Dear colleagues,

Allow me to start my introductory lecture, as it suits my age, with a reminiscence of history and development of our surgery. The first brave attempts of eye surgery were registered in the ancient Egypt and India, when eye cataract surgery was performed in public space, by method of reclamation, i.e. luxation of the opaque eye’s lens with a needle into the vitreous space. This risky but often successful procedure was, in different variants, practiced for centuries, until mid-18th century, the French surgeon Daviel, for the first time performed cataract surgery by surgical cut on the cornea. The wound was not sutured and the patient had to wait for the wound to heal, as well as for the results of the surgery lying in bed with bandages over both eyes for 10 to 15 days. From then on, the surgery of the anterior segment stagnated for 200 years, during which time countless modifications of operative techniques and instruments, with detailed descriptions, were made, as well as division into protagonists of extra or intra-capsular techniques, comprehensive books were written by professors of that time. At the beginning of the 20th century, introduction of glaucoma surgery (Elliot) as well as introduction of suturing the corneal wound, were beginnings of a new development, which was even at the time often not recognized and accepted with hesitation. Conservative and narrow-minded attitude prevented rapid spreading of new ideas. My mother specialized ophthalmology in 1931 with Prof. Saltman in Graz; 8 years later, when she visited her clinic and asked the new professor about the news in surgery, she received the answer that there were no news, except that young surgeons thought they were doing something new and progressive by closing corneal wound with one suture. It means, at this famous clinic, the significance of the corneal suture was ignored. Thirty years later, during my specialization in Rotterdam, we used to close the corneal wound hermetically with new materials, virgin silk, nylon, which did not stop senior surgeons in the next surgery room to put one black silk suture. However, both our patients and theirs still stayed lying with binocular bandages for a week after the surgery. The eye surgery at that time still consisted of cataract and glaucoma surgeries, and more ambitious surgeons found satisfaction in surgery of eye-lids and lacrimal surgery. A part of the explanation, maybe even justification of the slow development of the anterior segment surgery was the fear of losing the vitreous body, which was a right-mare of all the eye surgeons. Vitreous body loss during the course of surgery was the most serious complication and frequently led to loss of the eye.

Due to the development of better anaesthesia, technological and technical improvement, discovery of enzymatic zonulysis, better and easier communications, in the 1960ies rapid and explosive development of anterior segment surgery occurred. Accurate closure of the wound enabled implantation of lenses after intra or extra-capsular extraction. Modern glaucoma surgery developed and cornea transplantation became a routine operation. The refractive surgery became more popular and the
overall development culminated with facoemulsification and implantation of i.o. lenses as well as in laser surgery of cornea and glaucoma. Even then the world did not change: conservativeness and self-confidence prevented for years adoption of implantation of lenses in America, and radial keratotomy and keratomileusis were accepted with difficulties in Europe and America only after a detour through Russia from Columbia where they were invented.

As we turn back to our main subject, we should mention that the development of retinal surgery started by the invention of ophthalmoscope by Helmholtz in the mid 19th century. From that moment on it was possible, with a help of a strong beam of light, to observe in an indirect picture the changes in the vitreous body and the retina. That enormous progress enabled interpretation and indirect treatment of visible changes in fundus. In nineteen twenties Jules Gonin, by means of long-term observation of detached retina, came to conclusion and established the thesis that a hole in the retina is responsible for such state. By a successful attempt to close the hole in the retina with thermocauter, he proved this thesis of his and therewith launched the first successful era of primary surgical treatment of a part of retinal pathology. The next 50 years passed in seeking the best way and material to accomplish this objective, never doubting in the Gonin’s thesis and the main principle of treatment.

This, so-called conventional detachment surgery, with the access from the outer side of the eye, with suturing of sponge-radial or circumferential (cerclage) fillings, with cryo or laser coagulation, got standardized and up to the present day has reached the success ratio of 90-95% with fresh retina detachments. However, in cases of immobile, contracted retina, where the anatomic relation of retina and vitreous body was changed, this method was not successful and these cases, before the development of modern vitreo retinal surgery, were condemned to blindness. These were mainly cases of old detachments, detachments after inflammation, after perforative injuries, where the basis of pathology was a proliferative process.

In the sixties, Paul Cibis, Saint Louis, USA, introduced silicon oil in the vitreoretinal surgery and tried to separate the changed and attached vitreous body from the retina by injecting the oil and using its hydraulic power for expansion. At the same time, by evacuating the intra-ocular fluid he tried to return the retina into its place. He left silicon oil as tamponade in the eye. With this complicated technique, carried out under control of binocular ophthalmoscope, Cibis achieved astonishing success in some, up to that point, inoperable cases. His early death, as well as problems with silicon oil – which was an industrial product – are the reasons why this method had no successors in America. John Scott, Cambridge, England, accepted the Cibis’ method and improved it by introducing instruments that separated the retina from vitreous body and with successful result left silicon oil as permanent tamponade in the eye. Using this technique, he operated throughout many years rather successfully a great number of
patients in serious condition, and for a long time was the only hope for many patients from all over the world.

In early 70’s in Miami, USA, Robert Machemer developed pars plana vitrectomy. For the first time it was possible to enter the intra-vitreal space and remove the diseased and blurred vitreous body with instruments under the control of a microscope. This capital step in the development of eye surgery brought hope in that moment that all the problems in the intravitreal space were over. After short time, however, it was found out that even this, absolutely revolutionary technique, had limited success and was risky and unusable in cases where the retina was detached or firmly attached to vitreous body, for the fear of creating iatrogenous holes in the retina. This method was in Europe accepted by Rudolf Kloeti in Zurich and instrumentally improved, while in Paris Jean Haut combined two described techniques and upon executed vitrectomy injected silicon oil using it only as a tamponade after the completed operation.

At this point of my exposition I come to my contribution to this development. My contribution to the development of vitreoretinal surgery is certainly not meaningless, but also it does not stand as itself, it is the continuation of all the afore described achievements previously accomplished by other surgeons. In the early 70’s, I was already rather involved in the issues of retinal surgery and covered this position in my hospital. Unsatisfied with my results, I visited Zurich, Paris and several times Cambridge, learning and comparing my results with the others’. I started with Scott’s technique and binocular ophthalmoscope, and after one year I combined this technique with vitrectomy using silicon oil as a tamponade only. Having treated an increasing number of serious cases, especially from our former country, I come to the conclusion that all this acquired knowledge, despite much improved results, is insufficient for achieving desired results with the most serious cases. Where the retina was incarcerated, shrunk or shortened, grown together with scars, I concluded that only surgical treatment of the retina itself - retinotomy, retinectomy, can bring to the wished result. In the beginning I applied this new technique only with the patients with a single eye in up to that time inoperable state and as expected achieved positive results. Later on I applied it with ever more patients, it turned into a new concept of treatment of the most serious cases of vitreoretinal pathology consisting of maximal vitrectomy, retinal surgery (if necessary), silicon oil as temporary tamponade and stabilization of the eye.

After the first published papers on the application of the technique on several hundreds of patients and frequent presentations at meetings of this new conception of treatment, the introduction of retinal surgery was with great interest accepted. As such it was the basis for macular surgery and relocation of retina.

In spite of all successes and recognition to this surgery, one should always be aware that the pathological basis of almost all these serious cases in which this surgery is
indicated is a biological process, so that this surgery is actually not an adequate cure of the such. That biological process is often insurmountable, it is the cause of many recidives and repeated operations or often failures at the end of the treatment. However, at present there are no other therapeutic means that would cure or withstand them, therefore surgery remains the only capable one. It should also be pointed out, that the inevitable surgical intervention itself stimulates this biological process in a negative sense. Knowing that, surgeons should during the operation avoid all unnecessary interventions and limit their work to what is indispensable. To know and perform what is really indispensable, and avoid the unnecessary is the hard clue to success in this surgery.

During the last 10 to 15 years there were no basic or significant changes in this surgery, it is still surgical approach leading to cure, though inadequate, the only possibility for the treatment of the most serious vitreoretinal changes.

Dear Colleagues, in the 80's, in the period of creation, introduction and delighted acceptance of this surgery, my work in the operating rooms was daily observed by young surgeons from all over the world, who arrived to learn the new surgery.

The numerous invitations for presentations abroad, expressed interest and endless discussions on presented cases, international acknowledgements — all that, apart from great satisfaction — made impression of success and the right way. However, several years before my retirement, the situation, especially regarding patients developed unfavourably. Many doctors, who had accepted this surgery with enthusiasm, soon realized that it was not only new and exciting but also difficult and hard. Facing semi-success and failures, frequent repeating of the operations, unwilling to attend to patients and their frequent psychical difficulties for a long time, mainly inadequately rewarded for such great effort, they started to make selection among patients. Giving up this hard work can be understood and justified. However, as it often happens, to proclaim such a patient as inoperable was a serious ethic offence. What about experienced and recognized surgeons who have both knowledge and experience for the treatment of such cases, who at congresses and public meetings express doubt or even speak of uselessness of treating such cases. Not only do they commit a hard ethic, almost criminal offence, but they, by force of their authority, give legitimacy to such opinion and attitude. They also bear responsibility for the present situation in which majority of ophthalmologists, having only a superficial contact with this problem, believe in inoperability of such cases and will not refer patients to treatment. Such development culminated in hypocritical and naive untrue statements of such surgeons that they do not encounter serious cases any more.
This sad situation has been supported during the last 20 years by unfavourable development of health service in developed countries. It started in the USA, the country with the most expensive health care by the introduction of the so called "managed health care", management in health care aimed to reduce expenses. By introducing restrictive measures, limiting hospital and physicians' budgets, granting hospitals and insurances the right to interfere and suggest methods and ways of treatment, led to shortening the operating time, reduction of personnel, long waiting lists, general dissatisfaction of personnel, misunderstandings and disturbed relations with patients. The money saved by those measures was mainly spent on management and results in medicine that is not oriented towards patients, but money. Similar changes are taking place, for hardly conceivable reasons, in different European countries. A phenomenon, that has also come from America and become common in Europe are frequent patients' complaints about failed interventions. In all this confusion, it is understandable that the surgeons are not stimulated in this situation to undertake treatment of serious cases with indefinite duration and uncertain issue of treatment. This situation even serves as a welcome excuse for their decision not to deal with this hard type of work.

The consequences of the described state are disastrous for patients in said situation. Patients who are not insistent are returned home, trusting that there is no help for them, for those who insist, it is the beginning of looking for a physician who will help them, and due to the loss of time make worse the already poor situation.

Concluding the description of this, in my opinion unfavourable, situation, regarding the vitreoretinal surgery at present, we may only wait to see what is to happen in future. Young physicians wishing to get educated in vitreoretinal surgery can choose among numerous centres in Europe engaged in that kind of work. However, if they want to learn something about complex cases there have been few places left to give them that chance. In public hospitals in Europe and America there are ever fewer surgeons who deal with complex cases, and even they for clear, already described, reasons start moving to private institutions. Those surgeons are overburdened with excessive work and have little, or no time to impart their knowledge to the younger ones. Among the priorities of private institutions education does not take a distinguished place. Number of vitreoretinal cases is compared to cataract limited, though there is at the moment a tendency to enlarge it by operations of floaters in vitreous body and by vitrectomy in the case of primary detachment. The number of complex cases, significantly reduced by selection and exclusion of the most serious cases, divided among many centres is minor. All the mentioned does not present a sufficient basis for the education of all-round vitreoretinal surgeons. Taking in consideration that this surgery cannot be trained either by computer simulation or practising on animals, but only on patients with complex changes. Perhaps young people will have to be educated in India and such
countries that have outstanding institutions, great number of patients and where one works under less pressure and limits.

My pessimistic consideration of the future of this surgery is confirmed when I see the programmes of congresses and courses that instead of reviews and presentations of the problems of complicated cases, contain whole sessions on sutureless vitrectomy and discussion on the use of different calibres of vitrectors.

Finally, what should be done to improve the present situation and to prevent further progress of this negative development? In my opinion, one of the solutions would be to find a way and criterion to separate serious and complex cases and concentrate their treatment in a number of appropriate centres, where competent surgeons would, working free of pressure and limits, be able to offer the patients treatment and chance to get cured as they normally deserve. In such centres young surgeons would be educated and it would enable the transfer of the knowledge and experience accumulated by enormous work in the course of the last 30 years, the transfer that in the present situation definitely is not secured. It would be the way to eliminate this deceptive present situation in which everybody says he/she can do everything, while most of them are neither willing, nor capable to treat serious cases.