

Perception and practices of obstetricians and ophthalmologists eye diseases during pregnancy

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ABSTRACT

Aims: Cesarean delivery can be crucial for both the mother and the baby, with indications often stemming from fetal or maternal health concerns. In addition to obstetric factors, non-obstetric conditions such as eye diseases frequently necessitate cesarean delivery. Among the eye diseases commonly encountered during pregnancy are refractive errors, diabetic retinopathy, ocular malignancies, and glaucoma. Some of these conditions may exacerbate during pregnancy due to related health issues like diabetes or hypertension, or they may be aggravated by the stress of vaginal labor. Consequently, the decision regarding the continuation of pregnancy, the mode of delivery, and even the choice of anesthesia can vary depending on the specific eye disease and its severity or characteristics. The aim of this study was to assess the knowledge and attitudes of obstetricians regarding the management of pregnant women with different eye conditions, with the ultimate goal of increasing awareness among obstetricians.

Methods: In this study, a total of 46 obstetricians and 30 ophthalmologists practicing in Türkiye were included. Participants were surveyed to gather information, as no existing survey or scale pertaining to our study subject was available. Therefore, a novel survey form was developed based on previous studies addressing similar topics, and this survey was administered to all participants.

Results: During the study, both obstetricians and ophthalmologists were queried about the management of 17 distinct eye diseases occurring during pregnancy. Ophthalmologists advocated for normal vaginal delivery (NVD) in 13 out of the 17 eye diseases. On the other hand, obstetricians opted for NVD in 5 out of the 17 cases, while recommending ophthalmology consultation in 12 out of the 17 scenarios.

Conclusion: It has been noted that ophthalmologists suggest vaginal birth in 9 out of 17 eye diseases, whereas obstetricians tend to recommend consulting ophthalmologists rather than making independent decisions. This trend may stem from the fact that obstetricians may lack sufficient knowledge about eye diseases, as these conditions are not primarily within the scope of pregnancy-related care. Additionally, obstetricians might be inclined to share responsibility, possibly due to the rise in malpractice cases against obstetricians in recent years in Türkiye.

Keywords: Normal spontaneous vaginal delivery, cesarean section, ophthalmology, pregnancy-related diseases, obstetrician, non-obstetric reason

INTRODUCTION

The escalating rates of cesarean sections worldwide present a significant challenge to healthcare systems. Similar to trends observed in other nations, Türkiye has seen a steady rise in cesarean delivery rates. In 2021, Türkiye ranked highest among the Organization for Economic Co-operation and Development (OECD) countries, with a cesarean rate of 58.4%.¹ Indeed, unnecessary cesarean surgeries pose risks for both the mother and the baby. These risks include infection, complications related to anesthesia, psychological implications, excessive bleeding, and the potential need for blood transfusions, especially in cases of premature birth.^{2,3}

Given the associated risks, it's imperative to exercise caution and discretion when considering a cesarean section.

Throughout pregnancy, numerous hormonal, metabolic, and physiological shifts take place, which can impact the retina. These changes may precipitate the onset of certain eye conditions such as hypertensive retinopathy-choroidopathy, exudative retinal detachment, retinal vascular occlusive diseases, idiopathic central serous chorioretinopathy, and exacerbate pre-existing conditions.^{4,5} Hence, meticulous monitoring is essential in the management of a pregnancy complicated by eye diseases.

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Cesarean delivery can be crucial for both the mother and the baby. In the appropriate patient, accurate diagnosis and timely intervention can be essential in preventing maternal-fetal mortality and morbidity.⁶ Cesarean section may be indicated due to fetal or maternal factors. Common maternal reasons include a history of previous cesarean deliveries, severe preeclampsia, and pelvic stenosis. Additionally, various eye diseases may necessitate cesarean delivery as part of the management strategy.⁷ Indeed, according to research, cardiovascular and eye diseases are among the most common non-obstetric indications for cesarean sections.⁷ The most frequently reported eye diseases during pregnancy include refractive errors, diabetic retinopathy, ocular malignancies, and glaucoma.⁸ Some of these eye diseases may worsen during pregnancy, especially in the presence of pregnancy-related conditions such as diabetes and hypertension. Additionally, the stress of vaginal labor may exacerbate existing eye diseases that were present before or during pregnancy.⁹ As a result, the management decisions regarding the continuation of pregnancy, the method of delivery, and even the choice of anesthesia may vary depending on the specific characteristics and severity of the eye diseases involved.^{10,11} The decision-making process is influenced by the severity and nature of the disease. Obstetricians, being the primary caregivers for pregnant women, play a crucial role in assessing these factors and making informed decisions regarding the management of eye diseases during pregnancy.

This study aimed to assess the knowledge and attitudes of obstetricians regarding the management of pregnant women with different eye diseases. Additionally, it sought to raise awareness among obstetricians about the importance of effectively managing eye conditions during pregnancy.

METHODS

Approval for this study was obtained from the University of Health Sciences Hamidiye Scientific Researches Ethics Committee (Date: 18.11.2022, Decision No: 22/422), and all procedures adhered to the principles outlined in the 1995 Declaration of Helsinki (Brazil, revised in 2013). The sample size comprised 76 participants, including 46 obstetricians and 30 ophthalmologists. The sample size calculation considered a population size (n) of 1250, a hypothesized frequency of the outcome factor in the population (p) of $95\% \pm 5$, confidence limits (d) of 5%, and a design effect (DEFF) of 1.1.¹² Questions were administered to study participants through a survey format. Since no pre-existing survey or scale pertaining to the subject of this study was available, a new survey form (Table 1) was developed based on previous research addressing similar topics. This survey form was then distributed to all study participants for data collection.¹²⁻¹⁴ Each participant provided their consent before undergoing evaluation with the same survey. Doctors from disciplines other than ophthalmology and obstetrics, as well as those who did not consent to participate or who did not practice in Turkey, were excluded from the study.

Statistical Analysis

Descriptive statistics, including mean, standard deviation, median, lowest and highest values, as well as frequency and ratio values, were employed to analyze the data. The statistical software SPSS 28.0 was utilized for the analyses. Percentage values between groups were compared using the Two-way Chi-squared test. Statistical significance was determined at $p < 0.05$.

RESULTS

In our study, 30 ophthalmologists and 46 obstetricians participated. The mean age of ophthalmologists was 33.8 ± 4.8 years, while the average age of obstetricians was 34.9 ± 7.9 years. The majority of ophthalmologists were women (60%), whereas among obstetricians, the distribution between men and women was equal (Table 2).

In the survey, recommendations regarding elective abortion in pregnancies complicated by various eye diseases were compared between ophthalmologists and obstetricians. All participants in both groups did not recommend elective abortion for pregnancies complicated by conjunctivitis in the first trimester. Ophthalmologists recommended elective abortion/termination more than obstetricians for pregnancies complicated by malignant orbital tumors and malignant intraocular tumors ($p < 0.05$). Conversely, ophthalmologists were more likely to recommend continuation of pregnancy compared to obstetricians for pregnancies complicated by recurrent ophthalmic herpes, history of refractive surgery, history of retinal detachment, history of glaucoma, retinal vascular diseases, and intraocular hemorrhage ($p < 0.05$). However, there was no significant difference between the two groups in recommendations for continuation of pregnancy in cases with a history of cataract surgery ($p > 0.05$) (Table 3).

The decisions regarding mode of delivery and anesthesia in pregnant women with various eye diseases were compared between obstetricians and ophthalmologists. There was no significant difference between the two groups in terms of responses to mode of delivery in pregnant women with active conjunctivitis, recurrent ophthalmic herpes, refractive surgery history, uncontrolled glaucoma, advanced glaucoma, retinal break, and penetrating keratoplasty ($p > 0.05$). In cases of keratoconus, cataract-pseudophakic eye surgery, history of eye surgery due to trauma, and advanced myopia, ophthalmologists statistically significantly recommended normal vaginal birth ($p < 0.05$). Cesarean section with spinal anesthesia was recommended by ophthalmologists in cases of retinal detachment history, macular edema/proliferative diabetic retinopathy, vitreous cavity hemorrhage, retinal vascular disorders/anomalies, and malignant orbital tumor ($p < 0.05$). Additionally, ophthalmologists preferred cesarean section under general anesthesia more frequently than obstetricians in cases of a history of retinal detachment ($p < 0.05$). It was observed that obstetricians frequently decided to consult ophthalmologists in the management of pregnant women with various eye diseases (Table 4).

Table 1. Survey form				
A survey study between obstetricians and ophthalmologists regarding different eye diseases during pregnancy				
Age:			Gender:	
Hospital:			Clinic:	
Would you decide on elective abortion in various eye diseases?				
	Yes	No	No comment	
Conjunctivitis				
Recurrent ophthalmic herpes				
Refractive surgery history				
Malign orbital tumor				
Malign intraocular tumor				
Cataract operation history				
Retinal detachment history				
Glaucoma history				
Retinal vascular diseases				
Intraocular hemorrhage				
If you encounter a term pregnancy with one of the following eye diseases, which method of delivery would you recommend?				
Diseases or special circumstances	NVD	C/S + GA	C/S + SA	I want an Ophthalmology Consultation*
Conjunctivitis				
Recurrent ophthalmic herpes				
Refractive surgery history (PPK, LASIK, Phakic IOL, RK)				
Keratoconus				
Cataract and pseudophakic eye surgery				
Uncontrolled glaucoma				
Advanced glaucoma				
History of eye surgery due to trauma				
Advanced myopia				
Retinal break				
Retinal detachment history				
Macular edema or PDR: proliferative diabetic retinopathy				
Vitreous cavity hemorrhage				
Malign intraocular tumor (melanoma etc.)				
Retinal vascular disorders and anomalies				
Malign orbital tumor				
PKP: Penetrating Keratoplasty				
*Only obstetricians, NVD: Normal vaginal delivery, CS: Caesarean section, GA: General anesthesia, SA: Spinal anesthesia, PRK: Photoreactive keratectomy, LASIK: Laser-assisted in situ keratomileusis, Phakic IOL: Phakic intraocular lens, RK: Radial keratotomy, PDR: Proliferative diabetic retinopathy, PKP: Penetrating keratoplasty				

Table 2. Age and gender distribution of survey participants			
Ophthalmologists (n=30)	Min-Max	Median	Mean±SD/n%
Age (years)	25.0-43.0	33.0	33.8±4.8
Gender	Male		10 (40.0)
	Female		15 (60.0)
Obstetricians (n=46)			
Age (years)	25.0-63.0	33.5	34.9±7.9
Gender	Male		23 (50.0)
	Female		23 (50.0)
Min: Minimum, Max: Maximum, SD: Standart deviation			

DISCUSSION

In a study conducted by Kerry et al.,¹⁵ it was noted that healthcare professionals may opt to consult colleagues from different specialties as a strategy to mitigate the risk of malpractice lawsuits. Similar to the findings of the study by Kerry et al., our research revealed that obstetricians frequently sought consultations from ophthalmologists. This trend could be attributed to the current medicolegal landscape, where obstetricians may seek to share responsibility. Additionally, obstetricians may feel less confident in managing eye diseases, as obstetrics and ophthalmology are distinct specialties. When considering the percentage rates, it was

Table 3. Doctors' answers to the question "Would you decide on elective abortion in various eye diseases?"

		Ophthalmologists (n: 30) (%)	Obstetricians (n: 46) (%)	p Value
Conjunctivitis	Yes	0 (0.0)	0 (0.0)	
	No	30 (100.0)	46 (100.0)	
	No comment	0 (0)	0 (0.0)	
Recurrent ophthalmic herpes	Yes	1 (3.3)	2 (4.3)	
	No	29 (96.7)	37 (80.4)	p<0.001 ^x
	No comment	0 (0)	7 (15.2)	
Refractive surgery history	Yes	0 (0.0)	2 (4.3)	
	No	30 (100.0)	35 (76.1)	p<0.001 ^x
	No comment	0 (0)	9 (19.6)	
Malign orbital tumor	Yes	14 (46.6)	6 (13.0)	
	No	8 (26.7)	21 (45.7)	p<0.001 ^x
	No comment	8 (26.7)	19 (41.3)	
Malign intraocular tumor	Yes	16 (53.3)	7 (15.2)	
	No	5 (16.7)	16 (34.8)	p<0.001 ^x
	No comment	9 (30.0)	23 (50.0)	
Cataract operation history	Yes	0 (0.0)	1 (2.2)	
	No	30 (100.0)	45 (97.8)	p>0.05 ^x
	No comment	0 (0.0)	0 (0.0)	
Retinal detachment history	Yes	10 (33.3)	5 (10.9)	
	No	14 (46.7)	33 (71.7)	p<0.001 ^x
	No comment	6 (20.0)	8 (17.4)	
Glaucoma history	Yes	11 (36.7)	1 (2.2)	
	No	16 (53.3)	38 (82.6)	p<0.001 ^x
	No comment	3 (10.0)	7 (15.2)	
Retinal vascular diseases	Yes	6 (20.0)	5 (10.9)	
	No	21 (70.0)	31 (67.4)	p=0.026 ^x
	No comment	3 (10.0)	10 (21.7)	
Intraocular hemorrhage	Yes	0 (0.0)	3 (6.5)	
	No	30 (100.0)	28 (60.9)	p<0.001 ^x
	No comment	0 (0.0)	15 (32.6)	

^xTwo-way Chi-squared test

observed that ophthalmologists more often recommended normal vaginal delivery (NVD). This preference likely stems from the fact that eye diseases are not typically considered indications for cesarean section.¹⁶ Indeed, it was noted that those who frequently recommended cesarean section also tended to recommend spinal anesthesia. It's well-established that cesarean sections performed under general anesthesia can result in increased fetal exposure, potentially leading to adverse neonatal outcomes.¹⁷

In a cohort study conducted in Poland, eye diseases accounted for 2.04% of all cesarean indications. Remarkably, excluding obstetric reasons, eye diseases ranked second only to hypertension in terms of cesarean indications.⁷ In another study by Liu et al.,¹⁶ the rates of cesarean delivery due to various eye diseases were reported as follows: myopia accounted for 57%, retinopathy for 20%, retinal detachment for 7%, and glaucoma for 5%.¹² In the study conducted by Shemer et al.,¹⁸ it was highlighted that opting for a normal vaginal birth in subsequent pregnancies of patients with a history of retinal

detachment does not elevate the risk of recurrent retinal detachment.

In this current study, it was found that ophthalmologists most frequently recommend cesarean section for the following eye diseases: retinal break (73.3%), retinal detachment (100%), malignant orbital tumors (83.3%), retinal vascular diseases (73.3%), advanced glaucoma (83.3%), history of eye surgery due to trauma (86.7%), macular edema/proliferative retinopathy (70%), vitreous cavity hemorrhage (90%), and penetrating keratoplasty (90%). It was noted that gynecologists frequently sought advice from ophthalmologists before opting for a cesarean section.

One in ten persons have lattice degeneration, which is a thinning of the retina that typically shows no symptoms. However, there is a higher chance of retinal detachment in myopia with lattice degeneration. Upon reviewing the literature, it became evident that there was no agreement on whether or not to prescribe cesarean sections for these patients.

Table 4. Doctors' decision on mode of delivery in various eye diseases				
		Ophthalmologists (n:30) (%)	Obstetricians (n:46) (%)	p value
Active conjunctivitis	NVD	30 (100.0)	37 (80.4)	p=0.117 ^x
	Caesarean+Spinal Anesthesia	0 (0.0)	1 (2.2)	
	I want an ophthalmology consultation*	0 (0.0)	8 (17.4)	
Recurrent ophthalmic herpes	NVD	28 (93.3)	23 (50.0)	p=0.158 ^x
	Caesarean+general anesthesia	0 (0.0)	1 (2.2)	
	Caesarean+spinal anesthesia	2 (6.7)	2 (4.3)	
	I want an ophthalmology consultation*	0 (0.0)	20 (43.5)	
Refractive surgery history	NVD	21 (70.0)	16 (34.8)	p=0.316 ^x
	Caesarean+general anesthesia	1 (3.3)	2 (4.3)	
	Caesarean+spinal anesthesia	8 (26.7)	5 (10.9)	
	I want an ophthalmology consultation*	0 (0.0)	23 (50.0)	
Keratoconus	NVD	19 (63.4)	23 (50.0)	p=0.008 ^x
	Caesarean+general anesthesia	1 (3.3)	0 (0.0)	
	Caesarean+spinal anesthesia	10 (33.3)	4 (8.7)	
	I want an ophthalmology consultation*	0 (0.0)	19 (41.3)	
Cataract and pseudophakic eye surgery	NVD	26 (86.7)	28 (60.9)	p=0.030 ^x
	Caesarean+spinal anesthesia	4 (13.3)	0 (0.0)	
	I want an ophthalmology consultation*	0 (0.0)	18 (39.1)	
Uncontrolled glaucoma	NVD	5 (16.7)	3 (6.5)	p=0.864 ^x
	Caesarean+general anesthesia	9 (30.0)	5 (10.9)	
	Caesarean+spinal anesthesia	16 (53.3)	7 (15.2)	
	I want an ophthalmology consultation*	0 (0.0)	31 (67.4)	
Advanced glaucoma	NVD	5 (16.7)	2 (4.3)	p=0.067 ^x
	Caesarean+general anesthesia	7 (23.3)	7 (15.2)	
	Caesarean+spinal anesthesia	18 (60.0)	7 (15.2)	
	I want an ophthalmology consultation*	0 (0.0)	30 (65.2)	
History of eye surgery due to trauma	NVD	20 (66.7)	21 (45.7)	p=0.002 ^x
	Caesarean+general anesthesia	6 (20.0)	0 (0.0)	
	Caesarean+spinal anesthesia	4 (13.3)	3 (6.5)	
	I want an ophthalmology consultation*	0 (0.0)	22 (47.8)	
Advanced myopia	NVD	17 (56.7)	29 (63.0)	p<0.001 ^x
	Caesarean+general anesthesia	4 (13.3)	1 (2.2)	
	Caesarean+spinal anesthesia	9 (30.0)	3 (6.5)	
	I want an ophthalmology consultation*	0 (0.0)	13 (28.3)	
Retinal break	NVD	17 (56.6)	7 (15.2)	p=0.702 ^x
	Caesarean+general anesthesia	5 (16.7)	2 (4.3)	
	Caesarean+spinal anesthesia	8 (26.7)	5 (10.9)	
	I want an ophthalmology consultation*	0 (0.0)	32 (69.5)	
Retinal detachment history	NVD	0 (0.0)	3 (6.5)	p<0.001 ^x
	Caesarean+general anesthesia	8 (26.7)	3 (6.5)	
	Caesarean+spinal anesthesia	22 (73.3)	9 (19.6)	
	I want an ophthalmology consultation*	0 (0.0)	31 (67.3)	
Macular edema or PDR: proliferative diabetic retinopathy	NVD	9 (30.0)	10 (21.7)	p<0.001 ^x
	Caesarean+general anesthesia	1 (3.3)	1 (2.2)	
	Caesarean+spinal anesthesia	20 (66.7)	4 (8.7)	
	I want an ophthalmology consultation*	0 (0.0)	31 (67.3)	

Table 4. Doctors' decision on mode of delivery in various eye diseases (continues)

Vitreous cavity hemorrhage	NVD	3 (10.0)	3 (6.5)	p=0.012 ^x
	Caesarean+general anesthesia	4 (13.3)	3 (6.5)	
	Caesarean+spinal anesthesia	23 (76.7)	5 (10.9)	
	I want an ophthalmology consultation*	0 (0.0)	35 (76.1)	
Malign intraocular tumor (Melanoma etc.)	NVD	6 (20.0)	5 (10.9)	p=0.003 ^x
	Caesarean+general anesthesia	14 (46.7)	1 (2.2)	
	Caesarean+spinal anesthesia	10 (33.3)	4 (8.7)	
	I want an ophthalmology consultation*	0 (0.0)	36 (78.2)	
Retinal vascular disorders and anomalies	NVD	8 (26.7)	3 (6.5)	p=0.007 ^x
	Caesarean+general anesthesia	0 (0.0)	1 (2.2)	
	Caesarean+spinal anesthesia	22 (73.3)	6 (13.0)	
	I want an ophthalmology consultation*	0 (0.0)	36 (78.3)	
Malign orbital tumor	NVD	5 (16.7)	9 (19.6)	p<0.001 ^x
	Caesarean+general anesthesia	10 (33.3)	1 (2.2)	
	Caesarean+spinal anesthesia	15 (50.0)	1 (2.2)	
	I want an ophthalmology consultation*	0 (0.0)	35 (76.0)	
Penetrating keratoplasty	NVD	20 (66.6)	9 (19.6)	p=0.205 ^x
	Caesarean+general anesthesia	7 (23.4)	1 (2.2)	
	Caesarean+spinal anesthesia	3 (10.0)	2 (4.3)	
	I want an ophthalmology consultation*	0 (0.0)	34 (73.9)	

^xTwo-way Chi-squared test, *Only obstetricians, NVD: Normal vaginal delivery

A review research by Taub et al.¹⁹ suggested that pregnant patients with a history of significant retinal disorders, such as retinal detachment, should have a cesarean section. Lattice degeneration in pregnant women should be checked by an ophthalmologist. Therefore, any new risk variables that could influence the delivery strategy or any indications of the degeneration's advancement are assessed. Laser retinal strengthening can be done if it is thought suitable.²⁰

According to a study by Bhat et al.,²¹ diabetic retinopathy is not considered an indication for cesarean section. However, diabetic retinopathy and retinal detachment diseases may worsen during pregnancy. Therefore, it is recommended to conduct eye examinations every three months throughout pregnancy. If the diseases progress, standard treatments outside of pregnancy can be administered as necessary.²² Vaginal birth, especially in the presence of proliferative diabetic retinopathy, may increase the risk of vitreous hemorrhage with the Valsalva maneuver, which increases intraocular pressure.²³ However, there is no strong evidence to show that vaginal birth significantly worsens retinopathy compared to cesarean delivery in women with non-proliferative diabetic retinopathy. It's noteworthy that in our study, ophthalmologists tended to recommend cesarean section more frequently for pregnant women with macular edema, diabetic retinopathy, and other retinal diseases, while obstetricians opted to consult rather than deciding on the mode of delivery. However, it's important to consider existing literature suggesting that there may not be a significant difference in outcomes between cesarean section and normal vaginal delivery for these conditions. Additionally, macular edema has been known to resolve spontaneously after pregnancy without requiring further treatment. These

findings underscore the complexity of decision-making in managing pregnant women with retinal diseases and highlight the need for further research to establish the most appropriate approach to delivery in such cases.²⁴

In cases of uncontrolled and advanced glaucoma during pregnancy, the management approach may involve considering elective abortion or cesarean delivery. These decisions are typically made on a case-by-case basis, taking into account factors such as the severity of the glaucoma, the overall health of the mother and baby, and the potential risks and benefits of each option. It's important for healthcare providers to carefully evaluate the individual circumstances and preferences of the patient when making such recommendations.^{25,26} In the current study, it was observed that the majority of both ophthalmologists and obstetricians recommended the continuation of pregnancy in the first trimester. However, for term pregnant women, there was a discrepancy in recommendations. Ophthalmologists tended to recommend cesarean delivery, aligning with findings in the literature. Conversely, obstetricians exhibited hesitancy and often sought consultation from ophthalmologists before making a decision regarding the mode of delivery.

During pregnancy, various physiological changes can occur in the eye. For example, the curvature and thickness of the cornea may increase, while corneal sensitivity typically decreases. These changes are temporary and often resolve after pregnancy.^{27,28} Indeed, due to the temporary nature of these physiological changes during pregnancy, patients should not be rushed to alter their glasses or contact lens prescriptions. It's important to note that these ocular changes are unrelated to the type of birth (i.e., cesarean section or

vaginal delivery).²⁹ The most common risk factors associated with retinal detachment include advanced myopia, a history of retinal detachment, and previous retinal surgery. However, undergoing NVD does not inherently increase the risk of retinal detachment in women with this condition.^{4,27} In the current study, it was found that 56.7% of ophthalmologists and 63% of obstetricians recommended NVD for pregnant women with advanced myopia. These findings are consistent with existing literature, which suggests that NVD is often considered a safe option for women with this condition during childbirth.

In the current study, it was observed that during the first trimester, 46.6% of ophthalmologists recommended elective abortion for pregnant women with malignant orbital tumors, while 45.7% of obstetricians recommended continuation of the pregnancy, with a significant portion (41.3%) unable to express an opinion. Similarly, for pregnant women with malignant intraocular tumors, 53.3% of ophthalmologists recommended elective abortion, while 50% of obstetricians stated that they had no opinion. Regarding the delivery method, the majority of ophthalmologists (83.3% for malignant orbital tumors and 80% for malignant intraocular tumors) recommended cesarean delivery. In contrast, most obstetricians opted to consult ophthalmologists (76% for malignant orbital tumors and 78.2% for malignant intraocular tumors).

Studies on eye-related tumors during pregnancy are limited in the literature. However, some researchers suggest that increased estrogen levels during pregnancy may have a negative impact on malignant eye tumors such as melanoma. These findings underscore the complexity of managing pregnant women with eye tumors and highlight the importance of interdisciplinary collaboration between obstetricians and ophthalmologists in making informed decisions regarding pregnancy continuation and delivery methods.³⁰ In contrast, Wiedemann et al.,³¹ in a study they conducted, found that there was no change in the prognosis of malignancy in pregnant women compared to non-pregnant patients. This suggests that pregnancy may not necessarily worsen the prognosis of malignancies such as eye tumors, contrary to previous beliefs. In another study, it was concluded that the type of birth had no effect on the prognosis of malignant tumors. This suggests that the mode of delivery, whether cesarean or vaginal, does not impact the prognosis of malignancies such as eye tumors.¹²

Indeed, while cesarean delivery is often recommended in cases of genital herpes to reduce the risk of neonatal transmission, pregnancy itself typically has no direct relationship with ophthalmic herpes. Ophthalmic herpes is primarily related to viral infections affecting the eye, and its occurrence is not typically influenced by pregnancy.³² In the current study, both ophthalmologists and obstetricians recommended the continuation of pregnancy, which aligns with findings in the existing literature. However, regarding the recommendation for the type of birth, there was a difference between the two groups. Specifically, 93.3% of ophthalmologists recommended NVD, while only 50% of obstetricians did so. Additionally, 43.5% of obstetricians recommended consultation with ophthalmologists. These findings underscore the importance of interdisciplinary collaboration between obstetricians

and ophthalmologists in managing pregnant women with ophthalmic herpes.

It's notable that in cases of eye diseases unrelated to pregnancy, such as active conjunctivitis, keratoconus, eye surgery history, retinal break, and keratoplasty, ophthalmologists are more inclined to recommend NVD, while obstetricians tend to opt for consultation with ophthalmologists rather than making decisions independently. This trend could be attributed to several factors. Firstly, obstetricians may lack sufficient knowledge about eye diseases, as they are not primarily related to pregnancy. Secondly, obstetricians may be motivated to share responsibility due to the rising number of malpractice lawsuits against obstetricians in recent years in Türkiye. This highlights the importance of interdisciplinary collaboration and continuing education for healthcare professionals to ensure optimal care for pregnant women with eye diseases.

This study had several limitations that should be considered when interpreting the results. Firstly, the number of participants was relatively small, which may limit the generalizability of the findings. Additionally, as the study was conducted using a survey method, there is a possibility that participants may not have been able to provide the answers they intended to give, leading to potential response bias.

However, despite these limitations, the study contributes to the existing literature by providing insights into the knowledge and attitudes of ophthalmologists and obstetricians regarding various eye diseases encountered during pregnancy. Moreover, it is noteworthy that this is one of the few studies conducted on this topic, particularly in the context of Turkey, and it sheds light on the perspectives of healthcare professionals in this region. Further research with larger sample sizes and diverse populations would be beneficial to validate and expand upon these findings.

CONCLUSION

Eye diseases play a significant role among the non-obstetric indications for cesarean section. However, obstetricians may lack the necessary knowledge and attitudes regarding the management of pregnant women with eye diseases, as they are not their primary focus. To address this gap, it is essential to provide obstetricians with ongoing education and training through assistantship programs and in-service training sessions. By keeping their knowledge up-to-date, obstetricians can better understand and manage pregnant women with eye diseases, ultimately improving maternal and fetal outcomes. Interdisciplinary collaboration between obstetricians and ophthalmologists is also crucial in ensuring comprehensive care for pregnant women with eye conditions.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the University of Health Sciences Hamidiye Scientific Researches Ethics Committee (Date: 18.11.2022, Decision No: 22/422).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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