

RETINOPEXY OR LAMELLAR SCLERAL RESECTION FOR RETINAL DETACHMENT

Analysis of Results in 126 Consecutive Cases*

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IN 1953, a five-year survey of the results of retinopexy for retinal detachment in 103 consecutive patients at Cleveland Clinic was reported.¹ It is the purpose of this paper to present a similar survey of the results of retinopexy and of lamellar scleral resection for retinal detachment in 126 consecutive patients treated here during the succeeding five-year period from 1953 through 1957.

In evaluating the results in the original and also in the current series, the same criterion of a cure as presented at the symposium on retinal detachment² was applied: complete reattachment of the retina for not less than six months post-operatively. However, as will be noted later, complete reattachment does not necessarily imply visual improvement.

Preoperative Factors

During the five-year period from 1953 through 1957, 331 consecutive patients having retinal detachment were examined here, 11 of whom had bilateral detachment. Of the 331 patients, 126 came to surgery.

Symptoms in the 126 patients were characteristic of those generally reported: blurred vision (126 patients), light flashes (60 patients), subjective scotoma (33 patients), hemorrhage preceding detachment (4 patients), pain (1 patient), and metamorphopsia (1 patient).

The conditions associated with the detachments in the patients were: aphakia (22 patients); trauma (19 patients); glaucoma (6 patients); hypertension (5 patients); retinal detachment or aphakia in the opposite eye (4 patients each); basal-cell carcinoma or carcinoma of the rectum, or anterior and posterior uveitis (2 patients each); and abscessed teeth, arteriosclerotic heart disease, Bell's palsy, cancer of the uterus, cerebral thrombosis, cholelithiasis, corneal ulcer, Cushing's syndrome, dislocated lens, epididymitis, exotropia, glomerulonephritis, gout, Graves' disease, hemophilia, hypothyroidism, intermittent claudication, keratonus, malignant melanoma, pyelonephritis, subdural hematoma (1 patient each). Many factors are involved in the pathogenesis of detachments. All factors must be metic-

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ulously considered before treatment is recommended. If a tumor is suspected, a radioactive phosphorus (P^{32}) uptake study may be diagnostically helpful. Not all detachments are indications for surgery; for example, one patient who had toxemia of pregnancy recovered normal vision and fields after delivery, without ophthalmic surgery. However, as stated by Funder,³ the prognosis for good vision in the unaffected eye appears to be poor, and thus every effort should be made to cure the detachment in the affected eye.

The preoperative factors in the first and in the current series are briefly compared in *Table 1*. In each series there were more men than women; the percentages

Table 1.—*Preoperative factors in two series of patients having retinal detachment*

| Preoperative factors | Number of patients | |
|--------------------------------|---|--|
| | First series ¹ of 103 patients (1948 through 1952) | Current series of 126 patients (1953 through 1957) |
| Sex | | |
| Male | 60 | 72 |
| Female | 43 | 54 |
| Duration of detachment | | |
| less than one month | 79 (76.7%) | 96 (76%) |
| Refractive error | | |
| Myopia | 17 | 9 |
| Hyperopia | 19 | 8 |
| Mixed astigmatism | | 7 |
| Compound hyperopic astigmatism | | 14 |
| Compound myopic astigmatism | | 34 |
| Age, years | | |
| 6 - 40 | | 19 |
| 40 - 70 | | 104 |
| 70 - 90 | | 3 |

of patients having retinal detachments less than one month were about equal in both series. The hyperopes and the myopes were about equal in number, yet the compound myopic astigmatism was more prevalent than the compound hyperopic astigmatism. One hundred and four patients (83 per cent) were in the age group of 40 to 70 years.

Billowy detachments (108 patients, 86 per cent) were more prevalent than flat detachments (18 patients, 14 per cent). Holes were found in 83 patients, 13 of which had disinsertions, 6 patients had two holes, and 3 patients had three holes. In these patients the detachment was complete in 10 eyes. It was inferior in 27, superior in 31, temporal in 48, and nasal in 1. Sixty-three (50 per cent) of these patients had holes in the superior quadrants.

Of the 126 patients who underwent surgery, 106 had three to six days of bed rest before the operation; only 15 patients had bed rest for less than three days, and 5 had more than six days. Preoperative bed rest is believed to be important for the following reasons: (1) the retina becomes flatter, facilitating localization of tears or holes; (2) in the elderly patients other diseases may be revealed that are better treated medically before than after operation.

Results of Surgery

Of the 126 patients, 77 patients underwent retinopexy and 49 lamellar scleral resection. Two of the resections were buckling procedures that involved implantation of polyethylene tubes. The results in these operations are compared with those presented in the previous survey (*Table 2*).

In the current series the cure rate of 51 per cent in the 77 patients who underwent retinopexy was better than that in the previous series of 49 patients (47.5 per cent were cured). Likewise, the cure rate in patients who underwent lamellar scleral resection was 51 per cent in 49 cases. In the present series the billowy detachments with holes responded to surgery better than did those without holes. The flat detachments with holes responded better to surgery for retinal detachment than did the ones without holes.

Sixteen of the 126 patients had no follow-up and for statistical purposes were considered failures. If these cases were deleted then the over-all cure rate for a primary procedure would be 58 per cent.

In analyzing the successes, we note that some of the patients recovered visual fields and visual acuity, while others achieved reattachment with recovery of visual acuity or recovery of visual fields but not both. The results confirm the previous statement that complete reattachment does not necessarily mean visual improvement.

Of the 126 patients, 16 had recurrence of retinal detachment which required reoperations. One patient had two reoperations. Lamellar scleral resection was performed in nine recurrences with improvement in five cases (55 per cent). Retinopexies were performed in eight recurrences with improvement in three cases (38 per cent). From these percentages it would appear that lamellar scleral resection is better as a secondary operation than is retinopexy.

In the 22 aphakic eyes of the 126 patients, 14 lamellar scleral resections were performed with improvement in 6 (43 per cent). Nine retinopexies were performed

on aphakic eyes with improvement in three (33 per cent). Again, lamellar scleral resections gave the best results.

Postoperative Complications

All of the 126 patients were kept bedfast and supine for 7 to 14 days postoperatively. In all of the patients, conjunctivitis or some other conjunctival reaction occurred postoperatively; however, only one patient had a severe blepharitis. Exotropia was present in seven patients; complicated cataract was present in nine. Other complications were pulmonary embolus (one patient), pulmonary infection (one patient), keratitis (two patients), urinary retention (one patient). One malignant melanoma was found on subsequent enucleation.

Table 2.—*Results of surgery for retinal detachment in two consecutive series of patients*

| Factors | Number of Patients | | | |
|-------------------------------|--|-----------------------------|--|-----------------------------|
| | First series ¹ (1948-1952) | | Current series (1953-1957) | |
| | Cured, no. of patients (per- centage of total) | Total no. of patients | Cured, no. of patients (per- centage of total) | Total no. of patients |
| Type of operation | | | | |
| Retinopexy | 49 (47.5%) | 103 | 39 (51%) | 77 |
| Lamellar scleral resection | — | — | 25 (51%) | 49 |
| Total | 49 (47.5%) | 103 | 64 (51%) | 126 |
| Type of detachment | | | | |
| Billowy | | | | |
| With holes | 10 (35.7%) | 28 | 40 (53.3%) | 75 |
| Without holes | 28 (55%) | 51 | 13 (39.3%) | 33 |
| Total | 38 (48.1%) | 79 | 53 (49%) | 108 |
| Flat | | | | |
| With holes | 4 (100%) | 4 | 6 (75%) | 8 |
| Without holes | 7 (35%) | 20 | 5 (50%) | 10 |
| Total | 11 (46%) | 24 | 11 (61.1%) | 18 |

Comment

Our cure rate of 51 per cent is based on an over-all series including primary and secondary procedures. Colyear and Pischel⁴ reported a 75 per cent cure rate in 440 cases. They state that the causes of failure in surgery for retinal detachment stem from failure of early recognition, failure to find and to close the primary tears, and failure to close satellite tears. They believe that the majority of cases can be cured by diathermy alone, and that scleral shortening procedures should be reserved for eyes with retinal shrinkage or vitreous adhesion, aphakic eyes with retinal detachment occurring soon after cataract surgery, and for certain cases of severe myopia, multiple tears, and large disinsertions. Our experience leads us toward that trend of thought.

Summary

Of 331 consecutive patients having retinal detachment examined during a five-year period (1953 through 1957), 126 were operated upon; 77 of these patients underwent retinopexy, and 49 lamellar scleral resection. Pathogenic factors associated with the detachments should be considered in each case, because a certain proportion of patients having retinal detachments are not good candidates for surgery for other reasons, but rather should be treated medically. Localization of holes is of primary importance. To this end, preoperative bed rest is believed to be of great assistance in stabilizing the retina to facilitate examination. The possibility of the presence of a malignant melanoma must always be considered. In cases of suspected tumor, radioactive phosphorus (P^{32}) studies may be helpful.

Comparable results between retinopexies and lamellar scleral resections are shown. Surgery should not be limited to one procedure, but the surgeon should evaluate each case and use the appropriate procedure.

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