Vitreoretinal Surgery on Video

Tape 4

Traumatic retinal detachment (I)

Late traumatic retinal detachment (RD) combined with proliferative vitreoretinopathy (PVR)
Traumatic RD after double perforation
Traumatic RD combined with giant retinal tear (GRT)

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Text:
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Kluwer Academic Publishers
Dordrecht/Boston/London
Titles 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

Thirty-year old male patient, with an injury to the right eye with retained intra-ocular metallic foreign body. He had previously had the following surgery:
1. Primary repair with removal of the intra-ocular foreign body;
2. Lensectomy, vitrectomy and long-acting gas injection for retinal detachment.

Three months after the last surgery, he had total retinal detachment with PVR, paramacular hole, and scar in the posterior pole.

Surgery

1. Pars plana vitrectomy and membrane peeling.
2. Removal of the lens capsula remnants.
3. Fluid-silicone oil exchange, and simultaneous endodrainage.
4. Partial circumcision of the scar under silicone oil to relieve traction.
5. Endophotocoagulation.
6. Injection of BSS into the anterior chamber for compartmentalisation of the silicone oil.

Instrumentation

Serrated and end-gripping forceps to remove the lens capsule; retinal scratcher for creating an edge and subsequent peeling of epiretinal membrane; curved vitreous scissors to excise the scar; silicone-tipped back-flush needle.

Surgeon: R.Živojnović
PART II

Patient data

Forty-year old female patient, left eye injured with penetrating trauma with retained intra-ocular foreign body. Primary repair of the wound had been done with removal of the foreign body externally through the sclera. Six months after that surgery she developed total posterior synechiae, cataract and hypotony. Contact ultrasonography showed shallow, but immobile retinal detachment.

Surgery

1. Lensectomy.
2. Removal of organised vitreous hemorrhage with pars plana vitrectomy.
3. Retinal scar nasal to the disc seen; peripheral retinectomy and removal of the vascularised scar tissue.
4. Central epiretinal membrane removed; macular hole with curled edges seen.
5. Vitreous base vitrectomy and relief of the vitreous incarceration from the old sclerotomy site.
6. Diathermy and circumcision of the nasal scar.
7. Fluid-silicone oil exchange and simultaneous endodrainage.

Instrumentation

Sato knife for synechiolysis and loosening of lens fibres; end-gripping forceps to peel epiretinal membranes; silicone-tipped back-flush needle; curved and vertical scissors.

Surgeon: R. Živojnović

PART III

Patient data

Twenty-five year old male patient, left eye injured with penetrating trauma with retained intra-ocular foreign body. The foreign body had been removed externally. Six months after that surgery, the patient had a subluxated partially cataractous lens, fibrotic scar and total retinal detachment with subretinal proliferation.

Surgery

1. Lensectomy.
2. The fibrotic scar was found adherent to the peripheral retina which required peripheral retinectomy.
3. The subretinal space was inspected and the subretinal band removed.
4. Scar tissue was removed with curved scissors using the bimanual technique under the co-axial illumination of the operating microscope.
5. The macula was found contracted due to a submacular membrane. En-block removal of the subretinal proliferation tissue.
6. Perfluorocarbon liquid (PFCL) injection and retinal massage.
7. 360° retinectomy and removal of anterior retina.
8. Endophotocoagulation.
9. PFCL-silicone oil exchange.

Instrumentation

Sato knife for lensectomy; curved and vertical scissors for retinectomy and scar tissue removal; hockey stick forceps for removal of subretinal membranes; retinal knob for retinal massage; back-flush needle.

Surgeon: R. Živojnović
**PART IV**

*Patient data*

Twenty-year old female patient, left eye injured with corneal scleral laceration with loss of the iris, lens and vitreous. After primary repair of the wound, she underwent pars plana vitrectomy and silicone oil injection for retinal detachment. Two months after the last surgery, the patient developed recurrent retinal detachment.

*Surgery*

1. Silicone oil removal.
2. A totally contracted immobile retina with 360° retinal tear, and two bridges of the giant retinal tears seen. The bridge at 12 o’clock meridian was broken in the beginning of the surgery.
4. Initial retinal exploration with injection of perfluorocarbon liquid (PFCL). Incarceration of the retina in the sclerotomy site of the previous surgery seen.
5. Cleaning of the subretinal space. The retina everted over the small bubble of the PFCL placed on the optic nerve head, which works as a cushion.
6. Additional injection of PFCL. Strong peripheral contraction seen.
7. Epiretinal membrane removal and retinal massage under PFCL.
8. Diathermy and removal of the peripheral contracted edges of retina. Removal of the necrotic tissue with silicone brush needle possible when infusion bottle is raised to temporarily elevate the IOP. The non-necrotic edges of the retina are removed using the vitreous cutter.

10. Endophotocoagulation under panoramic view of the fundus.
11. PFCL-silicone oil exchange.

*Instrumentation*

Silicone oil removal cannula with side port; silicone brush to remove necrotic tissue and to clean back of retina; membrane spatula; retinal knob; hockey stick forceps; silicone-tipped back-flush cannula; AVI panoramic viewing system.

Surgeon: R. Živojnović
PART V

Patient data

Forty-year old male patient, left eye injured with corneoscleral laceration and iris and vitreous loss. After primary repair of the wound, he underwent pars plana lensectomy, vitrectomy and silicone oil injection for retinal detachment. Four months after the last surgery, the patient developed total retinal detachment, and contracted immobile retina (closed funnel detachment). In addition, the iris was retracted, there was retained lens material and silicone oil in the anterior chamber.

Surgery

1. Silicone oil removal. Injection of perfluorocarbon liquid (PFCL) to gain access to the funnel and the central membrane.
2. Removal of central epiretinal membrane (ERM) by hockey stick forceps.
3. Significant contraction of the mid-peripheral retina seen; retinectomy and removal of the peripheral contracted retina.
4. Delamination of the fibrotic scar with curved scissors.
5. Removal of PFCL and inspection and cleaning of back of retina.
6. Removal of circular peripheral scar, adherent fibrotic chorio-retinal scar from 1 to 4 o’clock meridian was left behind. Reinjection of PFCL.
7. Reconstruction of pupillary diaphragm and removal of membrane from back of iris. Diathermy applied to the pupillary margin to stretch the iris.
8. A small bubble of PFCL seen under the retina at 10 o’clock meridian; removed with flute needle.
10. PFCL-silicone oil exchange.

Instrumentation

Hockey stick forceps for removal of epiretinal and sub-retinal membrane; curved scissors for retinectomy; serrated end-gripping forceps; silicone-tipped back-flush needle.

Surgeon: R. Živojnović
PART VI

Patient data

Twelve-year old boy, right eye injured with corneoscleral laceration and loss of lens and iris. After primary repair of the wound he underwent pars plana vitrectomy with 360° retinotomy and silicone oil injection. Three months later, he had reproliferation under silicone oil with attached retina.

Surgery

1. Pars plana vitrectomy under silicone oil.
2. Delamination and cutting of the epiretinal membrane.

Instrumentation

Small spatula; scratcher; vertical scissors; end-gripping forceps.

Surgeon: R.Živojinović

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

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