomy and removal of the lens capsule.
2. Vitreous base vitrectomy. After the vitrectomy, a closed funnel retinal detachment was seen. Also there seemed to be a solid greyish-white mass infero-temporally behind the detached retina.
3. Retinectomy after application of diathermy. The solid subretinal mass was freed from the choroid with the curved vitreous scissors.
4. Application of diathermy to the last connection of the tumor. The sclerotomy was enlarged and the mass was removed with vitreous and surgical forceps.
5. Removal of the subretinal proliferations.
6. Fluid-silicone oil exchange. This operation was done in the pre-PFCL era.
Instrumentation

Sato knife; curved vitreous scissors; back-flush needle; straight retinal spatula; end-gripping forceps.

Comments

The solid mass, sent for histopathology, was diagnosed as medullary epithelioma.

Surgeon: R. Živojnović

PART IV

Patient data

Forty-three year old male patient; operation on the left eye. He consulted his ophthalmologist about defective vision in the right eye, and central serous retinopathy was diagnosed. A routine examination revealed malignant melanoma of the left eye. The diagnosis of melanoma was established clinically on the basis of ultrasonography, fluorescein angiography, and computed tomography of the eye. No medical or surgical treatment had been undertaken.

Surgery

1. Pars plana vitrectomy, lens sparing.
2. The temporal tumour was inspected. Vitreous base surgery with scleral indentation.
3. Peripheral retinotomy and detachment of the retina overlying the tumor.
4. The tumor was separated from its bed and finally removed using the vitreous cutter.
5. Injection of PFCL to settle the retina. The surgery was completed with PFCL-silicone oil exchange, and endophotocoagulation to the peripheral retinotomy areas.
6. Two months later, the silicone oil was removed and additional endophotocoagulation and endocryo were applied followed by fluid-air exchange.

Instrumentation

Retinal spatula; curved vitreous scissors; back-flush needle.

Comments

On follow-up after 16 months, the patient was doing well and showed no evidence of recurrence.

Surgeon: C. Claes

PART V

Patient data

Thirty-year old male patient. Operation on the right eye involved. He had earlier been diagnosed as having acute retinal necrosis (ARN) in the right eye, and was treated with systemic acyclovir. The patient developed defective vision over a period of 6 months. On examination, a total retinal detachment with proliferative vitreoretinopathy (PVR) was found. There were multiple retinal breaks in the periphery with retinal whitening and necrosis typical of ARN. The lens was clear.

Surgery

1. Pars plana vitrectomy, lens sparing.
2. Careful dissection of the membranes with the vertical vitreous scissors and the long retinal spatula.
3. The peripheral avascular retina was inspected. Multiple retinal breaks were seen. Retinectomy done to remove the peripheral retina along with the fibrotic tissues.
4. Removal of the subretinal proliferations.
5. Injection of PFCL and retinal massage.
6. Dissection and removal of the anterior retinal flap using the curved scissors, straight forceps and the vitreous cutter.
7. Additional injection of PFCL and endophotocoagulation of the edges of the retinotomy and the peripheral retina.
8. PFCL-silicone oil exchange.

Instrumentation

Curved and vertical vitreous scissors; vitreous forceps: serrated and hockey stick; retinal spatula; back-flush needle; retinal knob.

Surgeon: R.Živojnović

Part VI

Patient data

Forty-five year old female patient. She had had bilateral exudative retinal detachment due to uveal effusion syndrome. She was treated conservatively, but the left eye became blind with no light perception. On examination of the right eye, total retinal detachment was detected. The detached retina was very close to the lens, which was partially cataractous.

Surgery

1. Pars plana lensectomy.
2. The detached retina was elevated up to the iris diaphragm, and even the 8 mm long infusion cannula was found in the subretinal space.
3. Initial injection of PFCL to open the funnel. It was not possible to open the funnel adequately, due to retinal contraction and subretinal proliferations.
4. A vascularised fibrotic area was seen in the temporal periphery. It was dissected and removed bimanually under the co-axial illumination of the microscope.
5. Application of diathermy to the peripheral retina and peripheral retinotomy. The subretinal bands and sheets of membranes were removed.
6. PFCL-silicone oil exchange.

The surgery was completed with endophotocoagulation.

Instrumentation

Long infusion cannula (8 mm); vitreous hockey stick forceps; end-gripping retinal spatula.

Surgeon: R.Živojnović

Part VII

Patient data

Twenty-five year old male patient. Operation on the right eye. He had undergone scleral buckling for rhegmatogenous retinal detachment 18 months previously. The buckle consisted of 360° encircling band and segmental silicone tire. The patient’s vision had grossly reduced in a period of one month. On examination, a total recurrent retinal detachment was found and the segmental buckle
was seen to be underneath the retina, due to scleral erosion.

Surgery

The tape begins after removal of the silicone encircling band; the band did not migrate into the vitreous cavity.
1. Pars plana vitrectomy, lens sparing.
2. 180° inferior retinotomy after previous endodiathermy. Replacement of migrated tire into the vitreous cavity.
3. The sclerotomy was enlarged. One end of the tire was grasped with the serrated vitreous forceps and pulled out through the sclerotomy.

The retina settled with peripheral retinectomy. Silicone oil was injected with simultaneous endodrainage of subretinal fluid, and endophotocoagulation. The surgery was done in the pre-PFCL era.

Instrumentation

Intra-ocular diathermy; endolaser; vitreous shaver.

Surgeon: C. Claes

PART IX

Patient data

Sixty-year old male patient. He complained of a gradual reduction of vision over many years, which was associated with a gradually enlarging superior scotoma. On examination, retino-schisis was found involving the macula. He had been under periodic observation and the macula had not been involved in the retino-schisis earlier. Operation on the right eye.

Surgery

1. Inspection of the fundus showed retino-schisis with multiple retinal breaks in the inner and outer wall of schisis. There was epiretinal proliferation.
2. The epiretinal membranes were lifted from the retina and peeled with the vitreous forceps.
3. The viewing system was changed to panoramic system for better visualisation of the membranes. The
peeling of the membranes was done carefully using both the serrated and the hockey stick forceps.

4. Injection of PFCL followed by endophotocoagulation.

The surgery was completed with PFCL - air exchange.

**Instrumentation**

Small spatula; hockey stick and serrated vitreous forceps; Avi panoramic viewing system and bullet light; back-flush needle.

Surgeon: C. Claes

The video series “Vitreoretinal Surgery on Video” by R. Zivojnović consists of eight videos, which are available in PAL and NTSC, either separately or as a complete set.

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