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AN ATTEMPT AT NATURAL DELIVERY IN 1500 AFGHAN PRIMIGRAVIDAE

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ABSTRACT

Introduction: The objective of this study was to assess the advantages and disadvantages of natural labor with minimum intervention as a choice in preference to active labor in Primigravidae.

Materials & Methods: The descriptive study took place in Mercy Hospital, Peshawar, Khyber Pakhtunkhwa, Pakistan, between January 2003 and July 2006 on 1500 Afghan Primigravidae. Only patients at or above 37 weeks of gestation and singleton cephalic pregnancies were included in the study. Induction was employed only when medically indicated. The membranes were kept intact as long as possible. Episiotomy during second stage and use of oxytocics during third stage of labor were generally avoided. Analgesia was used only for repair of episiotomy or lacerations.

Results: Episiotomy was performed only in 258 (16.83%) patients, that included 114 (9.6%) patients of operative vaginal delivery and 144 (9.6%) of normal vaginal delivery. Patients who had neither episiotomy nor tear totaled 1242 (82.72%). There were 12 perinatal deaths (0.8%), but no maternal mortality in the entire series.

Conclusions: Natural vaginal delivery remains a safe and tolerable procedure for most uncomplicated primigravidae and should be practiced as a routine choice for maternal delivery unless otherwise indicated.

Keywords: Primigravidity; Labor and Delivery; Labor, Induced; Episiotomy; Oxytocics.

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INTRODUCTION

Childbirth has been a normal physiological phenomenon for the mammalian female since time immemorial. The human female must have been her own midwife in the early stage of human history. Labor in the vast majority of women proceeds safely for the mothers and their babies. Even today there is no concept of a midwife in many villages of the third world countries. An older woman in the house or next door acts as a birth attendant and at the same time provides immense moral support and emotional comfort. Noninterference, especially the avoidance of pelvic examination, prevents pelvic infection. However some antenatal, intranatal or postnatal abnormality (maternal or fetal) may necessitate special measures or intervention.

Steady progress in bioscience, medical technologies and pharmaceutical innovations where available, has strikingly reduced maternal as well as fetal mortality and morbidity.

These measures, despite their undisputed benefits can be and are being misused in places where caution is lacking because of non-accountability or over accountability.

In the present study, based on attempted natural labor & delivery in a series of Afghan primigravidae, the policy of minimal and absolutely unavoidable intervention was adopted.

MATERIALS & METHODS

This descriptive study comprises 1500 Afghan primigravidae refugees who delivered in Mercy Hospital, Peshawar Pakistan over a period of about three and a half years from 1st January 2003 to 30th July 2007. All these mothers had singleton pregnancies with cephalic presentation and a gestation period of 37 weeks or more. Most of them came in established labor but in some cases labor was induced for medical or obstetric reasons. Detailed history was recorded in each case by a medical member of the staff. Hemoglobin (Hb) estimation, routine urine examination, ABO and RH (D) blood groups, HBsAg and HCV antibody were the basic tests performed on every patient.

Standard practices and routine procedures for safe natural labor and delivery were adopted in all cases. Muslim practices and especially Afghan culture do not allow the presence of a male attendant with the laboring woman. Even

husbands do not stay with their wives in labor. A female relative or friend attends to the psychological comfort and some of the physical needs of the patient during the first stage of labor. No analgesics, anesthetics or psychotropic drugs were given for abolishing or reducing the pains of labor.

Local anesthesia was used only for the repair of episiotomy or perineal tears. Vast majority of these patients with their cultural conditioning bore their labor pains with fortitude and without fuss. Ambulation was encouraged during the first stage of labor. They were allowed to rest in any position they found comfortable. Oral intake of fluids was allowed till late in first stage in low risk patients. During the second stage patients were delivered in supine position in the labor room.

Labor Induction was resorted to for medical or obstetric indications, such as some cases of antepartum hemorrhage (APH) pre-eclamptic toxemia (PET), hypertension, post maturity (over 42 weeks of gestation), fetal abnormality, leaking or ruptured membranes without uterine contractions and in cases of fetal death. Oxytocin was the usual agent employed for induction. Prostaglandins were prohibitively costly for most of these patients. Induction did not include artificial rupture of membranes except in cases of fetal distress or APH. In normal cases membranes were allowed to rupture spontaneously. Labor was augmented only when indicated and was infrequent. Episiotomy was avoided as far as possible except in operative vaginal delivery, imminent perineal tear or fetal distress, and was always mediolateral. Spontaneous expulsion of placenta was awaited without giving oxytocics in the third stage except in cases of postpartum hemorrhage. Brandt-Andrews method was occasionally used to complete the third stage.

Those requiring C-section for valid clinical reasons have been excluded from this series.

RESULTS

Age was recorded in 1485 (99%) of these 1500 primigravidae. In the absence of written birth records, the exact age is not always known in Afghan women. However a reasonably accurate estimate of a patient's age is possible by ascertaining the length of time she has been married, the gap between marriage and menarche and the age at menarche. The average age of these 1485 patients was 23.96 years at the time of delivery. Teenagers (13-19 years) numbered 136 (9.2%). An equal number (19/1485, 1.3% each) of patients belonged to 30-35 years and 36-40 years age groups.

Marital duration was recorded in 1432 (95.5%) cases and they had been married for an average period of 1.74 years. Only 48 patients (3.35%) had conceived after more than two years of married life. Height had been recorded in 1497 (99.98%) and averaged 155.5cm. Those shorter than 150cm numbered 169 (11.30%). The average weight of 1485 (99%) patients in whom it was recorded was 59.8kg.

High blood pressure (BP of 140/90 and above) was found in 132 (8.3%) of 1489 (99.3%) patients whose BP record was available. Of these 1489 patients, 100 (6.7%) had pre eclamptic toxaemia (PET) and 2 (0.13%) developed eclampsia.

Diabetes was remarkable for its rarity being present in only 1 of these 1500 patients. Anemia (Hb <11 g/dl) was recorded in 283 out of 1253 cases (22.6%). In 91 (7.3%) the Hb measured less than 10 g/dl.

ABO blood groups and Rh (D) factor were determined in 1481 (98.73%) of cases. Table 1 shows their distribution in order of frequency.

Table I. Blood Groups & Rh(D) status (n=1481)

Blood Group & RH (D) factor	Number	Percent
A Rh (D) Positive	406	27.41
B Rh (D) Positive	424	28.62
AB Rh (D) Positive	132	08.91
O Rh (D) Positive	360	24.30
A Rh (D) Negative	54	03.65
B Rh (D) Negative	36	02.43
AB Rh(D) Negative	18	01.21
O Rh(D) Negative	51	03.44

Period of gestation was known in 1139 (75.93%) cases and estimated approximately in 361 (24.07%). However even those in the latter group were fairly certain of being "at term". The vast majority of Afghan women accurately remember their L.M.P (last menstrual period) in terms of lunar months and that gives us a reliable figure of days for the period of gestation. Post mature delivery (over 42 weeks) took place in 64 (4.26%) women.

Modes of delivery are summarized in Table 2. This series included only primigravidae who vaginally delivered singleton babies presenting cephalically. Over half of them i.e. 736/1386 (53.01%) went home with intact perineum. Minor perineal tears occurred in 506/1386 (36.51%) and cervical tears in 18 (03.43%).

Table 2: Mode of delivery and maternal trauma in 1500 primigravidae

#	Mode of Delivery	Number	Percent
1.	**Operative vaginal delivery**	**114**	**07.60**
	a. Vacuum extraction with episiotomy	(111)	(97.36)
	b. Vacuum extraction with first degree tear (no episiotomy)	(03)	(02.64)
2.	**Low forceps with episiotomy Normal Vaginal Delivery (NVD)**	**1386**	**92.40**
	a. NVD without episiotomy or tear	(736)	(53.10)
	b. NVD with episiotomy but no tear	(144)	(10.39)
	c. NVD without episiotomy but tears	(506)	(36.51)
3.	**Maternal Trauma**	**524**	**34.93**
	a. With small laceration	(169)	(32.25)
	b. With first degree tear	(255)	(48.67)
	c. With second degree tear	(80)	(15.27)
	d. With third degree tear	(02)	(0.38)
	e. With fourth degree tear	(Nil)	(-)
	f. Cervical tear	(18)	(03.43)

Duration of labor: - The average length of different stages of labor is depicted in table 3. The total length of labor was prolonged beyond 24 hours in 86 (5.76%) of the 1492 patients whose data included recorded time of onset of labor pains. In 55 patients (3.7%) the second stage was prolonged beyond 2 hours out of the 1485 cases who reached the hospital before full dilatation. In only 9 of the 1499 (0.6%) patients the third stage lasted more than 30 minutes.

Table 3: Average duration of Stages of Labor

Stages of labor (documented cases)	No of patients	Average duration	
		Hrs	Mins.
First stage	1492	12	39
Second stage	1476	00	43
Third stage	1495	00	8

Some of the events and interventions in the course of labor of 1302 patients are listed in table 4.

Maternal mortality: - there were no maternal deaths in this series of 1500 primigravidae.

Table 4: Events/ Interventions in 1302 cases (86.8 %)

Events & Interventions	Number	Percent
Leaking membranes on admission (with/without labor pains)	258	19.81
Rupture of membranes before admission	202	15.51
High head	123	09.45
Induction of labor	23	01.77
Augmentation of labor	203	15.6
Fully dilated on admission	137	10.52
Fetal dilated on admission	42	03.23
Fetal distress after admission	27	02.07
Abruptio placentae	22	01.69
Diabetes	01	0.07
Intra uterine death on admission	15	01.15
Hepatitis B	27	01.8
Hepatitis C	13	0.86

Fetal outcomes: - out of the 1500 babies, 28 (1.87%) were dysmature, weighing less than 2.5kgs at birth. Post mature babies numbered 64 (4.27%). Fetal male to female ratio was 795 (53%) and 705 (47%) respectively. The average neonatal weight was needed in 3.13 kg. Their APGAR scores are shown in table 5. No resuscitation was needed in 1349 (89.93%) babies.

Table 5: Apgar score at birth in 1478 babies

APGAR scores	Number	Percent
10/10	1105	74.76
9/10	58	03.87
1-8/10	295	19.95
0/10	20	01.35

The resuscitative measures employed in the remaining 151 (10.07%) babies are listed in table 6. Perinatal mortality is shown in table 7.

Table 6: Resuscitation in 151 Babies

Type of Resuscitation	No of babies	Percent
Aspiration & Suction	76	50.33
Aspiration, Suction & Oxygen	53	35.09
Intubation & Oxygen	15	09.27
Special intervention	07	04.63

Table 7: Perinatal Mortality in 1500 Babies

Perinatal Mortality in Babies	Number	Percent
Live born	1480	98.66
Still born	20	01.33
Intrauterine death on admission	16	01.06
Intrauterine death in hospital	04	0.26
Neonatal death in hospital	8	0.53
Total perinatal mortality	28	1.86
Hospital perinatal mortality	12	0.80

Three of these patients refused to have C-section and let the baby die.

Fourteen babies were born with some obvious congenital abnormality (9.36%). In 5 of them the abnormality was not compatible with life.

DISCUSSION

Active labor is in vogue these days, especially in developed countries. It is in fact an attempt to expedite labor. The components of active labor are induction of labor, artificial rupture of membranes, episiotomy and use of oxytocics drugs in the third stage.

Induction: - Labor Induction is currently one of the fastest growing medical procedures in the USA.[1,2] It is useful in the management of post-term (post mature) pregnancy, some cases of antepartum haemorrhage (APH) fetal abnormality, and fetal death and in expediting delivery when some complications endanger the mother or the fetus. However there has been an unexpected rise in the preterm birth rate even in singleton delivery.[1] Although labor induction has been practiced for many years,[3] the procedure has been more widely used in recent years and the number of medications used for induction of labor has expanded greatly.[4] Labor Induction in primigravidae and those with an unfavorable cervix has been associated with increased Caesarean section (C-Section).[5-7] Although labor induction is generally considered to be safe,[5,6,9] it is not free from major risks, such as uterine rupture (particularly with previous C-section)[4,8] prolonged labor,[10,11] chorioamnionitis,[11] nuchal chord,[12] fetal death[13] and cardiovascular complications[14]. The frequency of labor induction varies in different hospitals and with different obstetricians and types of practices.[16-19]

Birth certificate data for all USA births from 1989 to 1998 (when induction was attempted) shows that 17% of the induced labor ended up in C-section. In the current series an attempt was made to let labor take its natural course as often and as far as safe for mother and fetus. Induction was employed entirely on medical or obstetrical grounds and not for social reasons.

Membranes were not ruptured if there was no urgency to end the labor especially when the labor was well in progress with oxytocin (Syntocinon) infusion. Needless to say, intact membranes provide sturdy safeguard against infection.

Fetal hearts were checked regularly with ordinary stethoscope by the nurse or the doctor whose duty stations were inside the delivery room.

Episiotomy: - Episiotomy was a rare "last resort" intervention before 1920 and used only when the perineum was at extreme risk of rupture.[24] Subsequently its prophylactic and routine use became so common that in 1980 the rate was 63.9% in vaginal deliveries in USA.[25] The efficacy of episiotomy began to be questioned during the late 1970s and 1980s.[25-27] Studies during 1980s and early 1990s suggested that episiotomy was associated with a higher incidence of third and fourth degree lacerations, greater blood loss, risk of infection and increased post-partum pain compared with no episiotomy.[28,29] Further studies failed to produce evidence that the liberal use of episiotomy prevented perineal trauma or pelvic floor laxity. It has been reported that episiotomy provided considerable protection from the first and second degree lacerations,[28,29] but it actually increased the likelihood of more serious third and fourth degree tears with consequent incontinence of stools and flatus. In fact episiotomy is a deliberate second degree tear, so its protective effect against first and second degree tear is an irrationality.

The practice of routine episiotomy declined in the USA from 63.9% in 1980 to 39.2% in 1998.[25] Still many physicians continue to perform the procedure routinely. Episiotomy is employed in an estimated 35.2% of all vaginal deliveries in the USA and represents the most frequent type of surgery performed on female population. This would appear difficult to justify in view of the available evidence. Some observers have, in fact, gone so far as to characterize the continued, widespread use of a procedure as a form of violence against women.[30] The rate of episiotomy was reduced to 9.6% in the present series although it did increase the number of minor lacerations; second degree tears, which are the equivalent of episiotomy, were only 5.33%. Small lacerations in most cases did not require suturing and healed quickly. The postnatal follow up of these primigravidae was unsatisfactory because the ones who healed well did not come for checkup due to social and financial problems. A very small number either became infected or were healing poorly.

Third Stage Of Labor: - The average length of third stage of labor has been reported as 8.3 minutes in a WHO study[31] and 9 minutes in another study,[21] where misoprostol was used in both the studies. Oxytocin and Ergometrine are used more often than prostaglandins to shorten the third stage of labor and to minimize blood loss. The average length of third stage in this series was 7.8 minutes without the use of oxytocic drugs.

Post-Partum Hemorrhage: - Post-partum hemorrhage (blood loss over 500ml) was recorded in 18 (1.2%) of 1489 patients, which is lower than that reported in the literature (3.9%) for all vaginal deliveries.[32] In another study there were 335 cases of PPH of over 1000 ml in 6588 patients, an incidence of 5.1%.[25]

Cesarean Section: - A certain number of primigravidae unavoidably require C-section for some medical or obstetrical indication. A study on 1561 nulliparous woman at term and singleton vertex pregnancy showed that women having spontaneous labor have a 7.8% C-section rate whereas women undergoing elective labor induction had 17.5 % C-section rate and the one undergoing medically indicated labor induction had a 17.7% C-section rate.[33] Since the current study is concerned with various aspects of natural labor and vaginal delivery in primigravidae, the 38 patients who, for one reason or another required C-section are excluded. Inclusion of these 38 cases will raise the total patients to 1538 and give a C-section rate of 2.14%.

Cost: - A USA based study showed that the total hospitalization cost for women undergoing induction electively or for medical reasons was increased by 17.4% as compared with the cost of spontaneous labor.[33] By avoiding elective induction and active labor we believe we made a substantial saving for the patients and the hospital, as this policy made resort to I.V. infusions, oxytocics, sutures, needles and antibiotics unnecessary.

Conclusion

Based on the large series of primigravidae included in the present study, it can be concluded that attempted natural labor and delivery in a competent professional setting is a safe procedure for both mother and child and unless otherwise indicated, should be a routine first choice for uncomplicated primigravidae deliveries.

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