MANAGEMENT OF 'BEYOND—TERM' GESTATION

by

R. Rajan
V. S. Girija Leela
S. Ajitha Kumari
P. S. Ramani
A. Sheelamani
and
Mariam Thomas

SUMMARY

Four hundred and thirty-six cases of normal pregnancy within ± 4 days of due date having no risk factors were mentioned and decision as to intervention and non-intervention based on the inducibility of cervix was taken. Repeated investigation such as OCT and amniocentasis was necessary in atleast 50 per cent of cases.

Introduction

Recent approaches to the management of pregnancies carried beyond term have focused primarily on fetal surveillance techniques that allow avoidance of unnecessary intervention but are capable of detecting foetuses at risk for uteroplacental insufficiency which could be saved by timely intervention (Freeman *et al* 1981 and Weingold, 1982). However, accurate methods of monitoring and the facilities are not yet well enough developed, and until they are, a fairly widespread policy of induction of labour, when the cervix is favourable, appears to offer a more rational and reasonable approach (Freeman *et* al 1981; Macnaughton, 1982).

When the dates are certain and maturity of the foetus is ensured, elective induction of labour at term is logical, provided the cervix is favourable. Little maternal risk is encumbered and the perinatal outcome is significantly improved by obviating the avoidable foetal compromise of prolonged pregnancy. Though less significant, this approach adds to the convenience of the patient and her obstetrician (Rajan and Ramani, 1981 and Rajan *et al* 1983).

Nonethelsss, it is observed that not more than 50 per cent of subjects have a cervical score favourable for induction at term (Rajan *et al* 1984). Hence, while 50 per cent is exposed to a greater risk of induction because the cervix is unfavourable. On the assumption that there is an increased perinatal mortality and morbidity associated with prolonged pregnancy, and taking into consideration our limited ability to diagnose antepartum foetal compromise, we have developed a protocol for the management of pregnancies carried beyond tem. This standardised clinical

From: Department of Obstetrics and Gynaecology, Medical College Hospital, Alleppey, Kerala.
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approach which is helpful in avoiding both unnecessary intervention and perinatal loss is described in this communication.

Material and Methods

All consecutive normal gestations, within ± 4 days of the due date, having no risk factors were considered for elective induction of labour at term. Intervention was by amniotomy if the cervical score of Bishop was 6 and above. Oxytocin infusion was reserved for those who failed to be induced within 12 hours of afniotomy. Without fail labour is completed within 24 hours of amniotomy.

If induceability of the cervix was less than optimal (Bishop score 5 or less than 5) a policy of non-intervention was adopted provided the antepartum surveillance technics assured foetal well-being. Surveillance methods employed were Oxytocin Challenge Test (OCT) in all subjects, amniocentesis when indicated, and since recently foetal movement recording. The discussion will be mainly on how OCT could be employed as primary method of foetal surveillance for pregnancies prolonged beyond term.

If OCT was positive at term amniocentesis was performed to determine the nature of amniotic fluid including meconium staining and to assess lung maturity, and even though cervix was less favourable amnitomy was performed. If labour did not progress satisfactorily or intrapartum fetal distress developed pregnancy was terminated by caesarean section. If lung maturity was doubtful salbutamol was infused in optimal concentration, for inducing lung maturity, before induction was attempted.

A negative OCT was considered reassuring on foetal status and permitted conservative waiting for one week, awaiting spontaneous labour or the time when cervix became more ripe for safe induction. In the event the cervix remained unfavourable at the end of 41 weeks, OCT was repeated and further management determined as indicated by the results of OCT. Thus if OCT was negative and reassuring non-intervention aiming at spontaneous onset of labour was practised, and in this study pregnancy prolongation to a maximum of 44 weeks was recorded.

Observations

This study extends from 29th September, 1982 to 4th February, 1984, and during this period of 1 year and 4 months 436 normal gestations within ± 4 days of due date and having no risk factors were considered for elective planned induction of labour. Elective induction by amniotomy was accomplished in 203 subjects who had a Bishop score of 6 or more (46.56%). Vaginal delivery was possible in all except 4 subjects, and these 4 subjects of failed induction were delivered by caesarean section within 24 hours of induction (1.97%). Evidence of intrauterine or neonatal asphyxia was observed in 4 babies (1.97%), and there was no perinatal mortality.

While 203 subjects had favourable cervical score for induction of labour, the remaining 233 subjects (53.44%) had poor score of 5 or below and were considered less suitable for labour induction. Preferring non-intervention, either spontaneous onset of labour or a more favourable cervix within a week's time was anticipated. To ensure that the foetus wil not be compromised during this period of optimistic waiting, foetal surveillance was performed in all these subjects with unfavourable cervix employing Oxytocin Challenge Test (OCT). Six subjects had a

positive OCT indicating probable foetal compromise, and in all of them, after ensuring pulmonary maturity (shake test) amniotomy was performed (2.58%). Vaginal delivery could be effected in 2 and caesarean section (mainly for intrapartum foetal distress) was performed in 4 (66.67%) (Table I).

Among the 52 subjects who had an unfavourable cervix for induction at 41 weeks and also had a negative OCT, 37 (71.15%) established spontaneous onset of labour. Of them 34 were delivered vaginally and 3 required caesarean section (8.11%) of which one was for foetal distress.

TABLE I
Delivery at Term

Method of termination	No. of patients	Percentage
Total number of consecutive term gestations studied:		436
Elective planned induction of labour by amniotomy	203	46.56%
Indicated termination for positive OCT	6	2.58%
Total patients delivered at 40 weeks	209	47.94%

Of the remaining 227 subjects who could not be induced at term and had a negative OCT (ensuring fetal well being for a week), 158 (69.60%) had spontaneous onset of labour within one week. All except 12 (7.60%) were delivered vaginally. Among the 12 subjects delivered by caesarean section, 4 (33.33%) had foetal distress. At the end of 41 weeks there were 69 subjects who had not yet delivered, and 13 of them had a favourable cervix for amniotomy (18.84%) and all except 1 (cord prolapse) were delivered vaginally.

There were 56 patients at the end of 41 weeks who had unfavourable cervix, and OCT was positive, in 4 of them (7.14%). Labour induction in these 4 subjects resulted in vaginal delivery in 1 and caesareas section in 3 (2 for foetal distress) (Table II).

Thus at the end of 42 weeks there were 15 subjects who were undelivered, and this is 3.44% of the total 436 patients. Among them elective induction was possible in 5 subjects (33.33%), and all were delivered vaginally. Among the 10 subjects with unfavourable cervix none had a positive OCT, and 4 delivered spontaneously within one week and 2 by caesarean section. At the end of 43 weeks there were 4 patients with unfavourable cervix who delivered spontaneously at 44 weeks or after (Table III). There was no perinatal loss in the entire series.

When we consider the total number of 436 subjects who were seen at term, 203

TABLE II
Delivery at 41 Weeks

Method of termination	No. of patients	Percentage
Total number of patients not delivered at 40 weeks:		227
Spontaneous onset of labour	158	69.60%
Elective induction	13	18.84%
Indicated induction for + OCT	4	7.14%
Total delivered by 41 weeks	175	40.14%

TABLE III
Delivery After 41 Weeks

Method of termination	No. of patients	Percentage
Total patients not delivered at the end of 41 weeks		52 (11.92%)
Spontaneous labour between 41 and 42 weeks	37	71.15%
Elective induction at 42 weeks	5	9.61%
Spontaneous labour at 43 weeks	6	11.54%
Spontaneous labour at 44 weeks	2	3.85%
Spontaneous labour after 44 weeks	2	3.85%

(46.56%) had elective induction of labour in view of the favourable cervix. A small group of 6 patients (1.38%) were deliberately delivered because of positive OCT. Thus 47.94% were delivered at term. Between 40 and 41 weeks, 158 subjects were established in labour spontaneously (36.24%), and another 13 subjects (2.98%) had a favourable cervix for induction of labour, and a small group of 4 subjects (0.92%) necessitated pregnancy termination in view of positive OCT. By the end of 41 weeks altogether 88.08% of the total patients were delivered. Spontaneous onset of labour occurred in 37 subjects between 41 and 42 weeks (8.48%), labour was electively induced in 5 at 42 weeks (1.14%), and thus by the end of 42 weeks 97.70% were delivered. The remaining 10 subjects (2.30%) delivered spontaneously, 6 between 42 and 43 weeks, 2 between 43 and 44 weeks and 2 after 44 weeks, and all were delivered vaginally (Table IV).

Abnormal OCT indicating a probable foetal compromise was observed in 6 subjects at term, and 4 subjects at 41 weeks. Intrapartum or neonatal aspyxia as indicated by bradycardia, meconium staining of liquor or cord prolapse was detected in 26 subjects (5.95%). There was no perinatal mortality in this series of 436 subjects (Table V).

Delivery was completed by caesarean section in 33 subjects (7.57%). Among the 203 subjects undergoing elective induction of labour 4 subjects needed caesarean section for failed induction (1.97%). By contrast, among the 233 subjects in whom non-intervention was advocated for

TABLE IV
Cumulative Delivery Rate
(Total: 436 patients)

Method of termination	No. of patients	Percentage
Elective induction at term	202	46.56
Indicated induction at term (+ OCT)	6	1.38
Total delivered at term	**209**	**47.94**
Spontaneous labour in 41 weeks	158	36.24
Elective induction at 41 weeks	13	2.98
Indicated induction at 41 weeks (+ OCT)	4	0.92
Total delivered by 41 weeks	**384**	**88.07**
Spontaneous labour in 42 weeks	37	8.48
Elective induction at 42 weeks	5	1.14
Total delivered by 42 weeks	**426**	**97.70**
Spontaneous labour after 42 weeks	10	2.30

TABLE V
Perinatal Outcome in 436 Subjects

Positive OCT at term	6 (2.58%)
Positive OCT at 41 weeks	4 (7.14%)
Foetal distress:	14
Meconium stained liquor	9
Neonatal asphyxia	2
Cord prolapse	1
Total:	26 (5.95%)

want of a favourable cervix, 20 subjects needed caesarean section (12.44%) (Table VI).

absence of perinatal mortality at the cost of a low caesarean section rate of 1.97% (failed induction).

However, we find that this simple, effective and safe obstetric management is not applicable to 53.44% of subjects at term, since they do not have a favourable cervix for induction. Thus one half of the term gestations do not enjoy the privilege of elective plannel induction. The obstetric management of choice open to them will be (i) indiscriminate induction irrespective of nature of cervix,

TABLE VI
Incidence of Caesarean Section

Obstetric management	No. of patients	Caesarean sections	Percentage
All patients	436	33	7.57
Elective induction at term	203	4	1.97
Conservative management	233	29	12.44

Discussion

The analysis documented in this communication is only a continuation of our study on elective induction of labour published in 1983 (Rajan *et al*, 1983). We have established that elective planned induction of labour is the ideal obstetric management for term gestations in low risk subjects, particularly since accurate and simple methods of foetal surveillance are not yet available for monitoring the postdated pregnancies. While the maturity of the foetus is ensured, the hallmark for successful induction of labour is inducebility of the cervix. In this study we observe, among the 436 term gestations only 46.56% have a favourable cervix for successful elective induction (Bishop score 6 and above). They enjoy all the benefits of safety convenience, minimal perinatal morbidity (1.48%) and

(ii) conservative approach and total non-intervension anticipating spontaneous onset of labour, or (iii) careful foetal surveillance, to save the compromised foetus by timely intervention and at the same time to avoid unnecessary intervention when foetal well-being is ensured. We have opted for the third choice of foetal surveillance by OCT and determining the need for induction or waiting for spontaneous delivery or a favourable cervix for induction.

By employing this standardised clinical protocol which obviates unnecessary intervention and a perinatal loss we observed that 36.24% established in labour spontaneously between 40 and 41 weeks of gestation and another 2.98% had a favourable cervix for induction of labour. Thus a total of about another 40% delivered by the end of 41 weeks. At term 6 subjects (2.58% of unsuitable group for

induction) had probable foetal compromise as indicated by positive OCT, and at the end of 41 weeks there was almost 3 times higher incidence of positive OCT (7.14%), and all these subjects were deliberately induced labour with a high incidence of caesarean section mainly performed for foetal distress (66.67% and 75% respectively).

Thus, by 41 weeks 88.08% of the total 1436 had delivered, and another 9.62% had delivered by the end of 42 weeks, leaving a very small number of 10 subjects (2.30%) undelivered at the end of 42 weeks. All of them delivered spontaneously at 43 and 44 weeks. There was no perinatal loss in the entire series, and perinatal morbidity in the form of bradycardia meconium staining of amniotic fluid and cord prolapse was recorded in a very small number of 29 subjects (5.95%).

The advantage of this approach of careful monitoring and deciding between intervention and nonintervention based on induceability of cervix and well-being of the foetus is the avoidance of perinatal mortality and minimal perinatal morbidity. However, to achieve this goal atleast 50% of the patients had to undergo indefinite and anxious waiting and were subjected to repeated examinations and investigations such as OCT amniocentesis.

When we analyse the incidence of caesarean sections in this series it is doubtful that this approach of nonintervention has materially reduced the incidence of abdominal deliveries. Total incidence of caesarean section in the 436 subjects is 7.57%. Further breakdown of the figures indicate that among the elective induction group of 203 subjects caesarean section rate for failed induction was only 1.97%, whereas among the 233 with unfavourable cervix at term and in whom the conservative approach was adopted the caesarean section rate was 12.44%, major indication being foetal distress. Hence it is speculated that a liberal attitude towards elective induction may in all probability yield the same perinatal outcome with almost the same incidence of caesarean section. In such a situation the indication for caesarean section may be failed induction as against the present indication of foetal distress. This view is more tenable when we review our earlier results for elective induction of labour performed irrespective of the nature of cervix (Rajan and Ramani, 1981). In that series, where induction was practised from Bishop score 4 and above, a good perinatal outcome was achieved with a caesarean section rate of 4%.

Based on these observations we feel that liberal attitude towards elective induction with a maximum period of waiting for not more than 41 weeks will be a better alternative to avoid the unnecessary anxiety on the part of the prospective parents, without compromising the perinatal outcome and increasing the incidence of abdominal deliveries. This attitude may also reduce the need for unnecessary laborious foetal surveillance technics employed for monitoring prolonged pregnancies.

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