Original Article

VAGINAL CHILD BIRTH AND CESAREAN FREQUENCIES IN IMAM KHOMEINI HOSPITAL IN SEVEN YEARS INTERVAL (2000, 2006)

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ABSTRACT

Objective: To study the cesarean rate and its indication after seven years interval in Imam Hospital in Ahwaz, the capital of Khuzestan province, Iran and compare it with national and international acceptable rates.

Methodology: The study covers six month duration in years 2000 and 2006. Data was obtained from 3096 deliveries from medical records during the past seven years 2002-2006.

Results: In a period of six month of years 2000 and 2006, 1107 and 1989 child births occurred respectively. The rate of cesarean section in both years was about 34%. In 2000 the main indication for cesarean section was previous cesarean section (60%) while in 2006 it was cephalous pelvic disproportion (31%). Elective cesarean section rate in 2000 was 34% while in 2006 it decreased to 7%. Most cesareans were done in an age group of 20 -30 years.

Conclusion: The incidence of cesarean section in both studied durations is higher as per WHO standards of 15%. However the elective cesarean has decreased during seven years, but the whole rate remains constant.

KEY WORDS: Child birth, Cesarean, Delivery.

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INTRODUCTION

Mothers and children have long been considered as vulnerable members of the population. Their health is an important criterion for the development of a country. The health of mothers and children are not only influenced by biological inheritance and individual status, but also by the clinical practices. Political, socio-economic and cultural factors have an important role in their life.[1] Attention to women's health has more commonly been focused on the reproductive process and child bearing where all mentioned factors may play a part. Birth by cesarean section has been performed since ancient Greek and Persian era. The Cesar (the Rome Empire) and Rostam the

(heroes of ancient Iran) were born by uterine incision.[2,3] During the first half of the 16th century, cesarean delivery was performed only if the mother was dead or dying,[4] but with improvement of safety techniques in surgery and anesthesia, blood transfusion and also antibiotic therapy, the cesarean rate was increased.[4,5] Although the benefits of natural birth in comparison to cesarean section without indication have long been recognized, but over last two decades vaginal birth has experienced considerable decline. Hence, cesarean delivery rates increased in the United States from 4.5% of births in 1965 to 24.7% in 1988.[7]

In 2002, more than one-fourth of all births (26.1%) in the United States were cesarean deliveries.[8] According to reports published by Iran Ministry of Health and Medical Sciences in 2000 the cesarean rate has been increasing in the last decade.[9] Other studies also show that the cesarean section rate in our country is high. A national study in the nineteen province of Iran in 1994 showed that the cesarean rate was 21% in governmental hospitals and 42% for non - governmental hospitals.[9] Similar data in year 2000 showed an increase in cesarean rate from 27% to 58% for governmental and non-governmental hospitals respectively.[10] Studies in north of Iran show that the cesarean section delivery rates in private, educational and governmental hospital were 62.3, 47.1 and 49.7% respectively.[11] In Khuzestan province the total rate was 20 to 22%.[10]

Cesarean is a procedure of last resort for reducing maternal morbidity and mortality, but reasons for the dramatic increase in the cesarean delivery rate are complex. Cesarean delivery remains a powerful tool within obstetrical practice to improve neonatal outcomes in certain clinical circumstances; however most of cesarean deliveries are currently performed to benefit the fetus, not the mother.[12,13]

Delivery by cesarean section is a potentially life saving procedure for mothers and children in pregnancies complicated by fetal malpresentation, excessive fetal overgrowth, multiple gestation, fetal structural anomalies, cephalous pelvic disproportion, failure of labor progression, specific maternal infections including HIV and active HSV.[4] Studies in some provinces of Iran show that the main causes of cesarean sections were caphalo pelvic disproportion, previous cesareans, fetus distress, and breech presentation respectively.[14-16] Main reasons for cesarean delivery in national studies were previous cesarean, failure of labor progression, breech presentation and fetus distress.[10] Presence of medical and obstetric complications among women delivered by cesarean is an important factor which should be considered in evaluation of mother and child strategies. A four-fold increased mortality rate associated with cesarean delivery was detected in a population-based, case-control study from North Carolina for a 7-year period from 1992 to 1998.[17] A two-fold increase in maternal mortality with cesarean delivery was also reported in the United Kingdom from the late 1990s.[18] The most frequent complications related to cesarean delivery are infection, hemorrhage and blood loss greater than one litre (7.3% to 9.2%), uterine or uterocervical lacerations (4.8% – 10.1%) injury to other organs and intra operative surgical complications (12% to 15%).[4,19,20] Trauma to the infant is another adverse outcome of cesarean delivery [21] which is also associated with a 1.8-fold increased risk of rehospitalization.[22] Cesarean delivery clearly places a woman at greater risk of emergent peripartum hysterectomy when compared with vaginal delivery.[23] A 2.4-fold increased risk of abruption in a subsequent pregnancy following cesarean delivery was noted in a Finnish birth registry from 1987 to1993.[24]

METHODOLOGY

In this comparative descriptive study we investigated the vaginal child birth and cesarean rate and its causes in seven years interval (2000, 2006) in the maternity ward of Imam Khomeini Hospital, Ahwaz the capital city of Khuzestan province. Imam Hospital is the largest educational hospital in the province. Data was obtained about 3096 birth deliveries from medical records in years 2000 and 2006 after a seven- year interval. In a period of six month

in year 2000 and 2006, 1107 and 1989 child birth took place respectively. The data collected included age at the time of delivery, type of child birth, parity and the cesarean indications. We looked at the cesarean rate after seven years interval and also compared it with the national and international acceptable rates.

RESULTS

Data analyses shows that in year 2000 in Imam Hospital the cesarean section rate was 34% and vaginal birth was 66%, but in year, 2006 it was 33% and 67% respectively. The most common reasons for cesarean section in 2000 were previous cesareans (31%) election cesarean (20%), meconium (11%) and breech presentation (8%) but in 2006 it was failure of labour progression (34%), Cephalo pelvic disproportion (31%) and breech presentation (12%) respectively while in 2006 it was failure of labor progression (34%) and CPD (31%) In year 2000 the main cause of cesarean section was previous cesareans (31%) but it decreased to 7% in the year 2006. The study shows a great disparity between the elective cesarean rate in two years under study, where the rates were 20% and 5% respectively. In both studies almost 60% of cesarean sections occurred in an age range of 20-30 years. The least cesarean section was in the range of 15-20 in two studied years (8% and 6%). In both years the maximum cesarean rate occurred in the first pregnancy (34%).

DISCUSSION

The study shows that the cesarean rate in both durations is high. However there is no decrease in the cesarean rate after seven years in Imam Educational Hospital but the pattern of cesarean section has been changed. In the two last decades one of the most common indications for a cesarean was the prior cesarean with a rate of 35%.[25] This study shows that in year 2000 prior cesarean rate was 31% while in 2006 it decreased to 7%. This may be related to studies which not only confirm the plausibility and safety of vaginal birth after cesarean delivery[25] but avoiding surgical morbidities such as infection, hemorrhage damage to visceral organs iatrogenic prematurity. However some authors believe that vaginal birth after the cesarean may lead to uterine ruptures and hypoxic injuries for their babies,[22] but others argued that women with one previous cesarean delivery with a lower transverse uterine incision were an appropriate candidate for a trial of labor.[26] It seems the surgeons and obstetricians in Imam Educational Hospital during seven years accepted vaginal birth after cesarean with a lower transverse uterine incision as a safe delivery. This study also shows a decreasing trend in the elective cesarean rate from 20% to 7% in seven years interval. As the experienced Obstetricians and Gynaecologists believe that because of the risks of cesarean for both mother and infant elective cesarean delivery at term without specific maternal or fatal indication is not to be encouraged,[4] so this considerable reduction in Imam Hospital shows a widely accepted opinion that an elective cesarean clearly places mothers and infants at greater risks of morbidity or mortality. Despite this considerable decrease in elective and previous cesareans in Imam Hospital, the whole cesarean rate has not decreased. So, this brings it into question. The studies show all parturient undergoing cesarean deliveries are exposed to the potential complications of anesthesia[27] and 82% of anesthesia-related maternal deaths occurred in women undergoing cesarean delivery. The standard of anesthesia must be looked into. Regional anesthesia is much safer in most cases. Moreover two to four fold increased mortality rate is associated with cesarean delivery.[17,18] Infection, blood loss, Uterine or utero cervical lacerations, injury to other organs.[4,19,20] trauma to the infant,[21] about two fold increased risk of rehospitalization,[22] greater risk of emergent hysterectomy[23] and a 2.4-fold increased risk of abruption in a subsequent pregnancy following cesarean delivery[24] are risks and complications related to cesarean deliveries. So presence of these medical and obstetric complications among women deliv-

ered by cesarean is an important factor which might be considered in the evaluation of mother and child strategies. However delivery by cesarean section is a potentially life saving procedure for fetuses in pregnancies complicated by breech presentation, excessive fetal overgrowth, multiple gestation, fetal structural anomalies, cephalous pelvic disproportion, failure of labor progression, specific maternal infections include HIV and active HSV,[4] but some studies in Iran show that elective cesarean still is one of the most common indications for cesarean section.[11] Health education programs should inform families about risk / benefit of election and previous cesareans, specially the purely elective cesarean or "cesarean delivery on demand" which are stressed by authors.[4,13] Any educational program for families must include the potential of long – term risks of recurrent cesarean delivery, including hysterectomy, fetal heath and even maternal death.[13]

Some authors believe that patients should be educated about the true risks and benefits of the procedure and they are obliged to give the families the most accurate information available.[28] Studies show an association between labor pain and cesarean delivery, so woman with severe pain are more likely to require a cesarean delivery. Woman who described their pain as "horrible" had threefold increase in cesarean delivery.[29] So, where the child birth takes place on a pathologic response produced by fear apprehension and tension, it is necessary to educate patients on process of delivery, reduce fear and give them confidence for pain tolerance. On the other hand the obstetricians and gynaecologists and even psychologists and alternative medication specialists try to overcome the child birth takes place pain practically. Different methods include non-pharmacologic and alternative medications, Transcutaneous Electrical Nerve Stimulation (TENS), systemic medications, Inhalation anesthesia, nerve block and regional analgesia are used for child birth pain relief.[30] Some authors believe that epidural analgesia is most effective form of pain relief.[31,32] Others mentioned that using Lamaze method decrease in pain score slightly.[33] Music therapy is also suggested by some experts for reducing need for analgesic medication,[34] but some studies show no value of music for labor pain relief.[35] Some studies have showed that acupuncture is safe to practice.[36] It significantly increase the degree of relaxation[37] and lower pain score and reduces need for epidural analgesia.[37,38] Massage therapy and therapeutic touch are also reported as a pain relief method[39] but it depend on who was touching the patient. It was more effective when they were touched by relative, friend or husband. Hydrotherapy, herbal medicine and aroma therapy are also recommended for labor pain relief, but the results are contradictory.[40-43] These will teach us that experts seek to provide the best and safest care for mothers and children in the time of child birth include pain relief. They are expected to reduce fear and create greater satisfaction in labor time.

Efforts should be really "mother and child health - oriented" not economic or self benefits. The health administrations should also change the payment system, including increasing the payment for a natural birth and type of insurance cover. If future priorities in mother and child health strategies are to be set to WHO desired cesarean rate (15%),[44] the efforts should be comprehensive and include all practical, social, mental, physical and even spiritual aspects which may influence this procedures.

REFERENCES

1. Price P. Maternal and child health care strategies,' Health and Development', Philips DR and verhasselt Y (Eds), Routedge, London, 1994;138-155.
2. Aubard Y, Le- Meur Y, Garmdyea MH. History of cesarean. Rev Fr Gynecol Obest 1995;90(1):11.
3. Shahnameh FA. The complete poetical work of Ferdousi, Iranian Poet. Sokhangostar, Mashad, Iran. 64, 1998.
4. Doherty EG, Einchenwald EC. Cesarean delivery: emphasis on the neonate. Clin Obstet Gynecol 2004;47(2):332-41.
5. Cai W, Marks JS, Chen CH, Zhuang Y, Morris L, Harris JR. Increased Cesarean section rates and emerging patterns of health insurance in Shanghai, China. Am J Public Health 1998;88(5):777-80.

6. Sewell JE. Cesarean Section, A brief History. American College of Obstetricians and Gynecologists, Washington D.C. 1993.
7. Taffel SM, Placek PJ, Liss T. Trends in the United States cesarean section rate for the 1980–1985 rises. Am J Public Health 1987;77:955-61.
8. Hamilton BE, Martin JA, Sutton PD. Births: preliminary data for 2002. Natl Vital Stat Rep 2003;51:1-20.
9. Iran Health Ministry, Deputy of Treatment: Obstetric and Gynecologist reports 1998.
10. Badakhsh MH, Alizadeh KH. The study of cesarean frequencies, J Med Council 2000;18(3):171-4.
11. Borghei NS, Borghei A, Golapoor MJ, Kashani E. A study of related factors on the mode of delivery. Med Sci J 2005;44: 51-60.
12. Mcelrath TF. Cesarean delivery at the limits of neonatal viability. Clin Obstet Gynecol 2004;47(2):342- 5.
13. Zelop C, Heffner LJ. The Downside of Cesarean Delivery: Short- and Long-Term Complications. Clin Obstet Gynecol 2004;47(2):386-93.
14. Jouafshani MA. The cesarean rate in Ghazvin City. Ghazvin Univ Med Sci J 1998;2(6):27-36.
15. Gouharian V, Maghareh AL. The survey of cesarean rate section in Central Province, Iran. J Raavard Danesh 1998;5:28-30.
16. Joudati AR, Yavarikia P. The survey of cesarean rates in East Azerbaijan. Tabriz J Med Sci 2001;34(46):19-24.
17. Harper MA, Byington RP, Espeland MA. Pregnancy-related death and health care services. Am J Obstet Gynecol 2003;102:273-78.
18. National Institute of Clinical Excellence, Scottish Executive Health Department, Social Service and Public Safety: Why Mothers Die 1997–1999: The Confidential Enquiries Into Maternal Deaths in the UK. London, RCOG Press 2001.
19. Bergholt T, Stenderup JK, Vedsted-Jakobsen A. Intraoperative surgical complication during cesarean section: an observational study of the incidence and risk factors. Alta Obstet Gynecol Scand 2003;82:251-6.
20. Van Ham M, Van Dongen P, Mulder J. Maternal consequences of caesarean section: a retrospective study of intra-operative and post-operative maternal complications of caesarean section during a 10-year period. Eur J Obstet Gynecol Reprod Biol 1997;74:1-6.
21. Smith JF, Hernandez C, Wax JRF. Laceration injury at cesarean delivery. Obstet Gynecol 1997;90:344-6.
22. Lydon-Rochelle M, Holt VL, Martin DP. Association between method of delivery and maternal rehospitalization. JAMA 2000;283:2411-16
23. Kacmar J, Bhimani L, Boyed M. Route of delivery as a risk factor for emergent peripartum hysterectomy: A case-control study. Obstet Gynecol 2003;102:141.
24. Hemminki E, Merilainen J. Long-term effects of cesarean sections. Am J Obstet Gynecolol 1996;174:1569-74.
25. Macario A, El-Sayed YY, Druzin M. Cost-Effectiveness of a Trial of Labor after Previous Cesarean Delivery Depends on the A Priori Chance of Success. Clin Obstet Gynecol 2004;47(2):378-85.
26. Melnikow J, Romano P, Gilbert WM. Vaginal birth after cesarean in California. Obstet Gynecol 2001;98:421-6.
27. Hawkins JL, Koonin LM, Palmer SK. Anesthesia-related deaths during obstetric delivery in the United States, 1979-1990. Anesthesiology 1997;86:277-84.
28. Heffner LJ. Cesarean delivery on demand. Clin Obstet Gynecol 2004;47(2):285.
29. Hess PE, Pratt SD, Soni AK, Sarna MC, Oriol NE. An Association Between Severe Labor Pain and Cesarean Delivery. Anesth Analg 2000;90:881-6.
30. Birnbach DJ, Browne IM. Anesthesia for obstetric, 'Miller Anesthesia', 6th edition. Churchill Livingston, USA, 2005;2315-19.
31. Morgan B, Bulpitt CJ, Clifton P, Lewis PJ. Effectiveness of pain relief in labor: survey of 1000 mothers. BMJ 1982;285:689-90.
32. Robinson JO, Rosen M, Evans JM, Revill SI, David H, Rees GD. Maternal opinion about analgesia for labor. A controlled trial between epidural block and intramuscular pethidine combined with inhalation. Anesth 1980;35:1173-8.
33. Chez RA, Jonas WB. The challenge of complementary and alternative medicine. Am J Obstet Gynecol 1997;177:1156-61.
34. Marwick C. Leaving concert hall for clinic, therapists now test music's "charms". JAMA 1996;275:267-8.
35. Durham L, Collins M. The effect of music as a conditioning aid in prepared childbirth education. J Obstet Gynecol Neonatal Nurs 1986;15:268-70.
36. Hyodo M, Gega O. Use of Acupuncture Anesthesia for Normal Delivery. Am J Chin Med 1977;5:63-9.
37. Skilnand E, Fossen D, Heiberg E. Acupuncture in the management of pain in labor. Acta Obstet Gynecol Scand 2002;81:943-8.
38. Lee MK, Chang SB, Kang DH. Effects of SP6 acupressure on labor pain and length of delivery time in women during labor. J Altern Complement Med 2004;10:959-65.
39. Penny KS. Postpartum perceptions of touch received during labor. Res Nurs Health 1979;2:9-16.
40. Carroll D, Moore RA, Tramer MR, Mc Quay HJ. Transcutaneous electrical nerve stimulation does not relieve labor pain: updated systematic review. Contemp, Rev Obstet Gynecol 1997;195-205.
41. Burn E, Greenish K. Water birth. Pooling information. Nurs Times 1993;89:47-9.
42. Rush J, Burlock S, Lambert K, Loosley-Millman M, Hutchison B, Enkin M. The effects of whirlpool baths in labor: A randomized controlled trial. Birth 1996;23:136-43.
43. Cluett E, Nikodem V, McCandlish R, Burns E. Immersion in water in pregnancy, labour and birth. Cochrane Database Syst Rev 2004;2:111.
44. Villar J. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. BMJ 2007;335:1025.