An Examination of Cesarean and Vaginal Birth Histories Among Hispanic Women Entering Prenatal Care in Two California Counties with Large Immigrant Populations

Enrique Gonzales-Mendez · Catherine Gonzalez-Maddux ·
Celeste Hall · Mary Maddux-Gonzalez ·
Margaret A. Handley

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Abstract Repeat cesarean delivery (CD) rates among US Hispanic women are the highest of all racial/ethnic groups (90%). Vaginal birth after cesarean (VBAC) is an alternative delivery method, but requires medical records documentation of a non-vertical incision and favorable conditions in the current pregnancy. VBAC rates for Hispanic women are extremely low. This study explores the birth histories and medical records access among Hispanic women in California, taking into account the potential role of immigration on access to VBAC. Study aims are to describe for a sample of Hispanic women: (1) CD and VBAC histories as well as history of vaginal delivery preceding CD; and (2) medical records access, among women who had previous births in Mexico. Chart review was conducted for prenatal patients from three safety net clinics in two California counties with large Mexican migrant populations between August, 2003 and February 2004—during which VBAC was widely available in these two counties to determine: obstetric histories, CD details,

birthplace and whether or not medical records had been requested/obtained for CD. 355 multiparous Hispanic women were included. Thirty-three percent had a previous CD, almost two-thirds (64%) had only one CD. Over half of the women (55%) with 2+ births and CD history also reported a vaginal birth history. Medical records for CD were infrequently requested (29%). Of those requested, records were received for 77% of women with a US CD, compared with 13% of women with Mexican CD histories. Policies to address: (1) VBAC opportunities for low risk women, such as those with prior vaginal births and one CD, and (2) overcoming limited medical records access, could mitigate against unnecessary CD and associated medical expenditures and risks for future complications.

Keywords Cesarean delivery · Reproductive health · Hispanic · Immigrant health · Access to care

Introduction

Rates of cesarean delivery (CD) are of concern worldwide. Determining the optimal way to clinically manage women with CD history in subsequent deliveries remains controversial [1]. In many countries including the US, much of the debate has focused on the risks associated with vaginal birth after cesarean (VBAC). More recently, in communities with very high CD rates, there have been reports of increased risk of severe maternal morbidity and neonatal mortality associated with CD [1], raising questions about the safety of repeat CD. Additional studies that suggest that a prior vaginal delivery can significantly increase the success rate for VBAC deliveries and lower rates of adverse outcomes have important implications for clinical management of pregnant women with a history of a vaginal and a CD [2, 3].

E. Gonzales-Mendez · C. Gonzalez-Maddux
Department of Family and Community Medicine,
University of California San Francisco, San Francisco, CA, USA

E. Gonzales-Mendez
Family Medicine Residency Program, Santa Rosa, CA, USA

C. Hall
Monterey County Health Department, Monterey, CA, USA

M. Maddux-Gonzalez
Sonoma County Health Department, Sonoma, CA, USA

M. A. Handley (✉)
Department of Epidemiology and Biostatistics and Center
for Vulnerable Populations, University of California
San Francisco, San Francisco, CA, USA
e-mail: handleym@medsfgh.ucsf.edu

Healthy People 2010 states as an objective to decrease the repeat CD rate to 63 per 100 births among low risk women who have had one prior CD [4]. However, in the US, CD rates are increasing for all groups of women [5], and Hispanic women have the highest rates of repeat CD (90%) of any racial/ethnic group [6]. The increasing repeat CD rates in the US reflects a departure from policies that promoted VBAC deliveries in the late 1980 and 1990s for low risk women with one previous CD and a lower uterine segment incision [7]. Controversy around the safety of VBAC has prompted sharp declines in this delivery method with current estimates of 8.5% of 2006 births to US women with a previous CD were VBAC [5]. In California VBAC attempts among Hispanic women are estimated to have dropped from 22.6 to 4.7% between 1994 and 2006, the lowest for all race/ethnic groups [5, 8].

In the US and many other countries, women with one prior CD who desire a VBAC must obtain medical record evidence for the type of surgical incision used to determine that there was no vertical incision made on the uterus [9]. Vertical uterine incisions increase the risk of uterine rupture and would make a trial of labor too dangerous, and unfortunately, it is not possible to determine the incision-type based on visible scar on the skin. Based on this risk, the American College of Obstetrics and Gynecologists (ACOG) recommends medical documentation of a lower transverse incision to initiate a VBAC [9]. Consequently, women with the low-risk uterine incision who received prenatal care outside the US would be prevented from an attempted VBAC without requesting and receiving previous medical records. Unfortunately, there are no binational medical records access programs, and as a result, the obligation to obtain relevant birth records most often lies with the patient.

In order to describe the frequency of CD, vaginal birth, VBAC and binational medical records access among California Hispanic women, we undertook a descriptive study of Hispanic women receiving prenatal care in two California counties with large numbers of Mexican migrants. The primary research questions include:

- (1) What is the prevalence of prior vaginal, CD, and VBAC delivery among Hispanic women entering prenatal care in community health centers in California, and specifically, among women who have migrated from Mexico?
- (2) What evidence is there that Hispanic women in this study who had a prior history of CD delivery in Mexico were able to obtain medical records from Mexico to document incision type?

Materials and Methods

In California, all pregnant women are eligible for prenatal care during pregnancy, which covers delivery (Medi-Cal).

We focused on two large counties in California (Sonoma County and Monterey County) that have large numbers of Mexican migrants [10] and that had VBAC delivery as a birth option in Medi-Cal during the time of the study. VBAC was available during this time based on hospital utilization data collected by the Office of Statewide Health Planning and Development (OSHPD), which tracks selected medical procedures including cesarean and VBAC deliveries [11]. We conducted a retrospective chart review of all women who entered prenatal care between August 2003 and February, 2004 at the three community health centers that provide the majority of primary care primarily in these two counties. In Monterey County, the two study clinics provided prenatal care to over 95% of women entering care at the County's three publicly funded health department clinics [12]. In Sonoma County, the study clinic is a Federally Qualified Health Center that serves the largest number of publicly funded prenatal patients in Sonoma County [13].

Chart review was based on review of clinic intake forms for demographic information and on ACOG forms for obstetric histories. Data abstracted included: age, ethnicity, birthplace, time in the US if born outside the US (Monterey clinics only), prior birth history including number of pregnancies and live births, delivery method (vaginal, cesarean or VBAC), delivery location, and information regarding the incision type (vertical or transverse), reasons for previous CDs and the level of documentation (self-report only, medical record requested and not received, and medical records confirmed in writing) for prior CD. In Sonoma and Monterey counties there were clinic-level forms for medical records requests and for listing the delivery of prenatal counseling topics. All charts with history of previous CD were confirmed by an MD. Because birthplace and time in US were recorded in charts in Monterey County clinics only, analyses of these data are restricted to the Monterey sample.

Chi-square and Fishers exact testing was performed to compare differences between women with and without a CD history for older age (vs. younger), clinic location (each of the 3 clinics), birthplace in Mexico (vs. the US), recent arrival to the US defined as 5 years or less (vs. less recent), and number of previous live births (2 or more vs. 1). All study procedures were approved by the University of California San Francisco Committee on Human Research and by the clinic review boards.

Results

Study Sample

Across the three clinics, 652 women entered prenatal care between August 2003 and February 2004 and charts were

Fig. 1 Prenatal patients entering care in 3 community clinics between August, 2003 and February, 2004, Monterey and Sonoma Counties

fully abstracted for 624 women (96%) (Fig. 1). There were no differences in the proportion of charts abstracted between the three clinics. Three-hundred and ninety-one of the 624 pregnant women with complete data were multiparous (having had a prior birth) (63%). Because the study focus was on the birth experiences of multiparous Hispanic women, we excluded 233 women who were having their first child (primiparous) and 36 women who were non-Hispanic, for a total of 355 multiparous Hispanic women.

About half (47%) had 1 prior birth and 53% had multiple previous births (Table 1). Birthplace and time in the US were restricted to the 243 Hispanic women from

Monterey County—94% of Monterey County patients were born in Mexico and half were recent migrants. Among the 355 multiparous Hispanic women in the full sample, 33%, had a history of prior CD. Hispanic women with previous CD were similar to women with vaginal birth histories in terms of age, birthplace, time in US and number of previous live births. There were more Hispanic women with a history of CD attending the clinic in Sonoma County, compared to Monterey County clinics ($P < 0.05$), but there were no other significant difference between groups. Based on Monterey data, among women born in Mexico the prevalence of previous CD was 31%.

Table 1 Cesarean history and sample characteristics of multiparous Hispanic patients entering prenatal care- Monterey and Sonoma County clinics 2003–2004

	All multiparous Hispanic women <i>n</i> = 355 <i>n</i> (%)	Hispanic women, prior CD <i>n</i> = 117 (33%) <i>n</i> (column %)	Hispanic women, no prior CD <i>n</i> = 238 (67%) <i>n</i> (column %)
Age at entry to care			
<21 years	28 (8%)	8 (7%)	20 (8%)
21–29	210 (59%)	64 (55%)	146 (61%)
30–34	74 (21%)	31 (26%)	43 (18%)
35+	43 (12%)	14 (12%)	29 (12%)
Previous live births			
1	168 (47%)	51 (44%)	117 (49%)
2	125 (35%)	48 (41%)	77 (32%)
3+	62 (18%)	18 (15%)	44 (18%)
Clinic location			
Santa Rosa, Sonoma Co.	112 (32%)	47 (40%)*	65 (27%)
Salinas, Monterey Co.	136 (38%)	37 (32%)	99 (42%)
Seaside, Monterey Co.	107 (30%)	33 (28%)	74 (31%)
Birthplace**			
Mexico	229 (65%)	70 (60%)	153 (67%)
US	16 (4%)	2 (1%)	14 (6%)
Not noted	110 (31%)	45 (38%)	65 (27%)
Time in US, years***			
≤1 year	47 (21%)	11 (16%)	36 (23%)
2–5 years	82 (36%)	24 (34%)	58 (36%)
>5 years	93 (41%)	31 (44%)	62 (39%)
Unknown	7 (2%)	4 (6%)	3 (2%)

* $P < 0.05$ Chi square test** Birthplace available only Monterey County clinics patients, $n = 243$ and 2 Sonoma County patients

*** Restricted to the 229 Monterey County clinic patients born in Mexico

Profile of Hispanic Women with Prior Cesarean Delivery

Table 2 summarizes the demographic and obstetric history details of Hispanic women with prior CD. The majority of women had only one CD. Among those women who had two or more previous births and who also had a prior CD, over half (55%) also had a history of a previous vaginal birth. These data indicate that a substantial proportion of women entering prenatal care in these clinics with a prior CD history would be considered low risk for VBAC if current pregnancy considerations were favorable.

Almost half of the women with prior CD were unable to report a reason for their previous CD. Forty-three percent of women reported a history of a CD in Mexico. Among women with one prior CD, less than a third had chart notation that their medical records were requested, regardless of where the primary CD had taken place. Of the 45 women who had a history of one prior CD in the US, 29% had their medical records requested—the majority of

requested records were received and in their chart (77%). The same proportion of women with one prior CD in Mexico also had their records requested (29%), however, only one of eight records requested was received (13%).

Discussion

Our study findings suggest that a high proportion of women who had CD histories also had a prior vaginal birth or VBAC among a sample of young Hispanic women seen in primary care clinics in Monterey and Sonoma counties. Additionally, regardless of the location of the initial CD, women in this study had limited access to medical records from a prior CD. To our knowledge, this is the first study to examine both the prevalence of CD and the prevalence of either vaginal birth history or VBAC among Hispanic women in California, and further studies are warranted. As there have been no studies that address the unique barriers to VBAC eligibility that may be posed by the inability to

Table 2 Reproductive history and Cesarean characteristics of Hispanic women with prior CD ($n = 117$)

Characteristic	Hispanic women with prior CD N (%)
N previous cesarean births ($n = 117$)	
1	75 (64%)
2	33 (28%)
3+	6 (5%)
Unknown	3 (3%)
Location primary cesarean ($n = 117$)	
Mexico	50 (43%)
US-current county of residence	42 (36%)
US-other/unknown	25 (21%)
Self-reported reason for primary cesarean ($n = 117$)**	
Premature rupture of membranes	6 (5%)
Fetal distress	5 (4%)
Breech	10 (9%)
Failure to progress	24 (21%)
Unknown	54 (46%)
Other (cephalopelvic disproportion, cord prolapse, twins, stillbirth, pre-eclampsia, infection)	18 (15%)
Medical records requests for primary CD*** ($n = 75$)	
Cesarean in US ($n = 45$)	
Not requested	32 (71%)
Yes requested, but not received	3 (7%)****
Yes, requested and received	10 (22%)
Cesarean in Mexico ($n = 28$)	
Not requested	20 (71%)
Yes requested, but not received	7 (25%)
Yes, requested and received	1 (4%)
Not noted	2
Birth history among women with 2 or more births ($n = 65$)*	
Vaginal birth before or after CD	35 (55%)
VBAC after 1 CD	(14)
Vaginal birth before CD	(5)
Vaginal birth, CD and VBAC	(3)
Timing of vaginal birth not recorded	(13)
2 or more CD	30 (46%)

* For $n = 65$ women who had two or more previous births. For the 13 women where timing of vaginal birth not recorded, all reported 1 prior CD and 2 or more children

** Women self-reported reasons, if known for primary CD to clinicians who recorded reason on the ACOG form

*** Restricted to women with only 1 prior cesarean ($n = 75$)

**** $P < 0.05$ fishers exact test comparing received records from women with US CD vs Mexican CD

obtain medical records documenting the primary CD's incision type, we believe these findings highlight the importance of prioritizing medical records access for

women who are eligible for and desirous of a trial of labor, especially in light of the fears and concerns that have been raised by migrant women about repeat CD [13, 14]. While not all women would be able to successfully attempt a VBAC, recent studies suggest that among women with a prior vaginal birth, both the VBAC success rates are higher and the adverse event rate are lower than among women without prior vaginal birth history [2]. However, VBAC complications can occur and can be severe, so it is important that appropriate counseling be conducted about the risks and benefits, taking into account the language and literacy barriers likely to be experienced for many VBAC-eligible Mexican-born migrant women.

The finding of a low rate for medical records requests was evident regardless of where the CD took place is not surprising since many US physicians are unaware of how to locate this information from Mexican medical sources outside the US and there are no regional medical records exchange programs in place to facilitate access. Although it is possible that women in our study were counseled to attempt a VBAC regardless of documentation of incision type (as in cases where spontaneous labor begins), we believe this is an unlikely explanation for our findings. What is more likely is that there are no policies in place for making medical records requests to facilitate VBAC attempts, and instead, routine repeat CD are scheduled unless a woman is informed about VBAC and makes a specific effort to alter the trajectory for a repeat CD. Unfortunately, we did not have sufficient numbers on non-Hispanic women in our sample to determine if this same health care access disparity was present for non-Hispanic groups as well.

Our study has several limitations. First, it represents a retrospective cross-sectional sample of community health clinics in two rural counties in California and these settings may not be representative of other settings and populations. We believe that future studies should determine the nature of VBAC counseling, determine which groups VBAC may be most suitable for, and assess VBAC outcomes using larger samples and prospective designs. Second, we did not determine the outcome for women in their current pregnancy and it may be that many women themselves decided to attempt a VBAC, in cases where spontaneous labor occurred. However, based on our experiences in the study clinics, women are only referred for VBAC if medical records have been obtained, as women are unlikely to go against their doctors advice, and are fearful of adverse consequences. Third, we used a retrospective design that may have under-reported medical records requests, but since referrals for VBAC are based on chart confirmation of incision type, it is unlikely many such cases occurred. Finally, in our restricted analyses, the sample sizes were considerably smaller, limiting the generalizability of these findings.

A CD is a surgical intervention that implies risk for the mother and potentially for the baby. Surgical wound infections, uterine infections, urinary tract infections, severe anemia and other complications may affect the mom's ability to breast feed and bond with their newborn, and even contribute to post-partum depression. We believe that regional strategies to reduce primary cesarean rates and to increase VBAC attempts among low risk women are urgently needed. Development of regional policies that utilize local data on diverse groups of women accessing prenatal care would facilitate better prediction of candidates for VBAC success. Such policies would help offset the large numbers of unwanted repeat CD experienced by women.

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References

1. Villar J, Carroli G, Zavaleta N, Donne RA, Wojdyla D, Faundes A, et al. Global survey on maternal and perinatal health research group. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. *BMJ*. 2007;335(7628):1025.
2. Macones G, Peipert J, Nelson D, Odibo A, Stevens E, Stamilio D, et al. Maternal complications with vaginal birth after cesarean delivery: a multicenter study. *Am J Obstet Gynecol*. 2005;193(5):1656–62.
3. Betrán A, Merialdi M, Lauer J, Bing-Shun W, Thomas J, Van Look P, et al. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinat Epidemiol*. 2007;21(2):98–113.
4. Centers for Disease Control and Prevention. Diabetes projects: community health workers/promotores de Salud: critical connections in communities. 2005.
5. Martin J, Hamilton B, Sutton P, Ventura S, Menacker F, Kirmeyer S, et al. Births: final data for 2006. *Natl Vital Stat Rep*. 2009;57(7).
6. Menacker F. Trends in cesarean rates for first births and repeat cesarean rates for low-risk women: United States, 1990–2003. *Natl Vital Stat Rep*. 2005;54(4):1–8.
7. MacDorman MF, Menacker F, Declercq E. Cesarean Birth in the United States: epidemiology, Trends, and Outcomes. *Clinics in Perinatology* 2008;35.
8. Zweifler J, Garza A, Hughes S, Stanich M, Hierholzer A, Lau M. Vaginal birth after cesarean in California: before and after a change in guidelines. *Ann Fam Med*. 2006;4(3):228–34.
9. ACOG Practice Bulletin no. 54. *Obstet Gynecol*. 2004.
10. Health Initiative of the Americas, (personal communication, 2009).
11. Office of Statewide Health Planning and Development (OSHDP). Utilization rates for selected medical procedures in California hospitals—hospital patient data by county 2004–2005.
12. Handley M, Hall C, Sanford E, Diaz E, Gonzalez-Mendez E, Drace K, et al. Globalization, binational communities, and imported food risks: results of an outbreak investigation of lead poisoning in Monterey County, California. *Am J Public Health*. 2007;97(5):900–6.
13. Indigenous Farmworker Survey, 2010. <http://www.indigenousfarmworkers.org/health.shtml>.
14. Personal Communication, Enrique Gonzalez-Mendez 2009.