

Original research-Orijinal araştırma

Comparison of maternal outcomes between midwife and obstetrician led births

Ebe ve kadın hastalıkları ve doğum uzmanları tarafından yönetilen doğumların anneye ait sonuçlarının karşılaştırılması

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Abstarct

Aim. The aim of this study is to compare the maternal outcomes of the second and third stages of labor managed by midwives or obstetricians. **Method.** The medical records of 290 pregnant women who gave birth with spontaneous vaginal delivery from 1 January 2009 to 31 December 2009 in a county hospital were examined retrospectively. The inclusion criteria comprised women whose singleton uncomplicated pregnancies were at term, with their babies born alive and without augmentation. Group 1 included women who gave birth with obstetricians and Group 2 included women who gave birth with midwives. **Results.** There were 84 (29%) cases in Group 1 and 204 (71%) in Group 2. There was no difference between the groups with regard to age, gravid, vacuum extraction, presence of episiotomy, complications of episiotomy, and complete or partial placenta retention. The decrease between the prepartum and postpartum hemoglobin levels were 1.3 ± 1.1 g/dL in Group 1 and 0.8 ± 1.2 g/dL in Group 2, and the difference was significant ($p=0.005$). The mean postpartum hospitalization days were 1.7 ± 1 days in Group 1 and 1.3 ± 0.7 days in Group 2. It was significantly longer in Group 1 ($p=0.003$). **Conclusion.** The follow-up and management of the second and third stages of labor in low risk pregnancies can be reliably performed by midwives.

Keywords: Midwife, obstetrician, labor, episiotomy

Özet

Amaç. Bu çalışmanın amacı kadın hastalıkları ve doğum uzmanı veya ebeler tarafından yönetilen doğumların 2.evre ve 3.evresinin anneye ait sonuçların karşılaştırılmasıdır. **Yöntem.** Bir ilçe hastanesinde 1 Ocak 2009 ile 31 Aralık 2009 tarihleri arasında normal vajinal yolla doğum yapan 290 gebenin medical kayıtları retrospektif olarak incelendi. Çalışmaya term, canlı, tekil gebeliği olan; doğum augmentasyonu uygulanmayan, riskli gebeliği olmayan hastalar dahil edildi. Kadın hastalıkları ve doğum uzmanı tarafından doğumu gerçekleştirilen olgular grup 1, ebeler tarafından doğumu gerçekleştirilen olgular grup 2 olarak tanımlandı. **Bulgular.** Grup 1 dahilinde 84 (%29) olgu, grup 2 dahilinde 204 (%71) olgu mevcuttu. Gruplar arasında yaş, gravida, vakum ekstraksiyonu, epizyotomi varlığı, epizyotomi komplikasyonları, plasentanın ayrılmaması veya kısmi ayrılması açısından fark yoktu. Doğum öncesi ve sonrası hemoglobin düzeyi düşüşü grup 1'de $1,3 \pm 1,1$ g/dL, grup 2'de $0,8 \pm 1,2$ g/dL idi; grup 1'deki düşüşün, grup 2'den anlamlı olarak yüksek olduğu görüldü ($p=0,005$). Doğum sonrası hastanede yatış günü grup 1'de $1,7 \pm 1$ gün, grup 2'de $1,3 \pm 0,7$ gün olarak hesaplandı; grup 1'de hastanede yatış süresi daha uzun bulundu ($p=0,003$). **Sonuç.** Düşük riskli gebeliklerin doğumlarının 2. ve 3. evrelerinin takibi ve yönetimi ebeler tarafından güvenle yapılabilir.

Anahtar sözcükler: Ebe, kadın doğum uzmanı, doğum, epizyotomi

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Introduction

The common worldwide tasks of the midwives are preparing the pregnant woman for birth, making preparations for labor and managing uncomplicated births. Midwives play a very important role in provision of care during labor and birth especially in developing countries like ours.

It was reported in the Turkish Demographic and Health Survey (TNSA) data that 89.7% of births between 2003 and 2008 in Turkey took place at a health center; 64.1% were birthed by physicians and 27.2% by midwives. These rates were as follows in the TNSA 2003 data: 78.2%, 46.7%, and 36.3%, respectively. It was striking that births by midwives showed a gradual decrease [1]. This decline is due to the effects of healthcare politics supporting the births to be performed by skilled healthcare professionals at a hospital but home births with traditional methods are still performed in our country [2].

In training and research hospitals residents attended by obstetricians manage labor and births where midwives do not attend the births as a part of the team. But especially in rural area hospitals, midwives are the essential parts of the delivery room. When a resident becomes an obstetrics and gynecology specialist and takes the responsibility of an obstetric department as a chief doctor in a state hospital; a new process of task begins as a consultant and as a supervisor for the labor and births managed by midwives.

The aim of this study is to compare the maternal outcomes of the second and third stages of labor managed by midwives or obstetricians.

Material and methods

Medical records of 290 women who birthed by spontaneous vaginal way from 1st of January 2009 to 31st of December 2009 in a rural hospital were examined retrospectively. The inclusion criteria comprised women whose singleton uncomplicated pregnancies were at term, with their babies born alive and without augmentation. Group 1 included women who gave birth with obstetricians and Group 2 included women who gave birth with midwives. Nulliparous cases were excluded from the study because 92% of them had labor induction or augmentation. Group 1 included the cases which were birthed by obstetricians and Group 2 included those birthed by midwives. The cases which were initially managed by midwives but then had to be referred to the obstetricians due to fetal distress or extension of the second stage of the labor were included in Group 1. The cases which were birthed by midwives but then consulted to the obstetricians due to the complications of episiotomy and/or complications of the third stage of the labor were included in Group 2.

The patients' ages, numbers of pregnancies, and hemoglobin levels at the time of the acceptance to the delivery room were recorded. The variables were defined as labor and birth managed by a midwife or obstetrician, presence of vacuum extraction, presence of episiotomy, perineal lacerations of third or fourth degree, episiotomy complicated by hematoma or lacerations extending beyond the surgical incision. Following the active management of the third stage of labor, patients who required manual extraction or curettage due to the retained placental fragments were defined. The hemoglobin levels at postpartum 12-24 hours were recorded to find the difference between prepartum and postpartum hemoglobin levels. The length of hospital stay after birth was also recorded.

The data were analyzed using the SPSS (Statistical Package for Social Science) for Windows 11.5 pocket program. Descriptive statistics were expressed as age, mean \pm standard deviation (mean \pm SD) for hemoglobin and hematocrit, and median (minimum-maximum) for length of hospital stay. The nominal variables were shown as the number of cases and percentage. The significance of the difference in the means between the groups was analyzed using the Student's t test, and the significance of difference in the median values was analyzed by the Mann Whitney U test. Nominal variables were studied using the Pearson's chi-square or the Fisher's exact result chi-square test. The level of significance was set as $p < 0.05$.

Results

There were 84 (29%) cases in Group 1 and 204 (71%) in Group 2. The demographic data have been presented in Table 1. The mean age was 26 ± 6.3 years in Group 1 and 26 ± 5.4 years in Group 2. There was no significant difference for age between the groups ($p = 0.330$). Of the cases, 91 (31.6%) were primiparous and 197 (68.4%) were multiparous. The parity variable was similar in groups ($p = 0.181$). In 39 (44%) of cases in Group 1, an obstetrician was called because of fetal distress and/or extension of the second stage of labor. Two patients (0.9%) in Group 1 and three patients (3.9%) in Group 2 underwent vacuum extraction; there was no significant difference between the groups ($p = 0.121$).

The presence of episiotomy was 77.9% ($n = 60$) in Group 1 and 68.7% ($n = 145$) in Group 2, and there was no significant difference ($p = 0.127$). Third or fourth degree perineal lacerations and complicated episiotomy with hematoma and/or laceration beyond surgical incision were seen in three patients (3.9%) in Group 1, and in six (2.9%) patients in Group 2. There was no significant difference between the groups with regard to episiotomy complications ($p = 0.706$).

There were five (2.4%) patients who required intervention due to complete or incomplete failure of placental detachment in Group 1 and three (3.9%) patients in Group 2 and the difference between the groups was not significant ($p = 0.440$).

The decrease between the prepartum and postpartum hemoglobin levels was 1.3 ± 1.1 g/dL in Group 1 and 0.8 ± 1.2 g/dL in Group 2, and the decrease in Group 1 was significantly higher than that in Group 2 ($p = 0.005$).

Postpartum duration of hospitalization was 1.7 ± 1 days (min=1, max=5) in Group 1 and 1.3 ± 0.7 days (min=0, max=6) in Group 2. It was found that the patients in Group 1 had significantly longer postpartum durations of hospital stay than patients in Group 2 ($p = 0.003$).

Table 1. Clinical and metabolic characteristics of the patients [mean \pm SD or % (n)].

	Group 1 (n=84, 29%)	Group 2 (n=204, 71%)	p
Age (years)	26 ± 6.3	26 ± 5.4	$p = 0.330$
Primiparous	37.7% (29)	29.4% (62)	$p = 0.181$
Multiparous	62.3% (48)	70.6% (149)	$p = 0.181$
Vacuum extraction	0.9% (2)	3.9% (3)	$p = 0.121$
Presence of episiotomy	77.9% (60)	68.7% (145)	$p = 0.127$
Placental retention	2.4% (5)	3.9% (3)	$p = 0.440$
Episiotomy complications	3.9% (3)	2.9% (6)	$p = 0.706$
Decrease in hemoglobin level (g/dL)	1.3 ± 1.1	0.8 ± 1.2	$p = 0.005$
Postpartum hospitalization (days)	1.7 ± 1 (min=1, max=5)	1.3 ± 0.7 (min=0, max=6)	$p = 0.003$

Discussion

It was shown in this study that low-risk labor could safely be monitored and managed by midwives without any increase in the rates of obstetric complications.

There was no significant difference in the presence of episiotomy between the two groups ($p=0.127$). There was no significant difference with regard to the complications of the episiotomy between the groups ($p=0.706$). In the literature concerning perineal trauma, a significantly lower rate of episiotomies and perineal tears of all degrees were found in patients managed by midwives than by physicians. The common opinion in these studies is that perineal tears increase with episiotomies and thus, the rate of perineal tears decreases as the rate of episiotomies decreases [3-6]. This inconsistency between the literature and our study may be due to the lower number of cases and the high rate (71%) of midwife-managed b in our study than in the literature.

The decrease between the prenatal and postnatal hemoglobin levels in Group 1 was significantly higher than Group 2 ($p=0.005$). We found that patients in Group 1 had significantly longer postpartum durations of hospital stay than patients in Group 2 ($p=0.003$). No significant difference was found between the groups in the literature with regard to postpartum hemorrhage and length of hospital stay [3, 5]. This inconsistent finding of ours may be due to the fact that approximately half of our cases birthed by the obstetrician had undergone consultation due to the decrease in the fetal heart rate or extension of the second stage of labor and various interventions were used to accelerate the labor. The rate of the cases that had initially been attributed low-risk, but then turned out to be high-risk patients during the follow-up of labor was 50%, similar to our findings [6].

There was no significant difference for the vacuum extraction between the groups ($p=0.121$). Eide et al. [7] found that vacuum extraction rates by midwives and obstetricians were similar. Our results were also similar [9].

The rates of manual extraction of the placenta or curettage for the retained products of conception were similar between the groups both in literature and in our study ($p=0.440$) [9].

No statistically significant difference between midwife and obstetrician-led births were observed in infant outcomes in studies of neonatal APGAR scores in low-risk pregnancies [3-10]. The most important limitation of our study was the lack of comparison for neonatal outcomes due to the retrospective design.

Low-risk births can be effectively managed by midwives as shown in various studies as well as ours. This will enable obstetricians to focus on high-risk cases. However, as it is always possible that a low-risk case can anytime turn out to be a high-risk case due to the sensitive equilibrium of labor, the most appropriate and convenient model is labor and birth taking place at a center where a consultant obstetrician is available.

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