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Original Article

Comparison between pregnant Syrian refugees and Turkish residents in terms of a history of multiple cesarean sections

Geçirilmiş multipl sezaryen öyküsü bakımından Suriyeli mülteci ve yerleşik Türk vatandaşı gebelerin karşılaştırılması

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Abstract

Aim: To compare pregnancy outcomes between pregnant Syrian refugees and Turkish citizens with a history of multiple cesarean sections.

Material and Methods: The pregnant women included in this retrospective cohort study were Syrian refugees and resident Turkish citizens with a history of multiple cesarean sections who were admitted between January 1 2017 and August 1 2018 in a tertiary hospital. All data about the demographics, multiple cesarean numbers, emergent/elective cesarean numbers, hematocrit values, and neonatal birth weights were comparatively analyzed between the two groups.

Results: The Syrian refugee group had a higher ratio of women with a history of >2 cesarean sections than the Turkish citizen group (23.2% vs 11.1%, $p<0.05$). The ratio of urgent cesarean section operations were higher in the Syrian refugee group than in the Turkish citizen group (69.6% vs 55.4%, $p<0.05$). The Syrian refugee group had longer pregnancy duration (39.08±1.01 vs 38.46±1.50 weeks, $p<0.001$) and lower neonatal birth weights (3117.83±363.36 g vs 3230.93±472.67 g, $p<0.05$).

Conclusion: Our data suggested a significant relationship between a history of >2 cesarean sections and the pregnant Syrian refugees. The Syrian refugees had longer pregnancy duration, lower neonatal birth weights, and a higher rate of emergency cesarean sections. Therefore, we think that complications related to caesarean section may increase gradually over time in Syrian refugee pregnant women.

Keywords: refugees; pregnancy outcome; prenatal care; cesarean section

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Öz

Amaç: Suriyeli mülteci ve yerleşik Türk vatandaşı gebelerin, gebelik sonuçlarını geçirilmiş sezaryen sayısı bakımından karşılaştırmak.

Gereç ve Yöntemler: Bu retrospektif kohort çalışmaya 1 Ocak 2017 ile 1 Ağustos 2018 tarihleri arasında, üçüncü basamak bir hastanede sezaryen doğumu gerçekleşmiş, multiple sezaryen öyküsüne sahip Suriyeli mülteci ve yerleşik Türk vatandaşı gebeler dahil edildi. İki grup demografik veriler, geçirilmiş sezaryen sayıları, acil/elektif sezaryen sayıları, hematokrit düzeyleri ve yenidoğan ağırlıkları bakımından karşılaştırılarak analiz edildi.

Bulgular: Suriyeli mülteci gebeler arasında >2 multiple sezaryen öyküsüne sahip kadın oranı yerleşik Türk vatandaşları gebelerden fazlaydı (sırasıyla, %23,2; %11,1; p<0,05). Acil sezaryen doğum oranı Suriyeli mülteci gebelerde yerleşik Türk vatandaşı gebelere göre daha fazlaydı (sırasıyla %69,6; %55,4; p<0,05). Suriyeli mülteci grubu daha uzun gebelik süresine (39,08 ± 1,01 vs. 38,46 ± 1,50 hafta, p <0,001) ve daha düşük yenidoğan doğum ağırlığına (3117,83 ± 363,36 g vs. 3230,93 ± 472,67 g; p <0,05) sahipti.

Sonuç: Bulgularımız >2 sezaryen öyküsü ile Suriyeli mülteci gebeler arasında anlamlı bir ilişki olduğunu göstermiştir. Suriyeli mültecilerde gebelik süresi daha uzundu, yenidoğan doğum ağırlıkları daha düşüktü ve daha yüksek acil sezaryen oranları mevcuttu. Bu nedenle, Suriyeli mülteci gebelerde sezaryen ile ilişkili komplikasyonların zaman içerisinde giderek artabileceğini düşünüyoruz.

Anahtar kelimeler: mülteciler; gebelik sonuçları; prenatal bakım; sezaryen

Introduction

Turkey has accommodated the most number of Syrian refugees worldwide, with women aged between 19 and 24 years accounting for 640,000 of these refugees.[1] Studies involving different ethnic groups have shown that cases of poor maternal and fetal outcomes have increased in refugee communities.[2,3] Recent studies have revealed that pregnant Syrian refugees go into labor with lower hematocrit and hemoglobin levels than pregnant Turkish citizens.[4,5] Poor maternal outcomes are related to a history of more than 2 cesarean sections [6] and anemia [7] in both women. However, there has been no study that compared the number of cesarean sections and complications between pregnant Syrian refugees and settled Turkish citizens with a history of repeated cesarean sections.

The aim of this study was to compare the pregnancy outcomes of pregnant Syrian refugees and Turkish citizens with a history of repeated cesarean sections.

Material and Methods

The data of this retrospective study were obtained by reviewing the hospital records of 340 pregnant women who had repeated cesarean deliveries between January 1, 2017 and August 1, 2018 in our institution. The study protocol was approved by the ethics committee of our institution (#336/2018). The study was performed in accordance with the ethical standards stipulated in the recent version of the 1964 Declaration of Helsinki, as revised in 2013. Given the retrospective design of the study and anonymized data used in the analyses, informed consent was not obtained from the patients.

The patients included in the study were divided into the Syrian refugee and Turkish citizen groups. The demographic data, hematocrit values before and after cesarean delivery, operative durations, blood transfusion, obstetric complications (placental ablatio, placenta previa and acreata, pre-eclampsia, uterine atony), and neonatal birth weights were analyzed and compared between the two groups.

In our study, patients who were admitted to our institution with Syrian refugee identity card given by the Republic of Turkey were referred to as Syrian refugees. Patients who were admitted to our institution with "Turkish citizen ID card" given by the Republic of Turkey was referred to as resident Turkish citizens.

Pregnant women with a previous cesarean section were included

in the study. Furthermore, the cases were analyzed in terms of the number of previous cesarean sections and divided into the following two groups: those with a history of >2 cesarean deliveries and those with a history of ≤2 cesarean deliveries.

The hematocrit value was expressed as the percentage of packed erythrocytes detected by a whole blood count analyzer (XN-1000 analyzer, Sysmex, Kobe, Japan) in a venous blood sample taken into a tube with ethylenediamine tetraacetic acid. Preoperative hematocrit values for elective cases were obtained from routine hemogram results at 15 days before the cesarean section according to the protocol of our clinic. Preoperative hematocrit values for emergency cases were obtained from the results of the hemogram examination performed at the time of admission. Postoperative hematocrit value was obtained from the postoperative 24-hour hemogram examination results [8]. If erythrocyte suspension was applied to the patients for any reason in the period until admission to the clinic and routine postoperative 24-hour hemogram examination, postoperative hematocrit data were not included in the analysis.

The operation duration was determined from the data recorded in minute by a staff member in the operating room. This is the period from the time of the skin incision until the end of the skin suture. Operative duration was expressed in minutes.

The weight of the newborn was obtained from the data entered by the pediatric nurse after weighing the newborn in the electronic baby balance inside the operating room and recorded in grams in the patient file. Birth weight was expressed in grams.

Cesarean section was defined as elective cesarean section in women who had a scheduled cesarean section because of repeated cesarean indication from the obstetric clinic of our institution. Those with a history of multiple cesarean sections who were admitted to the emergency department and underwent cesarean section were referred to as cases of emergency cesarean section.

Pregnant women at ≥24 weeks gestation who had a cesarean section at our institution and had at least two antenatal follow-up visits in our outpatient clinic were included in the study. The birth week of the women whose last menstrual date data could not be found in the patient file was calculated according to the week determined according to fetal crown-rump length (CRL) measurements if the obstetric ultrasound was performed in the first trimester of pregnancy, and women without this data were excluded from the study. Pregnant women with chronic disease (Type 1 or 2 diabetes, rheumatologic or autoimmune disease, cardiovascular diseases, chronic infections) were excluded from the study. In addition, cases of multiple pregnancies were excluded. Patients who underwent myomectomy, adnexal cyst excision and scar revision during cesarean section were also excluded from the study to reduce the variation of operative durations.

Continuous data were expressed as mean ± standard deviation and categorical data were expressed as numbers and percentages. Continuous data with normal distribution were analyzed by Student's t-test and non-normally distributed continuous data were compared with Mann-Whitney U test. Categorical data were compared using Pearson's chi-squared and Fisher's exact tests. All calculations are based on IBM SPSS Statistics for Windows, Version 20.0. (IBM Corp., Armonk, NY). Significance was evaluated at a minimum level of $p<0.05$.

Results

During the study period, among the 340 cases, 69 (20.3%) Syrian refugees and 271 (79.7%) Turkish citizens met the inclusion criteria. When all the cases were considered thoroughly, patients' median age was 29 (range: 17-43) years, median preoperative hematocrit value was 35% (range: 23%-43%), median postoperative hematocrit value was 32% (22%-42%), and the median operative duration was 50 (31-72) minutes. A total of 198 (58.2%) cases were emergency cesarean sections and 142 (41.8%) were elective cesarean sections. The numbers of obstetric complications for all the cases were as follows: 19 (5.6%) cases of atony, 5 (1.5%) cases of ablatio placenta, 8 (2.4%) cases of preeclampsia, and 1 (0.3%) case of subtotal placenta previa.

The outcomes, which were obtained as a result of comparing and separately analyzing the demographic, laboratory, and operative data of both groups, are shown in Table 1. Although the erythrocyte suspension was applied to 3 (4.3%) women in the Syrian refugee group and 15 (5.5%) women in the Turkish citizen group, no significant difference was observed between the two groups ($p=0.694$).

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Table 1. Comparison of the demographic, laboratory, and operative data between the Syrian refugee and Turkish resident groups				
		Syrian refugee	Resident Turkish citizens	P value
Age (mean ± SD)		27.10±5.47	30.5±5.46	<0.001
Gravida (n)		3.44±1.71	3.16±1.20	0.503
Parity (n)		2.15±1.32	1.83±0.95	0.182
Number of previous cesarean sections n (%)	≤ 2	53 (76.8)	241 (88.9)	0.009
	> 2	16 (23.2)	30 (11.1)	<0.001
Gestational age (week)		39.08±1.01	38.46±1.50	0.016
Neonatal birth weight (gram)		3117.83±363.36	3230.93±472.67	0.185
Hematocrit level (%)	Preoperative	34.06±3.29	34.65±3.61	0.039
	Postoperative	31.15±2.75	32.02±3.52	0.914
Operative duration (minute)		50.87±8.71	50.97±8.14	0.033
Operation type n (%)	Emergency	48 (69.6)	150 (55.4)	0.614
Obstetric complications		7 (11.6)	25 (9.2)	

In all women, 294 (86.5%) o have had ≤2 cesareans previously and 46 (13.5%) have had >two cesareans previously. The percentage distribution of Syrian refugees and Turkish citizens according to the history of cesarean sections (≤2vs >2) is presented in Figure 1.

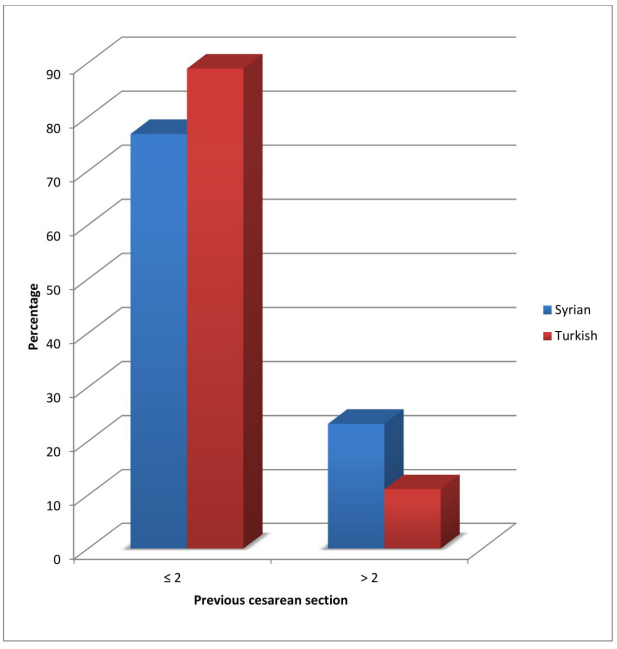

Figure1. Percentage distribution of pregnant Syrian refugees and resident Turkish citizens according to the number of previous cesarean section

The results of the comparative analysis of the average postoperative hematocrit levels and average operative durations between Syrian refugees and Turkish citizens are presented in Table 2.

Discussion

Our study is the first study that compared the maternal and fetal outcomes between Syrian refugees and resident Turkish citizens with a history of cesarean section. Our most important finding was that pregnant Syrian refugee women are more likely to have >2 previous cesarean sections compared to resident Turkish citizens. Before the Syrian civil war, Syria had a cesarean rate of 15.0%, ranging from 5.3% to 26.2% in the Arab region.[9] In a study investigating the cesarean section rate among Syrian refugees in Lebanon, the rate of cesarean section was found to be higher in Syrian refugees than in resident Lebanese citizens.[10] In the same study, this rate was caused by the limited access to adequate health services among Syrian refugees. Owing to the increasing number of Syrian refugees migrating in Turkey for the past 10 years, approximately 700,000 women aged 19-44 years are added to the national population.[1] In addition, Turkey has lesser number of medical doctors when compared to the proportion of the population in European countries.[11] Moreover, since

Table 2. Postoperative hematocrit level and operative times between women with a history of ≤2 cesarean sections and those women with a history of >2 cesarean sections in both the Syrian refugee and Turkish resident groups

	Syrian refugee			Resident Turkish citizens		
	Previous cesarean section ≤2	Previous cesarean section >2	p value	Previous cesarean section ≤2	Previous cesarean section >2	p value
Postoperative hematocrit (%)*	31.04±2.61	32.00±2.63	0.142	32.17±3.60	31.00±2.99	0.75
Operative duration (minute)	48.62±8.25	58.31±5.56	<0.001	50.09±8.05	58.33±5.71	<0.001

*Patients with erythrocyte suspension were not included in the analysis.

Syrian refugees continue to migrate in the country, they have lesser access to health care services than Turkish residents.[11] Indeed, Erenel et al.[5] found that Syrian refugees received lesser antenatal follow-up than Turkish residents. Moreover, in pregnant Syrian refugees, psychological traumas caused by war and migration [12] and fears about losing the baby during vaginal delivery are frequent.[13,14] Thus, over the years, these conditions may have led to an increase in the number of pregnant Syrian refugees with a history of cesarean section. Further, the tendency to have many children is high among Syrian women because of the value system of the Syrian society [15]. In our case series, two of the Syrian pregnant refugees had their fifth cesarean section. Moreover, Huster et al.[10] have also reported of a pregnant Syrian refugee who underwent a tenth cesarean operation at a health center in Lebanon.

In our study, when comparing the gestation periods between the two groups, Syrian refugees had significantly longer pregnancy duration. Moreover, we found that there were significantly more cases of emergency cesarean sections in the Syrian refugee group than in the Turkish citizen group. In our clinic, those with a history of cesarean section are scheduled for elective cesarean section after the 39th week of gestation. The inadequate antenatal follow-up among the pregnant Syrian refugees [5,16,17] may have caused the low rate of scheduled elective cesarean sections, which might have led to the longer average gestational age among Syrian refugees. Therefore, Syrian refugees may have undergone more emergency cesarean operations than the resident Turkish citizens. Despite the longer gestational age among Syrian refugees, the birth weight of their newborns was significantly lower, this finding was comparable to those of previous studies conducted in Turkey.[4,5,17,18]

In our study, no significant difference was found in placental dysfunctional diseases (placental ablation, pre-eclampsia, intrauterine growth retardation) between the two groups. In some studies comparing pregnant Syrian refugees with pregnant resident Turkish citizens, no difference was found in terms of poor pregnancy outcomes.[5,19]

Regarding age, The Syrian refugees were mostly younger, which are comparable to most studies [4,5,17], except that conducted by Gungor et al. [19] Moreover, Türkay et al.[18] and Alnuaimi et al.[20] found that adolescent pregnancies were significantly more frequent among Syrian refugees.

In countries hosting Syrian refugees, longer-term health policies, rather than immediate measures, are being established for this population.[21,22] Thus, this may have cause the lesser incidence of prepartum anemia among pregnant Syrian refugees investigated after 2016 [19] and even in current studies than those investigated before 2016.[5,17]

In terms of postpartum hematocrit values, a significant difference was found between those women with a history >2 cesarean sections and those women with a history <2 cesarean sections in both groups. Women with a history of >2 cesarean sections had significantly longer operative time than those with a history ≤2 cesarean sections. However, the postpartum hematocrit values did not differ between the two groups, indicating that the postpartum hematocrit values are not related to operative time or the number of previous cesarean sections.

The strength of our study are as follows: no patient had missing data in their files owing to the presence of translators in our hospital during the study period, and our study was the first study that have compared pregnant Syrian refugees and Turkey citizens with a history of previous cesarean section. However, our study has several limitations. Our study had a retrospective

design and sample size owing to our strict inclusion and exclusion criteria. Neonatal outcomes data were limited due to the lack of on-call pediatricians and neonatal intensive care units. We believe that more studies are needed to investigate the effect of this relationship on pregnancy outcomes.

Conclusion

Among Syrian refugees the higher number of a history of >2 cesarean sections observed. Therefore, we consider that cesarean section related complications may increase gradually over time in Syrian refugee pregnant women.

Declaration of conflict of interest

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