

# OUTPATIENT RETINAL DETACHMENT SURGERY: A PRELIMINARY REPORT

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## ABSTRACT

Retinal detachment surgery has been considered an inpatient hospital procedure requiring preoperative and postoperative hospitalization. In this pilot study, outpatient retinal detachment surgery was performed on sixteen patients and the results (100% success rate after an average follow-up of 8.3 months) were comparable or better than reported overall success rates for retinal detachment in the literature.

This prospective and non-randomized study, although small in scale, suggests that ambulatory retinal detachment surgery is safe and successful. This is the first report on outpatient retinal detachment surgery in world ophthalmic literature.

*MJIRI, Vol.2, No.3, 189-192, 1988*

## INTRODUCTION

Retinal detachment surgery has been considered a major operation requiring hospitalization before and after surgery. The pre-operative reasons for hospitalization include prevention of macular detachment, better diagnosis of retinal pathology, and improving the position of the detached retina to facilitate the surgery. The post-operative reasons for hospitalization are to position the patient, to promote the absorption of subretinal fluid, and to prevent reattachment. Five to seven days of post-operative hospitalization have been suggested after scleral buckling surgery.<sup>1</sup> This report describes our experience with a prospective, non-randomized group of seventeen patients who were selected to undergo out-patient retinal detachment surgery. Our experience suggests that retinal reattachment surgery performed on an out-patient basis is feasible.

## MATERIALS AND METHODS

Sixteen patients with unilateral rhegmatogenous retinal detachments were selected for this study because of their willingness to have the surgery as out-patients. There were eight men and eight women. The average age was 55 years (range: 18-83 years). The

original procedures involved small detachments involving one retinal quadrant or less. These cases had small amounts of sub-retinal fluid that could be buckled without drainage of sub-retinal fluid. Subsequently more extensive detachments involving sub-retinal fluid drainage were included.

Ten detachments involved one quadrant or less including one eye with two separate detachments in two separate quadrants. Five detachments involved two quadrants and one detachment involved three quadrants. Two detachments were aphakic and two detachments were pseudophakic. One aphakic patient required YAG laser capsulotomy for better visualization of the retinal pathology. Detailed retinal drawings were made the day before surgery. The medical work-up before the surgery included a complete blood count, chest x-ray, and electrocardiogram. Operative sedation was achieved with fentanyl (0-44cc) and diazepam (0-10mg) intravenously.

Only two patients received pre-anesthetic medication with Innovar (a combination of fentanyl and Droperidol) 1-2cc. One other patient received 1.5mg of Droperidol during the operation for nausea. Local anesthesia was used in all cases. Topical proparacaine was instilled initially. The retrobulbar block was 5cc of solution that was a 50/50 mixture of 0.5% Marcaine and 2% Lidocaine in seven cases. In the other ten cases the

anesthetic was unmixed 0.5% Marcaine. Hyaluronidase of 150 units was added to each injection. Facial akinesia was achieved by injecting 10cc of anesthetic by the Van Lint method. Sub-tenon injection of 0.1cc of the anesthetic was given in each oblique quadrant.

### Surgical Method

All cases had a 360° peritomy, isolation of the recti muscles with 4-0 silk, a thermal reaction achieved by cryotherapy around the hole(s), and marking of critical hole landmarks on the sclera. The buckles were achieved by solid silicone or silicone sponge explants fashioned to close the hole(s) and sutured to the episclera. Encircling elements were passed around the globe and held secure by a small hollow silicone sleeve. Six eyes handled the drainage of subretinal fluid. The eyes were irrigated with 30cc of 10% chloramphenicol solution and the conjunctiva was sutured with two to four stitches of 6-0 catgut. Sodium sulfacetamide and atropine ointment were instilled topically and the eyes were patched. In three patients the fellow eyes required transconjunctival cryotherapy. This was achieved using topical cocaine instilled prior to the start of surgery and supplemented by topical proparacaine just prior to the cryotherapy.

### Postoperative Course

After surgery patients were observed in the recovery room or on patient floors for three to four hours, and then discharged. They were examined as outpatients on the second postoperative day, the ninth postoperative day, and then as required. Postoperative activities were not restricted except for strenuous physical exercise. The pain medications required included acetaminophen 325mg-650mg orally as needed. Patient number six in the table required intramuscular injection of Demerol 50-75mg every 4-6 hours PRN for pain (see below). One patient received codeine 30mg every six hours as needed for pain. Aside from one patient discussed below (patient #6, table) all patients experienced the usual minimal postoperative discomfort.

### RESULTS

Fifteen of the sixteen patients (93.7%) had successful retinal reattachment after the first operation (Table I). One of the seventeen patients required four procedures to achieve reattachment. The pre-operative and post-operative visual acuities are found in the Table I.

Patient number six in the table bears further explanation. He initially had a superior nasal one quadrant detachment with two holes in the left eye and one hole without a detachment in the right eye. The retinal

reattachment procedure was carried out as described with drainage of subretinal fluid and the right eye was treated with transconjunctival cryotherapy. The retina in the left eye reattached in two days, but the patient complained of persistent and severe pain. Anterior segment ischemia was suspected, although he had none of the other signs and symptoms of anterior segment ischemia such as corneal edema and vascularization, inflammation in the anterior chamber, iris edema or atrophy, or lenticular opacification. He was admitted to the hospital and the encircling band was cut thirteen days after the initial surgery (the second operation). Subsequently he developed an infected buckle while hospitalized and the buckle and band were removed twenty days after the initial surgery (the third operation). The retina redetached and six weeks after the first procedure an extensive scleral buckling procedure was performed (the fourth operation). The retina reattached and has remained attached for seven and a half months.

All patients are asymptomatic and all retinas are flat after an average follow-up of 8.3 months (range: 4-15 months).

### DISCUSSION

Retinal detachment surgery is generally regarded as an in-patient hospital procedure. In fact, the author is not aware of any references to retinal detachment surgery performed on an out-patient basis. To assess the feasibility of performing out-patient retinal detachment surgery, I began offering the procedure to a selected group of patients who had detachments not involving subretinal fluid drainage and who could cooperate with the frequent follow-up observations thought to be necessary. After the initial cases, I learned that the follow-up contact, if the patients were properly instructed, did not need to be more frequent than we prescribed. Thus, I began selecting patients without regard to the type of detachment, but solely on the basis of their willingness to have the surgery performed in this manner.

Overall surgical success for primary rhegmatogenous retinal detachments is about 90%,<sup>2-3</sup> with an 80% success rate after the first operation. In this pilot study, fifteen of sixteen retinas (93.7%) were reattached with one procedure and one of sixteen retinas (6.3%) required four operations to achieve reattachment. After an average follow-up of 8.3 months (range: 4-15 months), 100% of retinas are attached.

Except for patient number six all patients were comfortable at home with analgesia achieved as needed by oral analgesics. When patient number six's pain became severe he was hospitalized and the encircling element cut. He developed his buckle infection

| No | Sex | Age | Type and Extent Of RD           | Macula | Operations         |                 |                     |               | SRF Drainage            | Outcome | VA     |         |
|----|-----|-----|---------------------------------|--------|--------------------|-----------------|---------------------|---------------|-------------------------|---------|--------|---------|
|    |     |     |                                 |        | 1                  | 2               | 3                   | 4             |                         |         | Pre-OP | Post-OP |
| 1  | F   | 21  | 1 Q, Aphakic OS                 | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/400 | 20/20   |
| 2  | F   | 53  | 1 Q                             | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/30  | 20/20   |
| 3  | F   | 49  | 1 Q, RD OD<br>Hole OS           | On     | 1 QB ID<br>Cryo OS |                 |                     |               | -                       | Flat    | 20/30  | 20/20   |
| 4  | M   | 55  | 2 Q OS                          | Off    | 1 QB               |                 |                     |               | +                       | Flat    | 20/200 | 20/20   |
| 5  | F   | 53  | 1 Q OS                          | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/40  | 20/20   |
| 6  | M   | 69  | 1 Q RS, 2Q Holes<br>OS, Hole OD | On     | 1 QB OS<br>Cryo OD | Band<br>Severed | Buckle<br>Taken Out | Re<br>Buckled | +<br>1 st &<br>4ph ops. | Flat    | 20/2   | 20/20   |
| 7  | M   | 49  | 2 RD in 2Q OS<br>2 holes OD     | On     | 2 QB OS<br>Cryo OD |                 |                     |               | -                       | Flat    | 20/25  | 20/20   |
| 8  | M   | 83  | 3 Q, Pseudo-<br>phakic OS       | Off    | 3 QB               |                 |                     |               | +                       | Flat    | 20/200 | 20/20   |
| 9  | M   | 67  | 2 RD on One Q                   | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/25  | 20/20   |
| 10 | M   | 67  | 2 Q, Aphakle                    | On     | 1 QB               |                 |                     |               | +                       | Flat    | 20/30  | 20/20   |
| 11 | F   | 72  | 1 Q, Pseudo<br>phakic OD        | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/40  | 20/20   |
| 12 | F   | 66  | 1 Q OD                          | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/20  | 20/20   |
| 13 | F   | 18  | 1 Q OS                          | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/20  | 20/20   |
| 14 | F   | 53  | 1 Q OS                          | On     | 1 QB               |                 |                     |               | -                       | Flat    | 20/20  | 20/20   |
| 15 | M   | 54  | 2 Q OS                          | On     | 2 QB OS            |                 |                     |               | +                       | Flat    | 20/40  | 20/20   |
| 16 | M   | 54  | 1 Q OS                          | On     | 1 QB OS            |                 |                     |               | +                       | Flat    | 20/30  | 20/20   |

Q: Quadrant

B: Buckling

OD: Right eye

OS: Left eye

while hospitalized.

Most preoperative activity restrictions for retinal detachments can be achieved at home. There are, of course, exceptions such as giant tears and rhegmatogenous retinal detachments with an attached macula, which are felt likely to progress rapidly if not promptly positioned and operated upon. Most detachments do not, however, progress so quickly. The important factors in reattaching a detached retina are (1) to properly seal the hole (generally achieved by an intrascleral or extrascleral plombage) and (2) to create a thermal chorioretinal adhesion. If these goals are achieved, most retinas will flatten with reabsorption of the subretinal fluid regardless of the physical restrictions placed on the patient's activity. If the technical goals are not achieved, then postoperative positioning restrictions will have little effect on reattaching the retina. In such cases, re-operation may be required. The extent and the duration of restriction of patient's physical activities in the postoperative period has been a matter of dispute.<sup>4-8</sup> In fact, such activity restrictions may have no significant influence on the success of retinal detachment surgery.<sup>9</sup>

Our policy for in-patient activities in the postoperative period has been to allow the patient to be up and about as soon as they are able. The observation that this did not decrease the success rate led to the undertaking of this feasibility study for out-patient retinal detachment surgery.

The results of this small prospective pilot study suggest that it is possible to handle most primary

rhematogenous retinal detachments on an out-patient basis, and that hospitalization and post-operative bed-rest are probably not necessary. Complications can be properly detected in the course and dealt with in a timely fashion. Failures will occur and they too can be dealt with adequately. Ambulatory retinal detachment surgery eliminates the inconvenience of hospitalization and dramatically reduces the cost of the surgery. In properly informed and selected patients, it is justified.

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