

Cesarean section in the primigravid

Ratib A. Mesleh, FRCOG, Fatma Asiri, MBBS, Madawi F. Al-Naim, FRCOG.

ABSTRACT

Objectives: To review all cases of cesarean section in the primigravid mother delivered at the Riyadh Armed Forces Hospital between January 1996 and December 1997. To determine its incidence, describe the clinical indications, outcome and highlight areas of improvement in an attempt to reduce the rate of cesarean section.

Methods: Retrospective case record analysis.

Results: During the study period there were 15301 deliveries. The overall cesarean section rate for 1996 was 12% and for 1997 was 13%. The rate of cesarean section in the primigravid was 12%. The rate of cesarean section in primiparas breech was 41%. Cesarean section in the unbooked primiparas was 15% as compared to 12% in the booked ones. Fetal distress with or without failure of progress was the main indication for cesarean section in singleton cephalic presentations. In breech presentations, cesarean section was carried out as an elective procedure in 45% and fetal distress was the indication in 21% of

cases. Fetal distress was the main indication in twins.

Conclusion: The rate of cesarean section in the primiparas was similar to the rate of cesarean section in the obstetric population. The rate of cesarean section in the primiparas breech was slightly higher than cesarean section in the multiparas breech. Fetal distress was the leading indication for cesarean section in twins and those with cephalic presentation. The rate of cesarean section can be safely reduced by reviewing and auditing the primary indication for cesarean section, the Consultants doing frequent rounds on delivery suites and being involved directly in cesarean section decision, careful interpretation of fetal monitoring and allowing more patients with breech presentation to have vaginal delivery under close observation.

Keywords: Cesarean section, primigravid.

Saudi Medical Journal 2000; Vol. 21 (10): 957-959

A steady rise in cesarean section (CS) rate has been noted in many obstetric units all over the world. The reasons behind this rise vary between fear of litigation particularly in the United States (US), lack of midwifery support and a reluctance to implement the active management of labor.¹ Epidural analgesia may be associated with a doubling of the rate of emergency CS in nulliparous women.² The rate of CS has increased in the US from 1 in 20 births in 1970 to nearly 1 in 4 today.³ Cesarean section is now the most frequently performed operation in many obstetric units all over the world. Repeat CS is the most frequent indication for CS, it accounts for 39% of cesarean births in the US.² Reducing the overall

CS rate can only be achieved through reducing the first CS rate whether in primiparas or multiparas. The Armed Forces Hospital, Riyadh (RAFH) is no exception. The total number of annual deliveries have increased from 1377 in 1979 to 7860 in 1999. The CS rate has increased steadily from 7% in 1979 to 13% in 1999. In the meantime, forceps deliveries showed a steady drop from 12% in 1979 to 0.5% in 1999, while ventouse deliveries after increasing from 0.1% in 1979 to 4% in 1997 remained steady thereafter at 4%.⁴ The aim of this study was to analyze all cases of primigravid patients who were delivered by CS at RAFH between January 1996 and December 1997.

From the Department of Obstetrics & Gynecology, Armed Forces Hospital, Riyadh, Kingdom of Saudi Arabia.

Received 17th April 2000. Accepted for publication in final form 14th June 2000.

Address correspondence and reprint request to: Dr. R. A. Mesleh, C124 Armed Forces Hospital, Riyadh 11159, PO Box 7897, Riyadh, Kingdom of Saudi Arabia. Tel. +966 (1) 477714 ext 5461. Fax. +966 (1) 4760853.

Methods. The Armed Forces Hospital, Riyadh, Saudi Arabia (RAFH) is a tertiary care hospital which cares for a steady population of the Ministry of Defense, military personnel or civilians and their dependents. Although the number of deliveries have increased by nearly 5 fold, the demographic makeup of women being delivered has not changed. All deliveries are hospital based, attended by midwives and information documented by the attending staff. Therefore the data includes all hospital deliveries. This was a retrospective case record analysis of all primigravid patients who had CS at RAFH between January 1996 and December 1997. The data included, mother's age, height, weight at booking, antenatal care, gestational age, findings at cardiotocography, and whether fetal blood sampling was carried out, duration of labor, length of the 2nd stage of labor, indication for CS, birthweight, Apgar score and fetal and maternal outcome. The aim of this study was to determine the rate of CS in primigravid patients who were delivered at RAFH, describe the clinical indications and outcome and highlight areas of improvement in an attempt to reduce the rate of CS.

Results. During the study period there were 15301 mothers delivered. The overall CS rate for 1996 was 12% and for 1997 was 13%. There were 2937 (19%) primiparas, 164 sets of twins (1:93), 7 sets of triplets (1:2186) and 538 (3.5%) breech presentations. There were 119 primiparas breech and 419 multiparas breech. Assisted breech delivery for 1996 was 3% and for 1997 was 2%. The rate of CS in primiparas breech was 41% (49/119) as compared to 39.5% (165/419) in multiparas breech (statistically not significant). During the study period forceps delivery remained static at 1% while ventouse deliveries increased from 2.5% in 1996 to 4% in 1997. Figure 1 shows the total number of mothers delivered and their method of delivery. Cesarean section in the unbooked primiparas was 15% as compared to 12% in the booked ones (statistically not significant). The CS rate in multiparas was 13% as compared to 12% in the primiparas (statistically not significant). A total of 356 primigravidae had CS. This included 18 (5%) sets of twins and 62 (18%) breech presentations. Table 1 shows the indications for CS in relation to presentation. Fetal distress with or without failure of progress in labor was the main indication for CS with singleton cephalic presentation. Fetal blood sampling was checked in only 5 (3%) cases out of 177 cases with fetal distress. The 2nd most common indication was failure to progress 55/294. In 18 (6.5%) cases, the attempt to deliver the baby by ventouse failed. In cases with breech presentation, CS was carried out as an elective procedure in 28 (45%) and fetal distress was the indication in 13 (21%) out of 62 cases. In twins, fetal

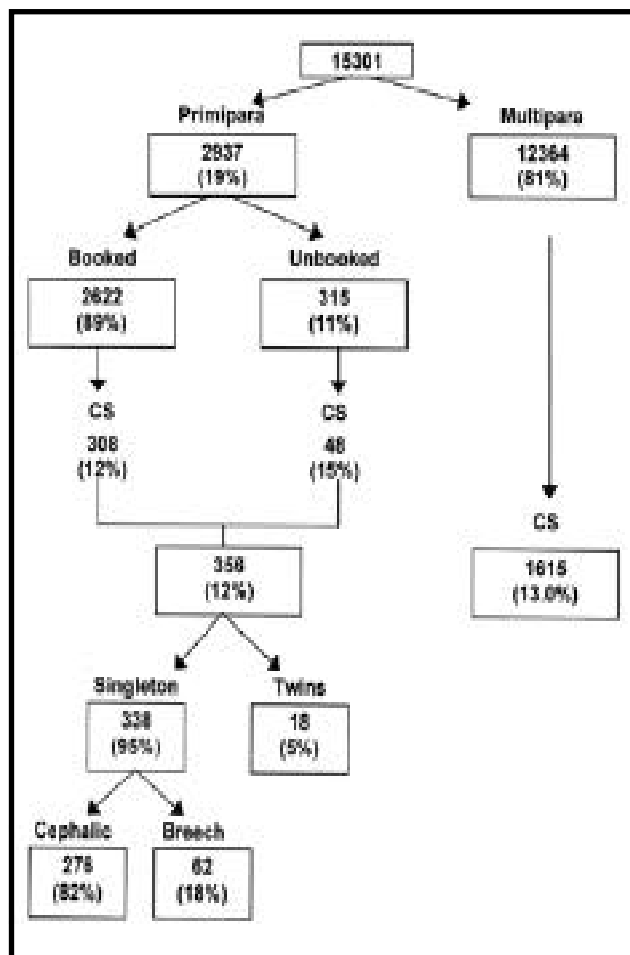


Figure 1 - Total mothers delivered and their method of delivery (Riyadh Armed Forces Hospital, 1996 + 1997). CS - Cesarean section.

Table 1 - Indication for cesarean section in relation to presentation in the Primigravid (Riyadh Armed Forces Hospital, 1996 + 1997).

	Cepahlic	Breech	Twins
1. Elective	--	45.0%	--
2. Fetal distress	62.0%	21.0%	39.0%
3. Failure to progress	19.0%	14.5%	11.0%
4. Pre eclamptic toxemia	7.0%	--	11.0%
5. Cardiac	0.5%	--	6.0%
6. Antepartum hemorrhage	2.0%	--	6.0%
7. Unstable lie	1.0%	--	--
8. Failed ventouse	6.5%	--	--
9. Others	2.5%	19.0%	28.0%

distress was the main indication in 39% of twins. There were 3 perinatal deaths. One stillbirth was anencephalic and CS has to be carried out for failed induction of labor, and another stillbirth was a 2nd twin. The neonatal death was due to fetal teratoma. The gestational age was below 32 weeks in 5% of cases (18/356), between 32 and 38 weeks in 18% (64/356) cases and over 38 weeks in 77% (274/356) of cases. The maternal age was between 20-24 years in 51% (182/356). One was below 15 and one was over 40 years of age. The maternal height was between 151-160 cm in 55% (197/356) of cases and in 16% (56/356) the height was less than 150 cm. The apgar score at 5 minutes was 7 or more in 97% of cases who had CS for fetal distress and none had apgar score less than 3 at 5 minutes. Labor was induced in 127 patients and 229 CS followed spontaneous labor. The indications for induction of labor in these 127 patients were: prelabor rupture of membranes for over 24 hours in 50 (39%) cases, 27 (21%) cases were postdates, 15 (12%) had elevated blood pressure and 13 (10%) had non-reassuring cardiotocography.

Discussion. It is interesting to note that the CS rate has doubled since 1979, while forceps deliveries showed a steady decline to 0.5% and ventouse deliveries increased steadily to 4%. The rate of epidural remained at around 7%.⁴ There are several reasons behind this steady rise in first CS in recent years. With the noticed decreased in family size in western countries, and the global trend for safe motherhood, no more difficult deliveries, either breech or instrumental have been attempted. The obstetricians and parents alike are aiming for what is in their belief a safe delivery for mother and baby. The medico-legal pressures forced the obstetrician away from the risk of being questioned 20 years later to the possibility of negligence in delivering this baby who failed to become a university professor at the age of 20. Non reassuring fetal status is diagnosed more frequently because of wide variations in the interpretation of continuous electronic fetal monitoring. Fetal scalp PH was performed in only 5 cases because either the machine is not working or the doctors on call are reluctant to do it. Fetal oximetry and continuous fetal PH is not available. Failure to progress in labor as an indication for CS is diagnosed more frequently.

Can cesarean section deliveries be reduced safely and effectively? The indications for primary cesarean birth should be reviewed and audited. Consultants are to be involved more in the management of patients in labor, carrying out frequent rounds on the delivery suite and the decision to perform CS has not to be taken so lightly. Careful monitoring in labor of both mother and fetus with careful interpretation of the results. The perfect method of fetal monitoring in labor has yet to be

invented. Seniors need to be involved more frequently in its diagnosis and management of failure of progress and the use of Oxytocin when indicated. For the fear of litigation, routine vaginal breech delivery is carried out less and less and external cephalic version (ECV) should be offered by experienced personnel whenever possible. Every effort should be to focus on the areas of fetal distress, and cephalopelvic disproportion. The deformity of the pelvis caused by osteomalacia and rickets has already been alluded to. The fetus remains the best pelvimeter when gross pelvic contractive is ruled out.⁵ Since the introduction of an active approach to the management of labor by O'Driscoll and colleagues, it has been suggested that the occurrence of prolonged labor in nulliparous women could be virtually eliminated by the adherence to the principles of active management and the incidence of CS could be dramatically reduced.⁶ The primary cesarean section rate of 12% was much lower than 50.5% reported from Glasgow,⁷ and double that of 6% reported from King Khalid University Hospital, Riyadh (KKUH).⁸ The incidence of CS was higher with unbooked cases as compared to the booked one. (15% vs. 12%). Antenatal care provides the attending obstetrician with more information regarding progress during pregnancy, ultrasound scanning for morphology and growth and even doppler. The availability of antenatal tocography and x-ray pelvimetry, the value of which is undisputable. External cephalic version in booked cases is usually attempted at around 36 weeks of gestation. This may help in reducing the incidence of breech presentation at term and therefore reduced the number of CS carried out as an elective procedure for primiparas breech.

References

1. Leitch CR, Walker JJ. The rise in caesarean section rate: the same indication but a lower threshold. *Br J Obstet Gynaecol* 1998; 105: 621-626.
2. Wilcock F, Kingdom J. Emergency caesarean section in term nulliparas. *J Obstet Gynaecol* 1998; 18: 351-352.
3. Porreco RP, Thorp JA. The cesarean birth epidemic: Trends, causes and solutions. *Am J Obstet Gynecol* 1996; 175: 369-374.
4. Mesleh R, Algwiser A, Kurdi A. Riyadh Armed Forces Hospital, Department of Obstetrics and Gynaecology, Clinical report for the year 1999. Riyadh (KSA): MSD Printing Press; 2000.
5. Gee H. Trials of labour. *Contemp Rev Obstet Gynaecol* 1994; 6: 31-35.
6. Olah KSJ, Neilson JP. Failure to Progress in the management of Labour. *Br J Obstet Gynaecol* 1994; 101: 1-3.
7. Wilkinson C, McIlwaine G, Boulton-Jones C, Cole S. Is a rising caesarean section rate inevitable? *Br J Obstet Gynaecol* 1998; 105: 45-52.
8. Khashoggi T, Soltan MH, Al-Nuaim L, Addar M, Chowdhury N, Adelusi B. Primary cesarean section in King Khalid University Hospital: Indications and obstetric outcome. *Annals of Saudi Medicine* 1995; 15: 585-588.