



The Impact of Delivery Mode on the Apgar Scores in Term and Preterm Breech Delivery

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Abstract

Objective: In this study, Apgar scores were evaluated in patients with term and preterm breech delivery according to forms of delivery.

Methods: Patients data with breech delivery were retrospectively reviewed between January 2003 and December 2010 in Obstetrics and Gynecology Clinic.

Results: Total number of delivery was 22,666, 3.72% of them (850 cases) was breech delivery. Patients with breech delivery, mean age was 29.0±6.9, while 23.8%, were over age 35. The average age of vaginal breech delivery group was 30.6±7.2, when the cesarean breech delivery group was 28.6±6.7. 29% of the patients was primigravid, 71% of the patients was multigravid that delivered breech. Cesarean and vaginal breech delivery rate were found 76.8%, 23.2%, respectively. Average birth weights of nulliparous was 2,536±768 gr, while the multiparous was 2,750±943 gr. Uterine anomaly were detected 3.1% of the cases. The most common uterine anomaly was uterus septus. First and fifth minute Apgar scores of cesarean breech delivery were higher than vaginal breech delivery.

Conclusion: In our study, Apgar scores in preterm and term breech vaginal delivery group was significantly higher than cesarean delivery group.

Keywords: Term, preterm breech delivery, Apgar scores, cesarean section, vaginal delivery.

Term ve preterm makat doğumlarda doğum şeklinin Apgar skorları üzerine etkisi

Amaç: Bu çalışmada term ve preterm makat doğum gerçekleştirilen olgularda Apgar skorlarının doğum şekillerine göre değerlendirilmesi amaçlanmıştır.

Yöntem: Ocak 2003 ile Aralık 2010 tarihleri arasında Kadın Hastalıkları ve Doğum Kliniğine başvuran, makat doğum gerçekleşen olgulara ait veriler retrospektif olarak incelendi.

Bulgular: Toplam doğum sayısı 22,666 olup bunların %3.72'si (850 olgu) makat doğum idi. Makat geliş olguların yaş ortalaması 29.0±6.9 iken %23.8'i 35 yaş üstü idi. Vaginal makat doğum yapanların yaş ortalaması 30.6±7.2, sezaryen makat doğum grubunun ise 28.6±6.7 idi. Makat geliş olguların %29'u primigravid, %71'i multigravid idi. Sırasıyla sezaryen ve vaginal makat doğum oranı %76.8 ve %23.2 olarak tespit edildi. Nulliparaların ortalama doğum ağırlıkları 2,536±768 gr iken multiparaların 2,750±943 gr idi. Olguların %3.1'inde uterin anomali tespit edildi. En sık görülen anomali uterus septus idi. Makat sezaryen doğumda birinci ve beşinci dakika Apgar skorları vaginal doğumdan daha yüksek idi.

Sonuç: Çalışmamızda preterm ve term makat vajinal doğum grubunda Apgar skorları, sezaryen grubuna göre daha düşük bulundu.

Anahtar Sözcükler: Term, preterm makat doğum, Apgar skorları, sezaryen, vajinal doğum.

Introduction

Breech deliveries occur in approximately 2% to 4% of all deliveries. Breech presentation has many risks for fetus and mother when compared to cephalic presentation. Increased morbidity and mortality in preterm birth is associated to congenital anomalies, birth trauma and cord compression).^[1-3]

Deciding the type of delivery in breech presentations is still an ongoing debate nowadays. Especially, this debate usually focus on whether the type of delivery decided in preterm or term breech deliveries in the literature. Pregnancy status, gestational age, the clinicians experience are the important parameters while deciding to the delivery from as long as last three decades.^[2-5]

In this study, Apgar scores were compared in patients with term and preterm breech delivery according to the type of delivery.

Methods

Data of the patients who admitted to the Dicle University, School of Medicine, Department of Obstetrics and Gynecology between January 2003 and December 2010 with breech delivery were retrospectively investigated from their patient charts. The patients with gestation week over 24 weeks were included in the study. When determining the gestation week last menstrual date and ultrasonographic examinations were used. Uterine anomaly was diagnosed during the ultrasonography or cesarean section. Conditions like lethal congenital anomalies, fetal death, fetal distress, preeclampsia, eclampsia, HELLP syndrome, placenta previa, hydrocephaly, cordon prolapsus, and abruptio placenta were excluded. Tocolytic treatment was administered to the patients with preterm labor

and steroid treatment was given for maturation of lungs of fetuses. All patients were monitorized by fetal electronic heart monitorization devices during labor. In this study Apgar scoring was used to determine early perinatal morbidity. The Apgar scores in the first and fifth minutes of after delivery, birth weight of the child and their systemic examinations were assessed by a pediatrician in all participants.

Obtained data were analyzed by using Statistical Package for Social Sciences 11.5 version (SPSS Inc., Chicago, IL, USA). Descriptive analyses were presented as means and frequencies. For comparison of the variables that were normally distributed, student t test was used. Results are presented in the 95% confidence interval and statistically significance level was set as the any p value <0.05.

Results

The total number of births in our clinic was 22,666 between the dates of this study and 850 (3.75%) cases were births with breech presentation. The mean age of cases who delivered breech presentation was 29.0 ± 6.9 and 23.8% of these were over 35 years old (Table 1). 71% of cases were primigravida and 29% were multigravida. The average age of delivered with vaginal and cesarean section was 30.6 ± 7.2 , 28.5 ± 6.7 , respectively. When average birth weight was $2,536 \pm 768$ in cases of nulliparous, it was $2,750 \pm 943$ in cases of multiparous, and there was significant difference between two groups. This birth rate with cesarean section of breech birth cases was 76.8% and birth rate with vaginal of those were 23.2%. The distributions of cases according to indications for cesarean section are given in Table 2. The most common indication was breech presentation and it was to follow with indication for repeated cesarean section. The uterine

Table 1. General characteristics of the patients.

	N	Minimum	Maximum	Average
Age	850	15	49	28.9 ± 6.90
Gravida	850	1	17	4.0 ± 3.22
Parity	850	0	14	2.6 ± 2.91
Gestational age	850	24	42	35.0 ± 3.59
Birth weight	850	700	5500	2678 ± 894

Table 2. Indications for cesarean section.

	Number	%
Breech	544	83.4
Repeated cesarean	71	10.8
Macrosomia	37	5.7
Obstructed labor	1	0.1
Total	653	100.0

Table 3. Uterine abnormalities.

	Number	%
Arcuate	3	12.5
Septus	17	70.8
Bicornus	2	8.3
Unicornus	1	4.2
Didelphys	1	4.2
Total	24	100.0

anomaly was found in 3.1% of the cases (Table 3). The most common anomaly was uterine septus.

There was significant difference between the scores of the first and fifth minutes that term and preterm in cases of breech presentation delivered with caesarean section and vaginal delivery. The first and fifth minute Apgar scores of delivered cases with cesarean section were higher than vaginal births (Table 4). According to birth weight, the

first and fifth minute Apgar scores of delivered cases with cesarean section were higher than vaginal births (Table 5).

Discussion

Deciding the type of delivery in breech presentations is still an ongoing debate. This debate usually focus on whether the type of delivery decided in preterm or term breech deliveries is an important factor in increased fetal morbidity and mortality or not.^[2-5] Although Apgar scoring is not a decisive method in the evaluation of fetal asphyxia it is widely used in the clinic due to its simple and easy use.^[6] According to the retrospective and prospective studies perinatal mortality and early neonatal morbidity is reported to be increased in term vaginal breech deliveries when compared to those of cesarean breech deliveries.^[2,7-10] However, early neonatal results of term vaginal deliveries were reported to be similar with the results of the term cesarean breech deliveries in selected and well managed cases. Among these cases perinatal mortality was reported in 2 of every 1,000 deliveries, and early neonatal morbidity was 2%.^[2] When deciding vaginal delivery for the patients with breech presentation absence of intrauterine growth restriction, cord prolapsus and macrosomic fetus, and the presence of appropriate pelvic structure and fetal weight between 2,500 and 4,000 grams are important criteria.^[2] In this study, mean Apgar score of the children with term breech

Table 4. Apgar scores at 1 and 5 minutes of cesarean and vaginal breech delivery by gestational age.

	Type of birth	N	Median	p
24-30 weeks	Apgar 1 Vaginal delivery	61	3.0	<0.001
	Cesarean	60	4.0	
	Apgar 5 Vaginal delivery	61	6.0	<0.000
	Cesarean	60	7.0	
31-37 weeks	Apgar 1 Vaginal delivery	95	5.0	0.045
	Cesarean	368	6.0	
	Apgar 5 Vaginal delivery	95	8.0	<0.001
	Cesarean	368	8.0	
38 weeks or more	Apgar 1 Vaginal delivery	41	5.0	<0.001
	Cesarean	225	6.0	
	Apgar 5 Vaginal delivery	41	8.0	<0.001
	Cesarean	225	8.0	

Table 5. Apgar scores at 1 and 5 minutes according to the method of delivery and birth weight.

		Type of birth	N	Average	p
Less than 1,500 g	Apgar 1	Vaginal delivery	48	3.0±1.5	0.002
		Cesarean	52	3.9±1.3	
	Apgar 5	Vaginal delivery	47	5.0±2.3	0.000
		Cesarean	53	6.6±1.4	
1,500-2,499 g	Apgar 1	Vaginal delivery	50	4.0±1.8	0.000
		Cesarean	168	5.1±1.6	
	Apgar 5	Vaginal delivery	50	6.3±2.3	0.000
		Cesarean	168	7.6±1.3	
2,500-3,999 g	Apgar 1	Vaginal delivery	91	5.1±2.0	0.000
		Cesarean	383	5.9±1.5	
	Apgar 5	Vaginal delivery	91	7.4±2.1	0.000
		Cesarean	383	8.3±1.0	
Above 4,000 g	Apgar 1	Vaginal delivery	4	4.0±2.6	0.030
		Cesarean	48	6.0±1.6	
	Apgar 5	Vaginal delivery	4	7.0±1.8	0.034
		Cesarean	48	8.4±1.2	

cesarian delivery were higher than that of children with term breech vaginal delivery.

The type of delivery in preterm breech presentation is an ongoing discussion of the clinicians in during the last 3 decades. In some studies elective cesarian delivery is recommended for early preterm breech deliveries, however, some other studies have suggested no superiority of it to preterm vaginal breech delivery after arguing against the former studies given their methodological mistakes, small and heterogenous sample sizes.^{[[3,4,7,9,10]]} Supporting their suggestion Kayem et al. reported no increase of neonatal mortality risk in planned vaginal breech delivery.^[3] In our study, mean Apgar scores were higher in the cesarian olmalı breech delivery group than the scores of vaginal breech delivery group when the patients were grouped according to their gestational age or birth weight. Mullerian anomalies may cause obstetric complications like malpresentation.^{[[11]]} Uterine anomaly was detected in 3.1% of our cases, septate uterus being the most frequent one.

Neonatal morbidity and mortality were observed to be higher in vaginal breech deliveries in the studies conducted in our country.^{[[12,13]]} Our findings are consistent with those previous studies from our country.

Large randomized studies comparing term cesarian and vaginal breech deliveries concluded that rate of mortality and neurodevelopmental delay were similar in children who have reached to their 2 years of age in both groups.^[5] The studies are limited in the literature about preterm breech delivery. In fact, there are some authors who have suggested re-examination of these studies and their methodological errors.^[3]

Conclusion

In conclusion, Apgar scores of the children with term and preterm cesarian breech delivery are found to be higher than those of vaginal breech delivery. This difference seems to persist when the cases were grouped according to their gestational ages and birth weights.

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