CESAREAN SECTIONS AT PRINCE ALI BEN AL-HUSSEIN MILITARY HOSPITAL-JORDAN: RATE AND INDICATIONS

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ABSTRACT

Objective: To determine the rates and indications of cesarean sections at Prince Ali Ben Al-Hussein Military Hospital, Karak - Jordan.

Methods: This retrospective study was carried out between 1st January 2003 and 30th December 2003. The medical records of all patients who underwent abdominal delivery were reviewed and analyzed.

Results: During the study period, 251 cesarean sections were performed. The rate of cesarean sections was 13.8%.
The commonest indications of all cesarean sections (primary and repeated) were failure of progress in labor (21.5%), fetal distress (16.3%) and history of two or more cesarean sections (12.3%). There were 104 (41.4%) primary and 147 (58.6%) repeated cesarean sections. Of the primary cesarean sections group, the commonest indication was failure of progress in labor (26.9%) and of the repeated cesarean sections group the commonest indication was two or more cesarean sections (21.1%).

Conclusion: This study showed a lower cesarean section rate in our hospital as compared with the international rates. The ideal cesarean section rate remains uncertain, but it is clearly rising all over the world. If we have to reduce cesarean delivery rate safely, we should concentrate on reducing the number of primary cesarean deliveries.

Key words: Indications, Cesarean section, Rate, Fetal distress.

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Introduction

Cesarean section is a major surgical procedure with possible serious consequences and should be performed in the presence of specific and clearly defined indications.

Rates of cesarean section are rising, and mother's request for elective cesarean section in an uncomplicated pregnancy is not uncommon.[1] Performing a cesarean section when it is not clinically indicated has traditionally been considered inappropriate, but views may be changing.[1]

Cesarean section has many intra- and postoperative maternal complications. The availability of elective operation under regional block with antibiotic cover and thromboprophylaxis decreases the rate of these complications.[1]

The advantages of a safe vaginal delivery over a cesarean delivery are clear: A vaginal delivery is associated with lower maternal and neonatal morbidity, with a lower cost.[2] These advantages apply only to safe vaginal deliveries. Reducing the rate of cesarean delivery may lead to higher costs and more complications for mothers and their babies.[2] Because the two strategies proposed to reduce the cesarean delivery rate, increasing the number of vaginal deliveries among women who have had cesarean deliveries and increasing the

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number of operative vaginal deliveries, are associated with increase the risk of uterine ruptures and neonatal trauma.[3]

Clearly, the way to decrease the overall risk entailed by a trial of labor (including the risk of major complications) is by selecting women who have a high probability (more than 80%) of delivering their babies vaginally. In a study by Michael J *et al*,[3] women who have had a previous low transverse cesarean section were more likely to have a successful trial of labor if; they were less than 35 years of age, the child birth weight was less than 4 kg, and if they delivered in tertiary care hospital. However, there is no confirmed method of predicting the like hood that a trial of labor will lead to vaginal delivery for a patient with a previous low transverse cesarean section.[3]

Methods

Our retrospective study included all pregnant women booked in the antenatal clinic and unbooked patients admitted in early labor for which cesarean section was indicated later. It also included all those cases coming in emergency at any time for which cesarean section was indicated.

After a detailed history, thorough physical and obstetrical examination was performed, the patient and her relatives were counseled and informed consent was taken from them. The medical records of all patients who underwent abdominal delivery at Price Ali Ben Al-Hussein Hospital between 1st January and 30th December 2003 were analyzed.

The age, parity, and the indication of the cesarean sections were recorded. The decision to undertake a cesarean section was in every case made by the obstetrician. The operation was performed by specialists or by residents under supervision of specialists. All operations performed during the study period were lower uterine segment cesarean sections. The duration of hospital stay was a minimum of 3 days. Patients with one lower segment cesarean section were allowed trial of scar. Oxytocin is used to induce or augment labor or both. Cephalopelvic disproportion was diagnosed when there was no further dilatation after more than two hours of regular uterine contractions (contractions lasting for more than 40 seconds and three or more contractions in 10 minutes). Intrauterine pressure was not measured because intrauterine catheters are not available at the unit. Failure of progress in labor was diagnosed when the rate of cervical dilatation was less than 0.5 cm/hour in nulliparous patients and less than 1 cm/hour in porous patients in the presence of efficient uterine contractions. If there are inefficient uterine contractions in the second stage of labor, this is corrected by oxytocin infusion and cesarean section is done when there is an arrest of descent for more than one hour for nulliparous patients and for more than 30 minutes in multiparous patients. Unfavorable cervices were ripened by prostaglandin E2 vaginal tablets. Fetal distress is diagnosed by electronic fetal monitoring which has a high false positive rate for detection of fetal hypoxia and acidosis. Further investigation by fetal blood pH and acid-base measurements is usually indicated to avoid unnecessary intervention. Unfortunately, our unit does not have a fetal blood pH-sampling machine.

We applied selective criteria for vaginal breech delivery of fetuses in breech presentation .Vaginal delivery was allowed in cases of frank and complete breech if the estimated weight was between 1.5 and
3.7 kg and the fetal head was flexed as shown by ultrasound scan and if the pelvis was clinically adequate. In twin pregnancy, after the birth of the first twin, external cephalic or internal podalic version was attempted if the second twin was not vertex. If the version failed, then cesarean section was done.

Patients who had cesarean sections were categorized according to age and parity. (Table I)

Table I. Association between maternal age, parity, and number of cesarean sections

Age (years)	Number	%
Below 20	33	13.2
21-25	58	23.1
26-30	97	38.6
Above 30	63	25.1
Parity		
Primipara	39	15.5
1-3	107	42.6
4-6	79	31.5
>7	26	10.4

This study was carried out to determine the rate and indications for cesarean deliveries at Prince Ali Ben Al-Hussein Hospital, Karak-Jordan.

Results

In our study, a total of 1819 deliveries in the year 2003 were performed. During this period, 251 cesarean sections were done. The cesarean section rate was 13.8%. Out of these 251 patients, 212(85.5%) were multigravida (parity range: 1-12). The remaining (39) was primigravida. Most abdominal deliveries were performed on women in the age group 26-30 years, and those with parity (1-3) as shown in Table I.

There were 104 (41.4%) primary and 147 (58.6%) repeat cesarean sections. Table II, III respectively.

Table II. Indications for primary cesarean sections

Indication	Number	%
Failure of progress	28	26.9
Fetal distress	21	20.2
Antepartum hemorrhage	8	7.7
Cephalopelvic disproportion	12	11.5
Breech presentation	9	8.7
Bad obstetric history	5	4.8
Failed induction	8	7.7
Abnormal lie	4	3.8
Multiple pregnancy	3	2.9
Cord prolapse	1	0.96
Preeclampsia/Eclampsia	5	4.8
Total	104	100

Table III. Indications for repeat cesarean sections

Indication	Number	%
Two or > Cesarean sections	31	21.1
Failure of progress	26	17.7
Fetal distress	20	13.6
Cephalopelvic disproportion	15	10.2
Antepartum hemorrhage	10	6.8
Failed induction	12	8.2
Bad obstetric history	4	2.7
Breech presentation	11	7.5
Abnormal lie	6	4.1
Cord prolapse	5	3.4
Preeclampsia/Eclampsia	7	4.7
Total	147	100

The indications for primary cesarean sections are shown in (Table II), repeated cesarean sections in (Table III) and overall indications in (Table IV). The commonest indication of all cesarean sections (primary and repeated) was failure of progress in labor 21.5% followed by fetal distress 16.3%. (Table IV)

Table IV. Overall indications for cesarean sections

Indication	Number	%
Failure of progress	54	21.5
Fetal distress	41	16.3
Two or > cesarean sections	31	12.3
Cephalopelvic disproportion	27	10.7
Failed induction	20	8.0
Breech presentation	20	8.0
Antepartum haemorrhage	18	7.2
Preeclampsia/eclampsia	12	4.8
Abnormal lie	10	4.0
Bad obstetric history	9	3.6
Multiple pregnancy	8	3.2
Cord prolapse	1	1.0
Total	251	100

In our study history of two or more cesarean sections was the commonest indication of the repeated cesarean sections 21.1% followed by failure of progress in labor 17.7%. Table III. Of the primary cesarean sections the commonest indication was failure of progress in labor 26.9% followed by fetal distress 20.2%. Table II.

Discussion

The indications for cesarean sections are usually maternal, fetal, physician related or a mixture of the three. The ideal cesarean section rate remains uncertain and generates much depute.[4] The cesarean section rate has risen dramatically in the United Kingdom and North America over the past 20 years.[5] In 1995, the Department of Health and Human Services in the USA had set a goal to reduce the cesarean section rate from 21% to 15%.[5] An audited of maternity services in England and Wales in 1997 published by the audit commission, estimated that each 1% increase in the cesarean section rate costs the National Health Services 5 million pounds.[5] This study showed a lower cesarean section rate in our hospital as compared with the international rates. Countries such as United States, United Kingdom, and many European countries experience higher cesarean section rates, ranging from 15%-30%.[6,7] In Saudi Arabia, King Abdul Aziz Hospital, the cesarean section rate was 13% in the period from 1990 to 1997.[8]

In Taiwan, the overall cesarean section rate was 31.2% in the year 2000, which is higher than that in other developed countries with universal health coverage.[9]

Italy has the highest percentage of birth by cesarean section in Europe, which is 22.4%, and the rate has doubled since 1980.[10]

In our study the cesarean section rate was 13.8% with an increase by 1.5% from the year 2002,[11] but it is still lower than the WHO standard figure of 15%[12] and it is close to the rate of Royal Medical Services Hospitals in Jordan (13.03%) in 2002.[11]

In this study failure of progress in labor was found to be the most common indication of cesarean sections contributing to 21.5% of the total, followed by fetal distress, which was 16.3%.

In a study by Leith and Walkers[13] it was found that large differences in cesarean section rates were compatible with absence of change in the most common indication, i.e, failure of progress and fetal distress. Those indications are variable and seem to depend on clinician's threshold for decision. History of two or more cesarean sections was found to be the most common indication of repeat cesarean sections in our study contributing to 21.1%.

If the patient has already had one cesarean section, most obstetricians are only too willing to perform an abdominal delivery at the first hint of a problem, an attitude that should be discouraged. Vaginal delivery after cesarean delivery is relatively safe. However, all medical procedures are associated with risks.

As the number of vaginal deliveries after cesarean delivery increases, so will the number of reported complications. These complications must be weighed

against the risks of cesarean delivery. If we are to reduce the cesarean delivery rate safely, we should concentrate on reducing the number of primary cesarean deliveries.

There are many causes for the rise in the cesarean section rate, not only in our hospital but also all over the world. Reasons for this rise include a lower tolerance for taking risks; fear of malpractice litigation; increased use of electronic fetal monitoring which has a high false positive rate for detection of fetal hypoxia and acidosis;[14] and convince of physicians and mothers.

Electronic monitoring of the fetal heart is commonly performed, in part to detect hypoxia during delivery that may result in brain injury. However, the false positive rate is extremely high.[14] Since cesarean section is often performed when such abnormalities are noted and if these indications were widely used, many cesarean sections would be performed without benefit and with harmfully potential.[14]

For women with one previous cesarean delivery, the risk of uterine rupture is higher among those whose labor is induced compared to those who come in spontaneous labor.[15]

In some circumstances it may be quicker to do cesarean section than a difficult vaginal delivery. A couples expectation of a perfect baby as well as a women's experience, undoubtedly also plays a role in the decision to perform a cesarean section.

Conclusion

This study showed a lower cesarean section rate in our hospital as compared with the international rates. The ideal cesarean section rate remains uncertain, but it is clearly rising all over the world. If we have to reduce cesarean delivery rate safely, we should concentrate on reducing the number of primary cesarean deliveries.

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