Indications for Cesarean Section at Thammasat University Hospital

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Objective: *To present the indications associated with the increase in cesarean section rate at Thammasat University Hospital during the past three years.*
Material and Method: *This was a cross-sectional study. Pregnant women who underwent cesarean section between January 2003 and December 2005 at Thammasat University Hospital were recruited for the present study. Cases of fetal anomaly or intrauterine fetal death were excluded. Demographic and obstetric data including indications of cesarean section and pregnancy outcomes were collected and analyzed.*
Results: *Among the 1328, 1402, and 1522 cases of cesarean section (27.31, 27.94, and 29.26%) in 2003, 2004 and 2005 respectively, the major indication was previous cesarean section (29%). Cephalopelvic disproportion (CPD), and elective cesarean section were second, and third most common indication (24.64%, 11.23%) respectively.*
Conclusion: *The increasing cesarean section rate was due to rising of elective cesarean section or patient's request. Cesarean section without obstetric indication should be reconsidered to lower the cesarean section rate*

Keywords: *Cesarean section, Indication, Elective cesarean section*

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Recently, the cesarean section rate has increased in several countries[1-6]. Opinions differ as to whether this increases maternal and neonatal benefits[5,7]. Factors influencing cesarean section that have been investigated included maternal age, neonatal birth weight, medical complications, induction of labor, type of hospital, education, attitude of the patient and attitude of obstetrician[3,4,8-12]. Indications for cesarean section include previous cesarean section, cephalopelvic disproportion (CPD), abnormal presentation as well as elective cesarean section. In Thammasat University Hospital, the cesarean section rate was 19.43% in 1998 and had reached 27.31% in 2003. The present study aimed to identify reasons for the increase in the cesarean section rate at Thammasat University Hospital in the past 3 years.

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Material and Method

This was a cross-sectional study at Thammasat University Hospital with institutional review board approval. Data of cesarean deliveries between January 2003 and December 2005 were collected. Exclusion criteria were fetal anomaly or intrauterine fetal death. A request by the woman to have an abdominal delivery without a strict obstetric indication defined as "elective cesarean section". In Thammasat University Hospital, the authors routinely do cesarean section in women with previous cesarean section. Demographic data was analyzed by descriptive statistic. Indications of cesarean section in nulliparous women were compared with parous women. The authors also classified indications for cesarean section as elective cesarean section, relative or controversial indications, and universally accepted indications. Relative indications include breech presentation, elderly primigravidarum, thick meconium stain or oligohydramnios, multifetal pregnancy, severe pre-eclampsia, post term and genital

lesion. Universally accepted indications include previous cesarean section, CPD, fetal distress, failure of induction, placenta previa, transverse lie, and placental abruption. The authors classified previous c/s as a universally accepted indication because of limitation for trying vaginal birth after cesarean section in Thammasat University Hospital. The authors then compared indications for cesarean section between each year.

Statistical analysis

Mean and standard deviation (SD), frequencies and percent were used describe maternal characteristics. Chi-square test was used to compare indications for cesarean section between each year using $p < 0.05$ as significant difference.

Results

There were 4,252 cases recruited in the present study. Numbers of cesarean section cases were 1328, 1402, and 1522 cases (27.31, 27.94, and 29.26%) in 2003, 2004, and 2005 respectively. The majority of cases were primigravity and term pregnancy (Table 1). Most common indication was previous cesarean section (29%). CPD and elective cesarean section were the second and third most common indication (24.64%, 11.23%) respectively (Table 2). In nulliparous women, the most common indication was CPD (38.15%) while elective cesarean section and breech presentation were the second and third most common indication (17.69 and 13.43%) respectively. Elective cesarean section, breech presentation, and fail induction were found in nulliparous women more often than in women who had previous deliveries (Table 3).

When the authors compared the indications of cesarean section between each year as elective cesarean section, relative indication and universally accepted indication, the authors found that elective cesarean section increased from 10.03% in 2003 to 13.39% in 2005 while cesarean section with universally accepted indications decreased from 72.68% in 2003 to 70.25% in 2005 (Table 4).

Discussion

There was a dramatic the increase in cesarean section rate at the institution compared with 7 years earlier (29.26 versus 19.43%). This high cesarean section rate is approximately equal to the United States[7]. The major indication was previous cesarean section, as seen in a previous study[2]. In the present study, CPD or abnormal progression of labor prompted nearly 25% of all cesarean section and was the most common indication in nulliparous cases as prior reports[1,8]. While suspected fetal distress was nearly 10%, as

Table 1. Maternal demographic data (4,252 cases)

Data	%
Age	
< 20 years	4.94
20-35 years	82.17
> 35 years	12.89
mean ± SD (year)	28.89 ± 5.59
Gravidity	
1	44.08
2	39.57
3	12.83
≥ 4	3.52
Parity	
0	56.28
1	36.46
2	6.14
≥ 3	1.12
Abortion	
0	80.41
1	15.92
2	3.02
≥ 3	0.65
Gestational age at delivery (weeks)	
< 37	10.17
37-42	89.72 (2469)
> 42	0.11 (3)
mean ± SD	38.19 ± 1.86
Number of antenatal cares	9

Table 2. Indications for cesarean section

Indications	%
Previous cesarean section	29.00
Cephalopelvic disproportion	24.64
Elective cesarean section	11.23
Breech presentation	9.70
Fetal distress	9.19
Failure of induction	5.27
Placenta previa	2.51
Elderly primigravidarum	1.64
Thick meconium stain, oligohydramnios	1.60
Multifetal pregnancy	1.82
Severe pre-eclampsia	0.94
Transverse lie	0.87
Post term	0.76
Genital lesion	0.73
Placental abruption	0.11

Table 3. Indications for cesarean section in nulliparous and parous women

Indications	Nullipara % (n = 2390)	Parous % (n = 1862)
Previous cesarean section	0	66.33
Cephalopelvic disproportion	38.15	7.23
Elective cesarean section	17.69	2.91
Breech presentation	13.43	4.91
Fetal distress	8.65	9.89
Failure of induction	8.26	1.41
Placenta previa	2.53	2.49
Elderly primigravidarum	2.91	0
Thick meconium stain, oligohydramnios	1.74	1.41
Multifetal pregnancy	2.00	1.59
Severe pre-eclapsia	1.55	0.17
Transverse lie	0.90	0.83
Post term	1.16	0.25
Genital lesion	0.90	0.50
Placental abruption	0.13	0.08

Table 4. Indications for cesarean section in each year

Indications	2003 %	2004 %	2005 %	p-value*
Elective cesarean section	10.03	10.54	13.39	0.199
Relative indication	17.29	17.92	16.36	0.199
Universally accepted indication	72.68	71.54	70.25	0.199

* Chi square test; $p \leq 0.05$ - significant

8.93%, 9.13%, and 9.51% in 2003, 2004, and 2005 respectively. The authors postulate that the increasing rate of fetal distress is because of using external fetal heart rate monitoring connected to a monitor at the nurse station since May 2004. It has been supported by recent publications[1,6,7,13] that cesarean section in recent years have been carried out "at a lower threshold" of abnormality, as fetal heart rate changes to less severe or of shorter duration. Therefore, it is likely that cesarean section was decided earlier in labor, to be on the safe side. The elective cesarean section was the third common indication and seen more often in nulliparous women. This differed from a previous study of Chong and Mongelli that showed that only a small number of Asian women preferred an elective cesarean section[14]. This indication increases from 10.03% in 2003 to 13.39% in 2005. Even though this rising rate has not statistic significance (p = 0.199) it also demonstrates a trend of increasing. As in other countries, elective cesarean section or cesarean section due to patient request has increased over recent years[2-4,6]. The common reasons for choosing a cesarean delivery are avoiding labor pains, lowering the risk of fetal distress, and reducing subsequent stress urinary incontinence or pelvic floor problems[3,9,14]. Traditionally, obstetricians are likely to agree to the patient's request[3,4,9,10]. While elective cesarean section increased in recent years, universally accepted indications of cesarean section decreased. In summary, the cesarean section rates in Thailand have raised the same as other countries. It is questionable whether the increased cesarean section rate has had any significant influence on maternal or neonatal benefits. According to increasing elective cesarean section or patient's request, it is suggested that obstetricians should counsel pregnant women strictly adhering to medical indications.

References

1. Tampakoudis P, Assimakopoulos E, Grimbizis G, Zafrakas M, Tampakoudis G, Mantalenakis S, et al. Cesarean section rates and indications in Greece:

data from a 24-year period in a teaching hospital. Clin Exp Obstet Gynecol 2004; 31: 289-92.
2. MacKenzie IZ, Cooke I, Annan B. Indications for caesarean section in a consultant obstetric unit over three decades. J Obstet Gynaecol 2003; 23: 233-8.
3. Usha Kiran TS, Jayawickrama NS. Who is responsible for the rising caesarean section rate? J Obstet Gynaecol 2002; 22: 363-5.
4. Penn Z, Ghaem-Maghami S. Indications for caesarean section. Best Pract Res Clin Obstet Gynaecol 2001; 15: 1-15.
5. Wagner M. Choosing caesarean section. Lancet 2000; 356: 1677-80.
6. Florica M, Stephansson O, Nordstrom L. Indications associated with increased cesarean section rates in a Swedish hospital. Int J Gynaecol Obstet 2006; 92: 181-5.
7. Resnik R. Can a 29% cesarean delivery rate possibly be justified? Obstet Gynecol 2006; 107: 752-4.
8. Sultana A, un Nisa A. Indications of caesarean section in a district head quarter hospital for women. J Ayub Med Coll Abbottabad 2003; 15: 36-8.
9. Farrell SA, Baskett TF, Farrell KD. The choice of elective cesarean delivery in obstetrics: a voluntary survey of Canadian health care professionals. Int Urogynecol J Pelvic Floor Dysfunct 2005; 16: 378-83.
10. Habiba M, Kaminski M, Da Fre M, Marsal K, Bleker O, Librero J, et al. Caesarean section on request: a comparison of obstetricians' attitudes in eight European countries. BJOG 2006; 113: 647-56.
11. Heffner LJ, Elkin E, Fretts RC. Impact of labor induction, gestational age, and maternal age on cesarean delivery rates. Obstet Gynecol 2003; 102: 287-93.
12. Kozinszky Z, Orvos H, Zoboki T, Katona M, Wayda K, Pal A, et al. Risk factors for cesarean section of primiparous women aged over 35 years. Acta Obstet Gynecol Scand 2002; 81: 313-6.
13. Sangalli M, Guidera A. Caesarean section in term nulliparous women at Wellington Hospital in 2001: a regional audit. N Z Med J 2004; 117: U1184.
14. Chong ES, Mongelli M. Attitudes of Singapore women toward cesarean and vaginal deliveries. Int J Gynaecol Obstet 2003; 80: 189-94.

ข้อบ่งชี้ในการผ่าตัดคลอดบุตร ณ โรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ์

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วัตถุประสงค์: *เพื่อศึกษาถึงข้อบ่งชี้ที่มีผลต่อการเพิ่มสูงขึ้นของอัตราการผ่าตัดคลอดบุตร ณ โรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ์ ในระยะเวลา 3 ปีที่ผ่านมา*

รูปแบบการวิจัย: *cross-sectional study*

วัสดุและวิธีการ: *ข้อมูลของหญิงตั้งครรภ์ที่ได้รับการผ่าตัดคลอดบุตรในช่วงระหว่างเดือนมกราคม พ.ศ.2546 ถึงเดือนธันวาคม พ.ศ.2548 ณ โรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ์ ได้ถูกรวบรวมเข้าในการศึกษาครั้งนี้ ในรายที่ทารกในครรภ์มีความผิดปกติ หรือเสียชีวิตในครรภ์ จะถูกคัดออกจากการศึกษา ข้อมูลทั่วไปและข้อมูลทางสูติศาสตร์ รวมทั้งข้อบ่งชี้ของการผ่าตัดคลอดบุตรและผลของการตั้งครรภ์ครั้งนี้จะถูกรวบรวมและวิเคราะห์ต่อไป*

ผลการศึกษา: *ในปี พ.ศ.2546-2548 มีหญิงตั้งครรภ์ที่ได้รับการผ่าตัดคลอดบุตรในการศึกษาครั้งนี้ จำนวน 1328, 1402 และ 1522 รายในแต่ละปี ตามลำดับ คิดเป็นร้อยละ 27.31, 27.94 และ 29.26 ของการคลอด ตามลำดับ ข้อบ่งชี้ที่พบบ่อย ที่สุด 3 อันดับแรก ได้แก่ มีประวัติได้รับการผ่าตัดคลอดบุตรมาก่อน (ร้อยละ 29) ภาวะศีรษะมีขนาดไม่สัมพันธ์กับเชิงกราน (ร้อยละ 24.64) และ การผ่าตัดคลอดบุตรโดยไม่มีข้อบ่งชี้ทางการแพทย์ (ร้อยละ 11.23)*

สรุป: *อัตราการผ่าตัดคลอดบุตรที่เพิ่มสูงขึ้น ส่วนหนึ่งเป็นผลมาจากการผ่าตัดคลอดบุตรโดยที่ไม่มีข้อบ่งชี้ทางการแพทย์ที่ชัดเจน หรือ ผ่าตัดตามความต้องการของหญิงตั้งครรภ์ ดังนั้นสูติแพทย์จึงควรพิจารณาถึงเรื่องนี้ในการที่จะลดอัตราการผ่าตัดคลอดบุตร*