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# **JOURNAL OF BATTICALOA MEDICAL ASSOCIATION**

***Vol - 01, July 2005***





# JOURNAL OF BATTICALOA MEDICAL ASSOCIATION

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## Vaginal birth after caesarean section Its success and failure

Karunakaran K.E.\*

Caesarean section (CS) delivery has become an inevitable option in modern obstetric practice. The advancement of safety in this procedure has led to an unprecedented increase in the rate of CS, i.e. 6% of all births in 80s rises to over 20% in late 90s (Watson & Boves 1999). Mode of delivery after caesarean section is still holding a debating point. Several workers have been attempting to formulate a system to select women who could be allowed a trial of labour (or Trial of scar). This article looks into the aspects of the influence of past caesarean section, on subsequent obstetric performance.

### Historical Background of Caesarean Section

The origin of the operation and the term caesarean section are uncertain, but are of great antiquity. Traditional Roman Law in the seventh century BC ordered that the procedure to be performed upon woman dying in the later few weeks of pregnancy in the hope of saving the child. The law "Lex regia", later became known as Lex Caessarea under the emperors, and hence the name. There were also reports that the operation was performed on the living about 140 B.C and that Emperor Julius Caesar was born in this manner and hence the name "Caesarean section". There were also references that the Latin verb 'caedere' – to cut and the verb 'seco' also means 'cut' were the origin of the name. All of these references are legends and it is pertinent that no such operations on the living were mentioned by Hippocrates and other writers. Even Soranus who in 2<sup>nd</sup> century AD covered all aspects of

obstetrics didn't have mention of this procedure.

The procedure of abdominal delivery was almost always fatal, due to sepsis & bleeding. Various techniques were designed; Porrus (1876) performed subtotal hysterectomy during caesarean delivery to prevent death due to bleeding. It was only in 1882 when Max Singer advocated the suturing of uterus after delivery. Silver wire was used for suturing. This was the major step towards reducing maternal death from haemorrhage. The extra peritoneal approach was introduced in 1907 but didn't gain popularity. Trans peritoneal lower segment caesarean section was advocated by Kroing (1912) and later modified by Munro Kerr (1926) as a transverse lower segment incision, that proved much safer procedure and has been universally accepted since then.

The subsequent development of antibiotics, antiseptic and sterilization techniques, safe anesthesia & blood transfusion have made the CS, a much safer procedure. The operation which was primarily done for severe contraction of pelvis was also performed for many maternal indications. With the development of modern technology in labour wards and neonatal units such as electronic foetal monitoring, neonatal ventilation etc., there was a further rise in caesarean section deliveries, even to include very low birth weight (VLBW) babies, to prevent 'possible intra cranial trauma'. Further there have been social, ethical & medico legal factors which have been added to the list of indications leading to the alarmingly high rate of CS all over the world.

### Steadying Caesarean Section Rate

Attempts are being made by obstetricians and obstetric centers to steady and reduce the caesarean section rate. Professional bodies showed concern and appointed special

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committees to enquire into this aspect and suggested suitable measures to control this rate.

A survey performed in Scotland (Wilkinson et al) on the indications for caesarean section suggested that there would be scope to increase the vaginal delivery rate. It stated that before this can be attempted, agreement must be reached by clinicians about effective management of particular problems. The survey also stated that women also need to have ready access to 'evidenced based information' about CS.

In another survey Leitch & Walker reported that the overall increase of CS rate from 6-8% in 1962 to 18.1% in 1992 was possibly due to a lowering in threshold of the obstetricians and the women in their care, on the decision to carry out a CS, rather than considering the changes in obstetric management.

In analyzing the major indications for CS, repeat CS is leading the others such as dystocia, major degrees of placenta praevia, breech presentation & foetal causes. (Table I). In selected South Asian Teaching Institutions the repeat CS rates were high ranging from 18-40% of all CS, (Rao - 1996).

Therefore attention should be made on the management of women with previous CS in order to reduce the CS rate.

### Management of Women with Previous CS Scar

In 1918 Craigin introduced the concept of "once a CS, always CS", when referring to classical CS. However for the past 3 decades or more, obstetricians in Sri Lanka have been performing transverse lower segment caesarean sections, like the practice in many other countries. The integrity of the lower segment scar has been studied extensively. Many series showed that, the vaginal delivery has been associated with less maternal morbidity & mortality than with repeat CS and the loss of integrity of lower segment scar has been as low as 0.3-1.7% & occurred as frequently in woman without labour as in those allowed a trial of labour. These series also showed that the rupture of lower segment scar does not carry additional foetal risk if managed properly. (Chua et al 1996).

It has also been shown that scar does not influence significantly in the uterine activity in labour, even with the use of oxytocin augmentation. Recent observations by Rudra & Perera (1995) however showed that use of oxytocin routinely has been associated with more scar rupture (3.75%) and more repeat CS rate (37.5%) compared to non oxytocin group (1.25% and 27.5% respectively). However in other studies (Arulkumaran et al; 1989) where syntocinon augmentation was employed on those trials of labour, which did not progress, showed 78% delivered vaginally. In another study, the same team of workers showed that scar rupture could occur with prolong

<i>Indications</i>	<i>USA</i>		<i>Women's Hospital(Madras)</i>	
	<i>1980</i>	<i>1990</i>	<i>1970</i>	<i>1992</i>
Repeat caesarean	31.9%	37.5%	19.2%	33.4%
Dystocia	28.4%	30%	23.4%	19.4%
Foetal distress	4.7%	9.7%	10.7%	22.3%
Malpresentation(breech)	11.8%	8.5%	12.3%	8.4%
Others	22.5%	13.5%	34.4%	16.5%

**Table I. Indications for caesarean section; source Rao 1996**

oxytocin use (over 6 hours) despite poor progress. Our observation at General Hospital, Batticaloa (published in this book, pp44-47) showed 90% vaginal delivery with oxytocin augmentation and one scar dehiscence among the 29 women, included in the study.

Although trial of labour with more than one previous lower segment CS, still remains controversial, there was evidence that such trial in carefully selected women, led to uncomplicated vaginal delivery. In one such study (Chattopadhyay et al 1994) 103 women (89%) out of 115 with 2 CS delivered vaginally. Prostaglandin was used for induction in 37(32%) women & oxytocin augmentation was employed in 32(28%). One scar dehiscence (0.8%) was detected. Vaginal delivery after 2 CS too was reported from Jaffna, and in Batticaloa as well. Therefore trial of labour in women with two previous CS appears to be a good option.

It was once thought that development of post operative wound infection may lead to weakened scar. Studies however showed that there was complete myometrial regeneration and a 'tougher' scar in the case of previous puerperal infection. Uterine rupture and dehiscence was not significantly high in this group of women when given vaginal birth.

Considerations have also been made on the necessity of exploration of the CS scar, after vaginal delivery. Such exploration should be done carefully as the examination too may cause rupture of the scar. Further, many workers including us are of the view that this practice is not necessary. Therefore it is pertinent that vaginal delivery after CS should be an inevitable option.

It is also essential that concerns of the clinicians in various aspects of vaginal delivery, such as integrity of scar, selection of women for vaginal delivery, & medico legal implications should be addressed and therefore clear consensus could be reached, in the practice of

allowing women with previous CS for vaginal delivery. Following discussion will shed light.

Gathering information in Sri Lanka & abroad show that the uterus with lower segment scar could behave as the unscarred uterus with regard to labour. Table II shows that in a few studies done in Sri Lanka the rate of vaginal delivery is in the range of 60-72.5%. In an attempt of formulating a 'predictive score system for patients undergoing trial of scar', Panadare & Amarasinghe (1998) found that four variables ie, Maternal Age, Prior Vaginal Delivery, Estimated Birth Weight & Dilatation of Cervix at the onset of labour have been associated with prediction values of the outcome of labour. Randeniya (2001) showed that the ante natal ultra sound measurement of lower uterine segment thickness highly correlates with the finding at caesarean section. Use of ultra sound in this aspect should be validated in clinical practice. Further, the progress of labour too is a useful predictive factor. Satisfactory progress in cervical dilatation (1cm/hour) with optimum uterine activity for the initial few hours of labour will lead to vaginal delivery (Arulkumaran et al 1989).

Use of oxytocin augmentation with satisfactory Bishop's core too will lead to vaginal delivery. Repeat CS is commonly performed in women with slow progress in labour, placenta praevia and significant foeto pelvic disproportion. Advanced maternal age and prolong inter pregnancy interval need not be the indications for repeat caesarean section.

**Table II. Percentage of vaginal birth after caesarean section; Sri Lankan experience.**

Rudra & Perera	72.5 %
Karunakaran et al	64.5 %
Panadare & Amarasinghe	60.00%



**Factors predicting the pregnancy outcome with past caesarean section**

<p>Maternal age</p> <p>Prior vaginal delivery</p> <p>Estimated birth weight</p> <p>Ante natal assessment lower segment by ultrasonography</p> <p>Cervical dilatation at the onset of labour</p> <p>Progress of labour</p>
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Medico legal consequences for failure in medical practice are rising gradually. However the current practice of conduct of delivery with previous CS in well equipped hospitals under obstetrician care and the women's choice of vaginal delivery after caesarian section minimize such risks.

Therefore proper selecting women for trial of scar, clear explanation of the conduct of the trial of scar to woman and her husband and prompt action when situation demands will make the practice of vaginal delivery after caesarean section, safe.

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