



# Obstetric opinions regarding the method of delivery in women that have had surgery for retinal detachment

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## DECLARATIONS

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All authors  
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## Summary

**Objectives** We sought to determine international obstetric opinions regarding the influence of a history of rhegmatogenous retinal detachment on the management of labour and to review the evidence base.

**Design** A questionnaire containing closed questions, with pre-coded response opinions, was designed to obtain a cross-section of the obstetric opinions.

**Setting** Questionnaires were distributed at the 20th European Congress of Obstetrics and Gynaecology in Lisbon, Portugal.

**Participants** One hundred questionnaires were distributed among obstetricians attending the congress and 74 agreed to participate.

**Main outcome measures** Participants were asked to state their preferred method of delivery in such patients and the reasons for their recommendation. Furthermore, we questioned whether there was any difference in opinions depending on generation.

**Results** The majority of respondents (76%) would recommend assisted delivery (either Caesarean section or instrumental delivery), whereas the remaining 24% would advise normal delivery. Generation is not a factor influencing this decision. The majority (58%) based their decision to alter the management of labour on their personal opinion of standard of care.

**Conclusion** The literature shows that there is little evidence to support the belief that previous retinal surgery increases the risk of re-detachment of the retina during spontaneous vaginal delivery. This short survey shows that the majority of an international sample of obstetricians questioned does not share this viewpoint. Therefore, unnecessary interventions may be occurring in otherwise fit women with a history of retinal detachment.

## Introduction

Frequent inquiries to one of the authors (a retinal surgeon) from pregnant women with a history of surgery for retinal detachment, drew our attention to the possibility that this condition influences the management of labour. In retinal detachment fluid collects in the potential space between the sensory retina and the retinal pigment epithelium. By far the most common cause is the presence of a retinal break which allows fluid from the vitreous cavity into the subretinal space. If a break is present the diagnosis is 'rhegmatogenous' retinal detachment (RRD). These breaks occur spontaneously, and when detected they are treated with retinal surgery. In the past it was believed that labour exerts 'pressure' on the eye and increases the possibility of retinal detachment. Although the association between serous (exudative) retinal detachment and eclampsia during pregnancy is well documented, there have been no convincing reports of the occurrence of RRD in pregnancy.

Pregnant women with a history of surgery for RRD usually disclose this information at the antenatal booking visit. Two surveys conducted in the UK suggest that obstetricians may recommend either an assisted vaginal delivery with forceps, vacuum extraction, or a Caesarean section to women who had surgery for RRD. The reason for this decision is fear of retinal re-detachment,<sup>1,2</sup> a viewpoint that is not shared by retinal detachment surgeons.

Our objective was to determine whether the view, that vaginal delivery is contraindicated in such patients, is prevalent among obstetricians from an international audience, and to review the evidence base. We also aimed to determine which method of delivery obstetricians would recommend for these patients, and the reasons for their recommendation. Furthermore, due to the recent shift towards more conservative management for degenerative retinal holes and tears, we questioned whether there was any difference in opinions depending on generation.

## Methods

A questionnaire containing closed questions, with pre-coded response opinions, was designed to obtain a cross-section of the obstetric opinions.

The layout of the questionnaire was clear and simple in an effort to facilitate quick and comprehensive reading. A questionnaire was given to obstetricians selected randomly, at the European Congress of Obstetricians and Gynaecology (ECOG) in 2008 held in Lisbon, Portugal. Information about the aim of the study, as well as potential benefits, was given to each participant. Once the data had been collected, a comparison was made between the responses provided by two generations of obstetricians, namely those practising obstetrics for less than 20 years (group 1), and those practising for more than 20 years (group 2). The  $\chi^2$  test for proportions was used and statistical significance was implied if the *P* value was less than or equal to 0.05.

## Results

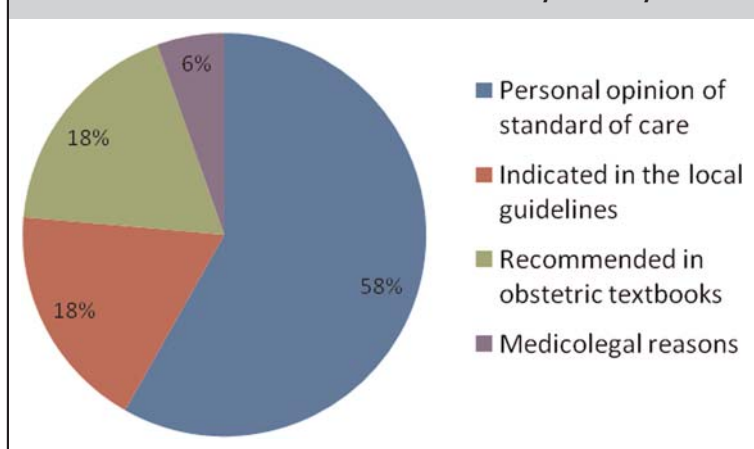
One hundred obstetricians were approached and 74 agreed to participate, producing 74 usable data-sets. The majority (76%) of responders reported that a history of surgery for RRD would influence their management of delivery in an otherwise normal pregnant woman. More than half (54%) would recommend delivery by Caesarean section. The remaining 22% would recommend either Caesarean section or instrumental delivery. The reasons for their choice are shown on the chart of Figure 1.

The majority (58%) based their decision to alter the management of labour on their personal opinion of standard of care. A further 18% based their decision on local guidelines. The same proportion (18%) was influenced by what they read in obstetric textbooks and a small proportion (6%) stated that medicolegal reasons influenced their decision.

More than one-third (35%) of the obstetricians that would be influenced by a history of RRD suggested that such a patient should not be allowed to push during the second stage of labour due to fears of increasing intraocular pressure causing re-detachment of the retina. As indicated in the free comments section, 13% of these obstetricians would ask for ophthalmological advice.

Among obstetricians practising for more than 20 years (group 1, mean  $28 \pm 6$  years experience) 76% would recommend assisted delivery (either Caesarean section and/or instrumental delivery), and among obstetricians practising for less than

**Figure 1**  
Reasons that influence the decision for management of labour in the 76% of obstetricians that would be influenced by a history of RRD



20 years (group 2, mean  $10 \pm 6$  years experience) 74% would recommend intervention to a patient with a past history of RRD. Analysis of results by groups showed no difference in opinions.

## Discussion

The results of this survey indicate that three-quarters of obstetricians that attended the ECOG in 2008 may choose to intervene in the delivery of women who have had surgery for RRD because of the perception that spontaneous delivery is likely to cause a re-detachment of the retina. Only one-quarter considered that this condition would not pose a risk of further detachment. Generation is not a factor influencing this decision. While previous surveys have looked at the perception of obstetricians in the UK, our survey looked at the opinions of an international obstetric audience. Our survey, as well as the two previously published surveys, are small and only offer a cross-section of obstetric opinions.<sup>1,2</sup> They do not indicate the proportion of interventions that occur due to ocular indications.

Inglesby *et al.* sent questionnaires to randomly selected obstetricians across the UK. Three-quarters of the responders considered a 'history of retinal detachment surgery an indication for obstetric intervention during labour'.<sup>1</sup> More recently Elsherbiny *et al.* surveyed the opinions of obstetricians in the West Midlands region of

the UK. Participants were asked to stratify high myopia, previous retinal detachment, family history of retinal detachment and previous laser treatment into no, low-, moderate or high-risk categories for occurrence of retinal detachment during labour. The majority stratified high myopia in the no or low-risk categories (59%), previous retinal detachment in the moderate or high-risk categories (71%), family history of retinal detachment in the low- or moderate risk categories (73%) and previous laser treatment in the moderate or high-risk categories (56%). When asked 'which eye condition, if any, would affect their clinical choice between vaginal delivery and Caesarean section', only 14% of responders indicated that, no ocular condition would affect their choice. A similar proportion (13.6%) answered that their choice would be affected by a history of retinal detachment. Sixty-one percent chose not to answer the question, indicating that the majority of the population surveyed is confused as to what is best practice.<sup>2</sup> Furthermore, 48% identified previous retinal detachment as an indication for Caesarean section. The results of our survey are in line with the UK-based data and possibly indicate that this viewpoint is currently slightly more prevalent internationally.

As shown by the obstetricians' comments, in this survey, the rationale for this belief is based on a misunderstanding of the pathophysiology of RRD. The comments were all very similar in explaining that spontaneous delivery should be avoided due to the perceived increased risk of detachment resulting from a rise in the intraocular pressure secondary to Valsalva-like manoeuvres during the second stage of labour. There is no evidence suggesting that increasing the intra-abdominal pressure also increases the intraocular pressure. The latter can only be caused by conditions that affect aqueous drainage in the anterior chamber of the eye, such as glaucoma. In addition, increased intraocular pressure is not a risk factor for RRD. There is no reason why the physiological stresses of labour should increase the likelihood of RRD in these women.

The need to moderate the management of labour to reduce the risk of retinal detachment in 'high-risk women' was advocated in earlier studies.<sup>3-5</sup> The authors recommend caution in the management of labour in women with high myopia, known retinal holes and lattice, and

previous retinal detachment. It is suggested that such women undergo induction of labour, to minimize the duration of the second stage of labour, or instrumental delivery and in some cases Caesarean section.

On reviewing the literature we identified three prospective observational studies that investigated the effects of labour in women with the relevant retinal changes. The largest study by Neri *et al.* reported no retinal changes in the 50 myopic women (4.5–15D myopia) that were fundoscopically examined pre- and post-delivery, despite the identification of retinal degenerative changes (lattice-like degeneration and retinal breaks).<sup>6</sup> A more recent study of similar design by Prost *et al.* also reported no progression of retinal changes.<sup>7</sup> A smaller study by Landau *et al.* examined 10 women (19 deliveries) with more serious risk factors for RRD and found no signs of change postpartum.<sup>8</sup>

A recent retrospective study by Socha *et al.* in Poland found that, in the nine-year study period, 100 out of the 4895 (2.04%) Caesarean sections were performed due to an ocular indication. The most common ocular indications included myopia, retinopathy, glaucoma, imminent retinal detachment and past retinal detachment.<sup>9</sup> These data suggest that interventions due to ocular indications may occur in other countries as well. The proportion is probably small but unnecessary procedures should be avoided due to the associated medical and psychological consequences they may have.

## Conclusion

The literature shows that there is little evidence to support the belief that previous retinal surgery

increases the risk of re-detachment of the retina during spontaneous vaginal delivery. This short survey shows that the majority of an international sample of obstetricians questioned does not share this viewpoint. This may suggest that unnecessary interventions, including surgery, may occur during labour in otherwise fit women. A history of retinal detachment should not be considered an indication for instrumental delivery or Caesarean section.

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