Editorial

Heavy Silicone Oil as an Internal Tamponade

In this issue of the Iranian Journal of Ophthalmology, Lashay and coauthors have presented a very meticulous and instructive article on "Surgical Outcomes of Complicated Retinal Detachments using Heavy Silicone Oil as an Internal Tamponade" (pages: 25-30). The authors have performed a complete pars plana vitrectomy, membrane peeling and injection of heavy silicone and endolaser in 55 eyes with complicated retinal detachment. They have obtained a significant improvement in the visual acuity of their patients (P=0.005) and claim that the functional results obtained in their study are consistent with previous reports of using heavy silicone oil in similar cases.

The low gravity of silicone oil can result in fluid accumulation in the inferior quadrants underneath the silicone oil bubble and an increased rate of reproliferation in the inferior part of the retina. Therefore, several attempts have been undertaken to develop a vitreous tamponade with a specific gravity greater than that of intraocular fluid. Several heavier-than-water fluorinated silicone oils have been evaluated for intraocular use. Despite their ability of sufficient tamponade in the inferior quadrants of the retina, the high rate of complications has prevented the widespread use of these substances. However, the need for an intraocular tamponade with a specific gravity greater than that of intraocular fluid has resulted in the development of several new vitreous substitutes.[1]

Heavy silicone has specific gravity higher than that of water[2] and therefore could be used as an effective tool to tamponade infraretinal lesions such as chorioretinal coloboma.

In the same issue of IrJO (pages: 36-40) Riazi-Esfahani et al have introduced a retrospective analysis of "Pars Plana Vitrectomy for Retinal Detachments Associated with Chorioretinal Coloboma". Introducing 31 cases with retinal detachment and chorioretinal coloboma using nonheavy silicone oil in 77.4% or 20% sulfur hexafluoride in 22.6%, performing vitrectomy and endolaser around the coloboma. They have included only cases with type II detachment where the break is found inside the coloboma and excluded type I which is caused by the breaks outside the coloboma.

Chorioretinal colobomas can occur in isolation or in association with other ocular and systemic abnormalities, frequently as part of a syndrome The retina overlying the choroidal defect remains thin and undifferentiated and, therefore, prone to the development of retinal breaks and detachment. Although spontaneous retinal reattachment has been reported, most retinal detachments associated with chorioretinal coloboma require surgery and often have poor visual outcomes.[3] The prevalence of retinal detachment among patients with chorioretinal coloboma varies considerably in previous reports.

Indicated that in their 31 cases with chorioretinal coloboma and retinal detachment; 64.5% had association of iris coloboma, 9.6% microcornea, in 22.5% (N=7) cases the fellow eye was phthisic which was probably caused by a previous retinal detachment, in 12.9% (N=4) the fellow eye had chorioretinal coloboma. Although, they emphasized that in 64.5% (N=20) the fellow eye was aproblematic, but it should be considered that chorioretinal coloboma, unilateral or bilateral may very often ends up with retinal detachment and a preventive treatment by direct or indirect laser surrounding the coloboma is highly recommended, and particularly when this area is not already spontaneously pigmented.

Using heavy silicone is treating chorioretinal coloboma associated with retinal detachment has a great advantage to keep the retina attached and to provide the possibility of postoperative laser therapy on the nontreated pericolobomatous zones.

As the authors have emphasized the choroid and pigmented retinal epithelium are not developed at the area of coloboma which is most often located at the inferonasal site of the eye, and therefore direct treatment of the holes within the coloboma is of no use.

The authors review the past history of surgery of chorioretinal coloboma by external indentation, cryopexy etc. with the development of new technology, vitrectomy, heavy silicone, laser therapy application of such classical therapies should be more or less forgotten. It should be also mentioned that the familial cases of chorioretinal and iris coloboma with many variations in one family, although exceptional but should be kept in mind and the members of the family should be carefully examined and if necessary treated.

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References

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