RESEARCH LETTER

Retinal Complications Associated With Pars Plana Vitrectomy for Macular Holes or Epiretinal Membranes in Eyes With Previous Retinal Detachment Repair

Pars plana vitrectomy (PPV) is associated with risk of intraoperative retinal tears (RTs) and postoperative rhegmatogenous retinal detachment (RRD). Eyes undergoing RRD repair are at higher risk for developing subsequent epiretinal membranes (ERMs) that may compromise vision.1,2 For cannulated surgery as compared with standard 20-gauge PPV, we previously reported markedly lower of risk of intraoperative RT (3.3% vs 23.0%, respectively) and a trend toward reduced risk of postoperative RD (2.8% vs 5.9%, respectively).3 However, in eyes with previous RRD repair, risks of these events are not well documented. Therefore, we evaluated eyes with previous RRD repair undergoing PPV for ERMs or macular holes (MHs) and compared them with eyes without prior RRD.

Methods | A retrospective review was performed on a consecutive series of eyes undergoing PPV for MH or ERM from January 1, 2003, through December 31, 2009.3 From these, cases that had undergone prior RRD repair were selected for this study. The variables studied included patient demographic characteristics, interventions at prior RRD repair, and microsurgical approach. The study was approved by the institutional review board of the Medical College of Wisconsin. The requirement for written informed consent was waived by the institutional review board.

Results | A total of 466 eyes underwent PPV for MH or ERM, of which 40 eyes (10 with MH and 30 with ERM) had a history for written informed consent was waived by the institutional review board. The requirement for written informed consent was waived by the institutional review board.

<table>
<thead>
<tr>
<th>Variable</th>
<th>No./Total No. (%)</th>
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<tbody>
<tr>
<td>Eyes without prior RD</td>
<td>54/426 (12.7) 21/426 (4.9)</td>
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<tr>
<td>Eyes with prior RD repair</td>
<td>1/40 (2.5) 3/40 (7.5)</td>
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<tr>
<td>MHs vs ERMs</td>
<td>0/10 vs 1/30 (3.3) 1/10 (10.0) vs 2/30 (6.6)</td>
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<tr>
<td>Prior SB + PPV vs PPV</td>
<td>1/29 (3.4) vs 0/10 1/29 (3.4) vs 2/10 (20.0)</td>
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<tr>
<td>Aphakic vs pseudophakic vs phakic</td>
<td>1/5 (20.0) vs 0/26 0/5 vs 3/26 (11.5) vs 0/9</td>
</tr>
<tr>
<td>Standard 20-gauge vs cannulated surgery</td>
<td>1/23 (4.3) vs 0/17 1/23 (4.3) vs 2/17 (11.7)</td>
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</table>

Abbreviations: ERMs, epiretinal membranes; MHs, macular holes; PPV, pars plana vitrectomy; RD, retinal detachment; RT, retinal tears; SB, scleral buckle.

Discussion | Eyes with prior RRD repair that undergo PPV for ERM or MH do not appear to be at significantly different risk for postvitrectomy RRD compared with eyes without a history of RRD that undergo such surgery. We observed a somewhat reduced rate of intraoperative RT in eyes with previous RD repair (P = .07) and a lower risk of recurrent RD if previous SB had been performed (P = .16), although the differences did not reach statistical significance. Our study is limited by its retrospective design and small number of patients in subgroups. Council et al6 reported a recurrent RD rate of 6.7%, which is comparable to our observed rate of 7.5%. In distinction, our study cohort was derived from a larger pool3 that provided a reference group without previous RD.

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Retinal Implants: Analysis of the News Media Perspective

Retinal implants offer an innovative solution to restoring sight to those with severe vision loss. Although research is still in its infancy, developing a retinal prosthesis is possible given advances in microelectronic technology. The complexity of the bioengineering task and the proprietary nature of the research, however, make assessment of progress challenging even for medical professionals. The public acquires information about emerging retinal prostheses through mass media, but journalists may not be fully qualified to understand and accurately report the technical developments.

We investigated the quality of news reports of retinal implants from 3 major news sources in the United States (television, newspaper, and Internet) and describe our findings as the first generation of devices become commercially available.

Methods | Peer-reviewed literature was identified through a computerized search of PubMed using key terms “retinal implant” and “retinal prosthesis.” Additional studies were found through spin-off references. Media analysis focused on main news outlets as determined by television viewership, newspaper circulation, and Internet traffic for news media websites. Television news was subdivided for analysis into broadcast and cable programming. Three readers (A.T.C., A.J.C., and J.J.C.) independently graded media reports published between June 24, 1999, and July 26, 2012, and compared those news reports with the peer-reviewed literature from which they were derived. The readers used a Likert scale (grades 1-5, with a grade of 5 representing strongest agreement with peer-reviewed literature) to assess the following: (1) scientific accuracy; (2) journalistic neutrality; and (3) realistic outlook. Grades from each report and category were summed to calculate mean total grades. Interobserver reliability was determined using intraclass coefficient for agreement, based on analysis of variance. A 2-way random-effects model was used to render reliability estimates applicable to a random broad population of readers (appendices are available on request).

Results | Table 1 shows research groups, implant names, and technical features of retinal prostheses under development that have been reported through news outlets. A total of 93 media reports on retinal prostheses were identified and analyzed. Mean grades for media reports were 10.3 for Internet, 10.3 for broadcast news, 11.1 for cable news, and 12.4 for newspaper. Overall, newspaper coverage was graded statistically higher than broadcast and Internet news (Table 2). Newspaper reports generally contained more detail and presented both positive and negative aspects of retinal implants. Internet, cable, and broadcast news received the lowest categorical grades for realistic outlook.

Media reports tended to cluster in time, but grades of reports were independent of publication date (correlation coefficient...