Can the rate of cesarean section be reduced?

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ABSTRACT

Objective: To look into all cases with previous one cesarean section who were cared for and delivered at Armed Forces Hospital, Riyadh, between January 1990 and December 1998, to determine its prevalence, final method of delivery, and outline measures of reducing its incidence.

Methods: Retrospective analysis of hospital records of all women with previous one cesarean section who had either a repeat cesarean section or delivered vaginally after cesarean section.

Results: Between 1990 and 1998, 61,060 mothers were delivered. Two thousand five hundred and seventy eight patients had one previous cesarean section. They represented 3.5% of the total number of deliveries. Nine hundred and sixty eight (37.5%) cases had repeat cesarean section. Of the 1610 (62.5%) mothers who achieved vaginal delivery, 102 (6%) had ventouse, 42 (3%) had forceps and 22 (1%) had an assisted breech delivery. Rupture of uterine scar was reported in 15 cases. There were no maternal or perinatal deaths.

Conclusion: Patients with one previous cesarean section are three times more likely to have a cesarean section as compared to mothers with unscarred uterus. Reducing the overall cesarean section rate is possible through a closer look at the primary indication for the first cesarean section. A protocol is needed to allow more cases with one or more previous cesarean section to have trial of vaginal delivery under close monitoring and involve the senior staff more in the diagnosis and management of cases of dystocia and the use of Oxytocin when indicated.

Keywords: Cesarean section, breach, perinatal deaths, ventouse, forceps.

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The rate of cesarean deliveries has increased dramatically in recent years in many obstetric units worldwide from a low 5% in the 1960's to a high of 25% in the 1990's.[1] Cesarean section (CS) is now the most frequently performed operation in the United States. History of a previous CS has become the most frequent common reason for performing a cesarean operation.[2] The obstetric unit of the Armed Forces Hospital, Riyadh (RAFH), Saudi Arabia is no exception. The CS have increased from 7% in 1979 to 13% in 1998, and forceps deliveries have decreased from 25% in 1979 to 0.5% in 1998.[3]

The aim of this study was to review all cases of previous one CS who were cared for and delivered at RAFH obstetric unit, determine the final method of delivery, indication for the repeat CS, and outline how this repeat CS can be reduced.

Methods. Retrospective analysis of hospital records of all women with previous one CS who had either a repeat CS or delivered vaginally after CS (VBAC) between January 1990 and December 1998, at the RAFH, Riyadh, Saudi Arabia. RAFH is a tertiary care hospital serving employees of the Ministry of Defense, Saudi Arabia, and their dependents. Induction of labor with vaginal Prostaglandin E_2 tablets to ripen unfavorable cervix is carried out when indicated. The trial of labor was allowed when there is no contraindication to vaginal

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Table 1 - The incidence of CS and final method of delivery of all women with previous one CS (RAFH 1990-1998).

Year		90	91	92	93	94	95	96	97	98	Total
Total deliveries		6263	4580	6848	6925	7002	7246	7711	7590	6895	61060
Total CS		594	421	640	772	805	916	956	1015	907	7026
%		9.5	9	9	11	11.5	13	12	13	13	11.5
Total Prev CS x 1		201	140	312	272	254	316	285	389	409	2578
Cesarean section		64	53	85	86	98	102	141	193	146	968
Vaginal delivery		137	87	227	186	156	214	144	196	263	1610
%		68	62	73	68	61	68	50.5	50	64	62.5
Final method of delivery	**SVD**	122	74	211	173	141	198	128	169	228	1444
	Forceps	1	11	13	4	3	7	0	1	2	42
	Ventouse	13	2	0	6	11	8	12	23	27	102
	Breech	1	0	3	3	1	1	4	3	6	22

CS: Cesarean section
SVD: Spontaneous vaginal delivery

delivery. The contraindications included - prior classical or low vertical incision of the uterus, previous hysterotomy or myomectomy, multiple gestation or breech presentation in the present pregnancy. All patients with more than one previous CS are delivered by elective CS. No specific consent for a trial of labor is required from patients. A notation in the antepartum progress record was deemed adequate to document that management alternatives had been discussed during the course of the pregnancy. Mothers who are allowed trial of labor, undergo external monitoring of uterine activity and continuous monitoring of fetal heart rate either externally with transducers or internally using fetal scalp electrode. Intrauterine pressure transducers are not used. When necessary, oxytocic augmentation of labor is administered at a rate according to patient response in frequency and amplitude of contractions. The integrity of the lower uterine segment scar is not verified by postpartum exploration. Epidural analgesia is available on request whenever indicated as it is to other parturient patients.

Results. Figure 1 shows analysis of the obstetric population. During the period of the study, 61060 mothers were delivered, 20% of which were primips. There were 7026 (11.5%) CS deliveries, 1682 (3%) ventouse and 488 (1%) forceps carried out. Two thousand five hundred and seventy eight patients had a diagnosis of previous one CS and they form the basis of this report. They represented 3.5% of the total number of deliveries. Of the 2196 cases of breech presentation seen in labor, 833 (38%) cases

Table 2 - Indications for repeat CS in women with previous one CS.

Riyadh Armed Forces Hosptial 1990-1998	
Indication	**Percentage**
Fetal distress	23
Dystocia	28
Antepartum hemorrhage	7
Elective	51

Table 3 - Obstetric complications in all women with previous one CS.

Riyadh Armed Forces Hosptial 1990-1998	
Complication	**Percentage**
Ruptured uterus	15
Maternal deaths	0
Hysterectomy	0

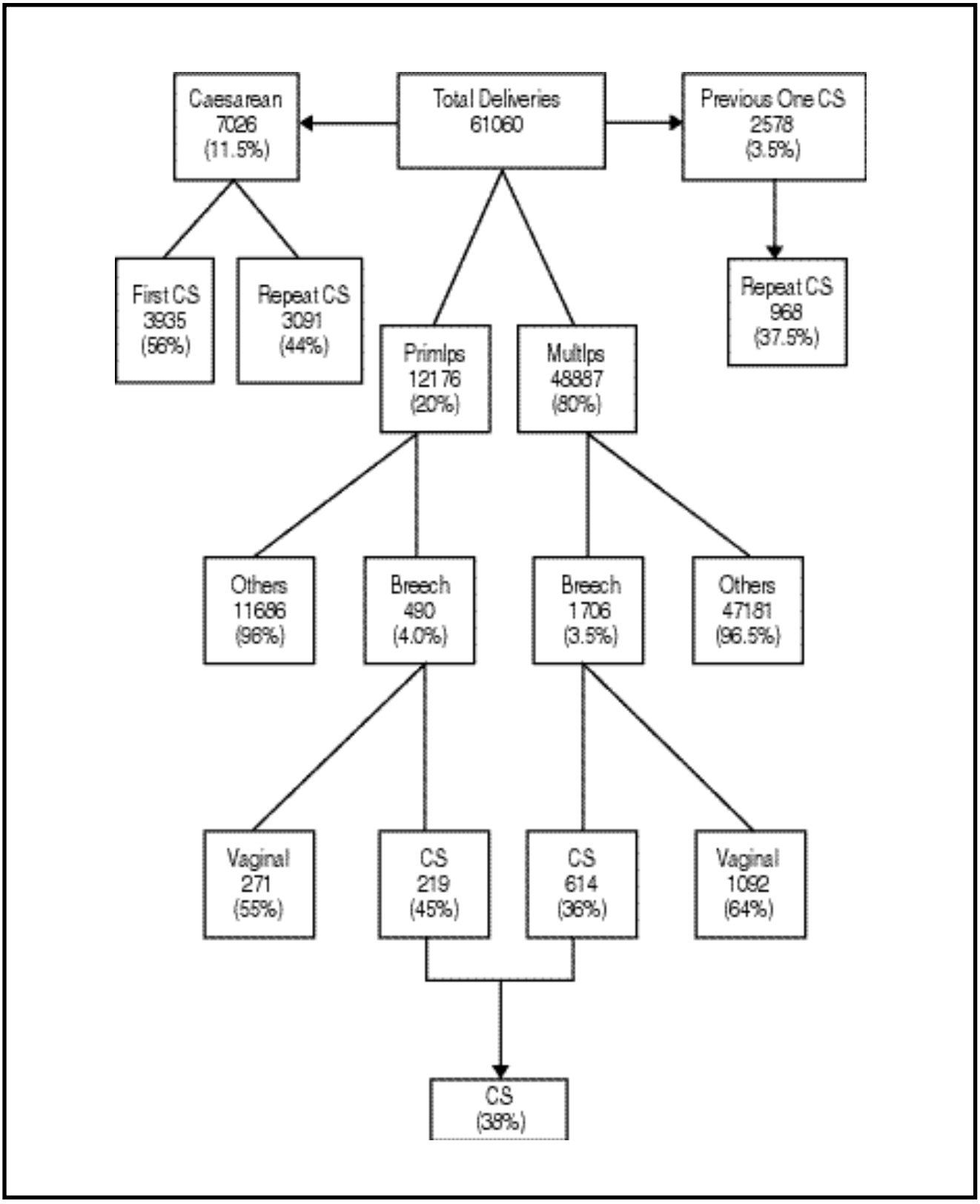

Figure 1 - Analysis of obstetric population (Riyadh Armed Forces Hospital 1990-1998).

ended up in CS. Two hundred and nineteen (45%) mothers of the primip breech were delivered by CS as compared to 614 (36%) multiparas who ended in CS. Fifty six percent of the total CS performed were first CS and 44% were repeat CS.

Table 1 shows the incidence of CS and final method of delivery of all women with previous one CS between 1990 and 1998. Of the 2578 patients with one previous CS, the final method of delivery was repeat CS in 968 (37.5%) cases. Of the 1610 (62.5%) mothers who achieved vaginal delivery, 102 (6%) were ventouse, 42 (3%) were forceps and 22 (1%) cases had an assisted breech delivery. Table 2 shows the indications for repeat CS. CS was performed as an elective procedure in half (51%) of the cases. Fifteen mothers sustained ruptured uterus in labor (Table 3). The incidence of uterine rupture with previous one CS was 1:172. Repair of uterus was carried out in all cases. None required hysterectomy and there were no fetal or maternal deaths.

Discussion. The old dictum 'once a cesarean always a cesarean' has been gradually replaced by a recommendation for vaginal birth after cesarean section.[1] "Elective repeat" has become the most common indication today for a CS.[1,2] Repeat CS is the most common indication overall for CS in the United States, while failure to progress is the most common indication in nulliparous women.[4] Obviously, a reduction in the primary CS rate would have a significant effect on the need for subsequent operative delivery, and therefore could have a large impact on the overall CS rate.

Although the safety of CS has been accompanied by an increase in its incidence, the abdominal route is not entirely devoid of complications as maternal morbidity and mortality, anesthetic risks, blood loss and pulmonary embolism.[5] If there was no contraindication to labor and vaginal delivery, there is no contraindication to cervical ripening, induction of labor or augmentation of labor in the presence of a uterine scar. Oxytocin and epidural analgesia can be used safely in patients that previously underwent CS and are allowed a trial of labor, provided that the mother and fetus are under strict surveillance.[6,7] In properly selected patients, a trial of labor after previous CS constitutes the best and safest form of obstetric management and can achieve up to 84.5% successful vaginal delivery.[8,9] Vaginal PGE_2 for induction of labor in patients with previous CS is safe and effective with 68% achieving vaginal delivery even with unfavorable cervix at the time of Prostaglandin treatment.[10]

Patients with twin gestation and those with breech presentation and previous CS birth who undergoes trial of labor can achieve a vaginal delivery of 72% and 79%.[11,12] These patients are sectioned electively in this institution. Despite this strict policy - 22 cases had successful assisted breech delivery with no complications. If CS rate to stay steady or to drop, the management of this group of patients has to be considered.

Flamm et al[13] successfully performed external cephalic version (ECV) after 36 weeks gestation without major complications in 82% of 56 women who had one or two previous CS. Of these 65% delivered vaginally. Larger studies will be needed to establish the safety of this promising new approach.

The use of the W.H.O. partograph in the management of breech labor reduces prolonged labor and (among multigravida) cesarean section, and improves fetal outcome.[14]

Physicians in the United States, facing increased medical-legal pressures performed fewer vaginal breech deliveries and fewer mid pelvic forceps deliveries.

The main reason for rising CS is lower threshold to perform CS across the board. We are trying to practice safe obstetrics: the safety of the mother and her baby are of utmost importance. Our aim should be always safe motherhood. Medico-legal implications dictates no more difficult vaginal deliveries either breech or instrumental. The nonreassuring fetal status is diagnosed more frequently because of wide variations in the interpretation of continuous electronic fetal monitoring. Continuous fetal oximetry and fetal PH and fetal ECG have been tried together or singly. The perfect method of fetal monitoring in labor has yet to be invented. Dystocia as an indication for CS is being diagnosed more frequently.

Trial of scar can be safely attempted in patients, with clinically adequate pelvis, with one or two previous low transverse cesarean deliveries, with no other uterine scar or previous uterine rupture with the availability of adequate monitoring of mother and foetus and the availability of anaesthesia and personnel for emergency cesarean delivery.[15,16] It should not be attempted in patients with prior classical or T-shaped incision or transfundal uterine surgery, contracted pelvis, medical or obstetric complications that preclude vaginal delivery, and inability to perform immediate emergency cesarean section either due to the unavailability of surgeon, anesthetist or sufficient staff or facility.

The incidence of urine rupture in scarred uterus with one previous CS is 1:172 as compared to 1:7849 intact uteri.[17] Fifteen mothers sustained rupture of the scarred uterus with no fetal or maternal deaths.

In conclusion, reducing the overall cesarean section rate is possible through reducing the primary cesarean birth and allowing more patients with prior one cesarean scar and twins or breech presentation to have trial of labor and involving the seniors more in

the diagnosis and management of cases of dystocia and the use of Oxytocin when indicated.

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