Outcome of Spontaneous Labour In Uncomplicated Pregnancies In A Nigerian Population

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Abstract

Context: Delay in recognizing problems during labour remaining the bane of Obstetrics practice in developing countries. A detailed study of spontaneous labour will help identify the normal pattern of labour that will result in spontaneous vaginal delivery with good fetal outcome. Deviation from this normal pattern will provide an easy method of identifying those at risk of dystocia.
Objective: To study the outcome of spontaneous labour in uncomplicated low-risk pregnancies and to identify possible risk factors for dystocia.
Study Design, Setting & Subjects: This is a descriptive cross-sectional study of all cases of uncomplicated term singleton pregnancies admitted in spontaneous labour at Wesley Guild Hospitals, Ilesa, Nigeria.
Outcome Measures: The main outcome measures are admission cervical dilatation, pain-admission interval, pain-delivery interval admission delivery interval, intrapartum complications, baby's birth weight and Apgar scores.
Results: Of the 297 mothers studied 129 (43.4%) were primigravidas while 168 (56.6%) were multigravidas. Normal labour occurred in 83.9% of multigravida and 55.8% of primigravidas. Ninety five percent of multigravida and 88% of primigravida delivered within twelve hours of onset of labour pains. The mean duration of normal labour (defined as onset of labour pains to delivery) was 6.76 hours (SD=3.19) for multigravidas and 8.83 hours (SD=3.07) for primigravidas.The commonest complications in labour were dystocia and birth asphyxia, which occurred in 21.9% and 10.1% of all cases respectively. The main risk factors for dystocia were a high head and low cervical dilatation on admission in labour.
Conclusion: Dystocia is the commonest complication of spontaneous labour. Primigravidas and multigravidas with an unengaged head in early labour are at increased risk of having dystocia. Labour in this group of patients should be monitored in secondary or tertiary centres.

Key Words: Spontaneous Labour, Duration of Labour, Dystocia, Complications of Labour [Trop J Obstet Gynaecol, 2006, 23:137-140]

Introduction

The term dystocia or difficult labour refers to poor progress of labour and is diagnosed when the rate of cervical dilatation is lower than the lowest 10th centile[1].

Undiagnosed dystocia can lead to significant obstetric complication such as obstructed labour, puerperal sepsis, uterine rupture and postpartum haemorrhage. It is still the major cause of obstetric causalities in Nigeria and other developing countries[2,3]. In the developed countries and some centres in the developing countries routine use of the partograph for early recognition of poor progress in labour have abolished many of the complications associated with poor progress of labour [4,5].

Majority of the obstetric catastrophes in developing countries are from unbooked patients who receive intrapartum care from rural health workers and traditional birth attendants [2,6]. Unfortunately these category of health workers who take care of the bulk of our obstetric patients, find it difficult to use the partograph[7]. Hence they are unable to recognize dystocia for prompt referral. This probably explains why prolonged labour and other complication of dystocia remained the major cause of maternal and perinatal death in developing countries.[2,8].

The aim of this study is to determine the outcome of spontaneous labour in uncomplicated pregnancies in a Nigerian population and extract data that may be useful in early recognition of dystocia.

Materials and Method

All booked patients admitted in spontaneous labour and delivered in Wesley Guild Hospital Ilesa, between March 2000 and February 2001 were the subjects of this study. Only patients that were carrying uncomplicated singleton term pregnancies in cephalic presentation and with no past obstetric and medical problems were included in the study. Grandmultiparous women (Parity >=5) were excluded. Information regarding the maternal demographic details, duration of labour, intrapartum complication and fetal outcome were retrieved from the case notes of

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eligible patients.

In our centre labour is routinely monitored with the use of the partograph and dystocia is identified from the cervimetric progress in the first stage of labour using the principles described by Philpott and Castle[9] which takes the minimum rate of cervical dilatation of 1cm per hour. Delay in second stage of labour is diagnosed when it lasts longer than 1hour in primigravida or 30 minutes in multigravida[10]. Active management of the third stage of labour with administration of oxytocin at delivery of the anterior shoulder is routinely employed.

In this study labour is classified as normal if it is uncomplicated and results in a spontaneous vaginal delivery of a baby whose Apgar score at one minute is 7 and above. Patient with normal labour were compared with those with dystocia to identify risk factors for dystocia.

For the purpose of this study duration of labour is taken as time of onset of labour pains to delivery of the baby. Post partum hemorrhage is taken as bleeding in excess of 500mls within 24hrs of delivery. Birth asphyxia is diagnosed in any infant with a one minute apgar score less than 7.

Results

Table 1
Outcome of labour in uncomplicated pregnancies delivered in Wesley Guild Hospital Ilesa, Nigeria. Values given n(%)

Outcome	PrimipN = 129	Multip n = 168
Complications*		
Dystocia	46 (35.66)	19 (11.31)
Asphyxia	24 (18.61)	6 (3.57)
Hypertension	3 (2.33)	3 (1.79)
1^0 Postpartum Haemorrhage	3 (2.33)	3 (1.79)
Nil Complication	72(55.81)	141(83.93)
Mode of Delivery		
SVD	109 (84.50)	164 (97.62)
Caesarean Section	15 (11.63)	3 (1.79)
Vacuum	5 (3.86)	1 (0.59)

* (19 primiparous and 4 multiparous patients had multiple complications.
+Numbers in bracket represent percentage of total .

Table 2
Summary of Duration of Normal labour in uncomplicated pregnancies at Wesley Guild Hospital Ilesa Nigeria, values given in mean hours (SD)

	Primigravida n = 72	Multigravida n= 141
1. Pain Admission Interval *	4.52 (1.88)	3.71 (2.19)
2. Pain Delivery Interval +	8.83 (3.07)	6.76 (3.19)
3. Admission Delivery Interval ±	3.69 (2.63)	2.40 (2.37)

* This is the time from onset of labour pains to admission in the labour ward.
+ This is the time from onset of labour pains to the delivery of the baby.
±This is the time from admission to delivery of the baby.

The total number of deliveries during the study period was 1,080 out of which 305 (28.2%) were uncomplicated term singleton pregnancies with cephalic presentation. Of the 305, eight were gradmultiparas and were excluded from further study as their number were considered too small for meaningful analysis. Of the remaining 297 patients, 129 (43.43%) were primigravidas (para 0) while 168 (56.57%) were multigravidas (para 1-4).

Among the primigravidas 57 (44.19%) had complications in labour and 15 (11.63%) were delivered by caesarean section. Twenty seven (16.07%) of multigravida developed intrapartum complications and only 3 (1.79%) were delivered by caesarean section. The commonest complications of spontaneous labour were dystocia and birth asphyxia which occurred in 21.9% and 10.1% of all cases respectively. Table 1 showed the details of the outcome of labour.

In the group of patients with normal labour 85.1 percent of multigravida and 73.1% of primigravida delivered within 12 hours of the onset of labour pains. In this group the mean cervical dilation on admission was 6.08cm (SD=2.46) for primigravida and 6.64cm (SD=2.61) for multigravidas. The mean duration of labour was 8.83 hours (SD=3.07) for primigravidas and 6.76 hours (SD=3.19) for multigravidas. Table 2 showed the details of duration of normal labour.

Table 3 and 4 compares patients with normal labour with those who had dystocia. Although there was no significant difference between the two groups in the pain admission interval patients with dystocia were admitted with a significantly higher head level and lower mean cervical dilatation than those with normal labour.

Discussion

Table 3:
Characteristics of Primigravida with normal labour outcome compared with those with dystocia at Wesley Guild Hospital Ilesa, values give in mean (SD)

Characteristics	Normal Labour Outcome N=72	Patients with DystociaN= 46	P Values
Gestational Age (Weeks)	38.75 (1.23)	38.29 (5.60)	0.505
Maternal Height (cms)	160.13 (7.48)	158.51 (7.87)	0.268
Symphysio Fundal Height (cms)	36.32 (1.72)	35.85 (5.25)	0.475
Babies Birth Weight (kg)	3.05 (0.39)	3.05 (0.43)	0.973
Pain admission interval (hrs)	4.5 (1.88)	4.2 (1.94)	0.42
Head Descent (in 5th Palpable)	2.07 (1.18)	3.09 (0.92)	0.000
Admission Cervical Dilatation(cms)	6.08 (2.46)	2.83 (1.35)	0.000

Table 4:
Characteristics of Multigravida with normal labour outcome compared with those with dystocia at Wesley Guild Hospital Ilesa .Values in mean (SD)

Characteristics	Normal Labour Outcome n=141	Patients with Dystocia n= 19	P Values
Gestational Age (Weeks)	38.62 (3.27)	39.22 (1.44)	0.443
Maternal Height (cms)	158.79 (6.21)	159.53 (6.19)	0.629
Symphysio Fundal Height(cms)	36.81 (1.87)	36.89 (1.78)	0.864
Babies Birth Weight (kg)	3.17 (0.42)	3.11 (0.45)	0.529
Pain Admission interval (hrs)	3.71 (2.19)	4.14 (2.10)	0.44
Head Descent (in 5^{th} Palpable)	2.13 (1.59)	3.39 (0.61)	0.000
Admission Cervical Dilatation(cms)	6.64 (2.61)	3.53 (1.26)	0.000

The mean duration of normal labour is 6.76hrs (SD=3.19) for multigravida and 8.83hours (SD=3.07) for primigravidas. The commonest complication of spontaneous labour is dystocia. Primigravidas and any patient with a high head in labour or low cervical dilation on admission are at significant risk of this complication.

Onset of labour is diagnosed here as the onset of painful regular uterine contractions and the duration of labour are taken as the interval between this and the delivery of the baby. We recognize that this interval is technically the duration of the first and second stages of labour but has been used in this context in the study to enhance early recognition of abnormal labour progress. Focusing on the onset of labour pains as the beginning of labour is a useful way of encouraging early presentation in hospital.

The disadvantage is that mother's may confuse Braxton-Hicks contraction and other abdominal pains with labour pains. However her coming to hospital with any of these pains will allow thorough assessment. If pain is Braxton-Hicks the patient may be reassured following a period of observation, while abdominal pain from any other cause require careful evaluation and management.

The high incidence of complication among primigravidas in spontaneous labour, found in this study, supports the high-risk status traditionally ascribed to these group of patients[11]. With a complication rate as high as 44.2 percent and caesarean section rate of 11.6 per cent in spontaneous labour, primigravidas are better advised to labour under supervision in a secondary or tertiary centre where facilities are available for early diagnosis and proper management of possible complications.

The commonest complication of spontaneous labour in this series was dystocia. This is similar to the findings of other authors even in developed countries[12,13]. We did not find any significant difference between patients with normal labour and those with dystocia with respect to maternal height, symphysiofundal height

and birth weight. This is similar to the findings of Ould El et al[14] who found that these parameters are poor screening tools for dystocia. However in line with the findings of Gibbs et al[15] and Briggs[16] this study showed that patients with a high head in early labour are at increased risk of dystocia and should therefore be referred for skilled intrapartum care.

Meaning of the Study and Implication for Clinicians Scientists, Policymakers and Patients

As confirmed by this study dystocia has long been found to be a common complication of spontaneous labour[12,13]. Active management of labour with the use of partograph has therefore been recommended for early diagnosis and management of this complication[17]. Routine use of this method in many centres has virtually eliminated prolonged labour and other sequelae of dystocia[4,5]. Application of the partograph however requires highly skilled personnel.

Unfortunately many of our patients in Africa labour under unskilled personnel who find the partograph difficult to use[7]. There is therefore a need for an alternative means of early recognition of dystocia, which will be easy to understand by all levels of birth attendants. Use of a specified average duration of labour as a screening tool may be a useful alternative to the partograph in low resource settings.

The pain delivery interval as used in this study provides an easily understood means of assessing duration of labour. All the patients in this study were able to recall the time of onset of labour pains. Both the patient and the attendant will therefore be able to determine how long labour has been.

Referral of patients based on extension of labour beyond average expected duration may be useful in early diagnosis of dystocia. The average duration of labour in a particular setting will then be analogous to the alert time in the partograph.

In this study more than 80 percent of parturients with normal labour delivered within 10 hours of onset of labour pains and the mean pain-delivery interval was 7.44hrs (SD=3.12) (8.83 for primigravidas and 6.76 for multigravida). Birth attendants can therefore be advised to refer patients to secondary or tertiary centres if not delivered within 8hours of onset of labour pains. This instruction can be included in the protocol for the management of labour in primary health centres.

The group of patients identified as being at increased risk for dystocia should be identified and referred for intrapartum care where facilities are available for appropriate intervention.

Further studies are required to assess the sensitivities and specificity of this protocol as a screening tool for dystocia in spontaneous labour.

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