Postnatal Urinary Incontinence after Caesarean Section

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Objectives:
To assess the prevalence of urinary incontinence in women who have undergone Caesarean section, and to identify the risk factors for post-Caesarean urinary incontinence.

Methods:
The study took place in Queen Elizabeth Hospital, a tertiary hospital in Hong Kong. During the research period, consecutive parturients, who had delivered by Caesarean section and had no history of a vaginal delivery, were recruited in the postnatal wards and followed up for 3 months.

Results:
From March 2007 to July 2007, 498 consecutive parturients were recruited. The incidence of urinary incontinence during pregnancy was 51.0%, which dropped to 6.5% at 3 months after delivery. It was found that body weight before pregnancy (54.10 kg vs 52.27 kg, p=0.015) and body mass index (21.9 kg/m^2 vs 21.0 kg/m^2, p=0.004) affected the prevalence of urinary incontinence both during pregnancy and 3 months after delivery. These effects were statistically significant. Moreover, age affected the prevalence of urinary incontinence at 3 months after delivery (35.46 vs 32.09, p=0.039), but not during pregnancy.

Conclusion:
This study shows that in women who undergo Caesarean section, age, pre-pregnancy body weight and body mass index affect the prevalence of urinary incontinence after delivery.
Hong Kong J Gynaecol Obstet Midwifery 2010; 10:53-60

Keywords: Cesarean section; Obstetric labor complications; Prevalence; Risk factor; Urinary incontinence

Introduction

Urinary incontinence is common in women but under-reported due to embarrassment and lack of knowledge about its treatment. It can affect the individual's social life and self-esteem and, if neglected, can impose medical and economic burdens on the community[1-3].

There are many risk factors for the development of urinary incontinence. Pregnancy and childbirth are commonly associated factors, affecting 3.6 to 30% of women[4,5]. It has been reported that pregnancy itself may cause mechanical changes, hormonal changes, or both, leading to urinary incontinence. Moreover, damage to pelvic floor muscle or nerves during vaginal delivery also contributes to urinary incontinence[2,6,7].

It has been proposed that delivery via elective Caesarean section may protect female continence, as this prevents neuropathy of the pudendal nerve during the passage of the fetal vertex through the birth canal. However, neurophysiological injuries can also occur

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during a Caesarean section. Urinary incontinence is not uncommon after Caesarean section, despite the prevalence being lower than that seen after vaginal delivery (4.5% after Caesarean section and 7.3% after vaginal delivery)[6-10].

Studies have investigated risk factors for urinary incontinence in relation to vaginal birth[2,11-13], including age, medical and continence history, obstetric history, obstetric factors, fetal birth weight, and fetal head circumference, etc. However, few clinical trials have assessed whether use of Caesarean section protects against the development of urinary incontinence[11,14] and sought to identify risk factors associated with post-Caesarean incontinence[7,9,11,15]. Therefore, the notion that delivery by Caesarean section protects pelvic floor function and thus prevents post-natal urinary incontinence remains controversial.

Caesarean sections are commonly used in obstetrics, either electively or to manage emergencies. In our hospital, the Caesarean section rate increased from 18% in 1998 to 25% in 2007. This study aimed to discover the prevalence of, and risk factors associated with, urinary incontinence in women who have undergone Caesarean section in our hospital. We selected a group of patients who had not experienced a previous vaginal delivery in order to exclude any effect a vaginal delivery may have had on their pelvic floor integrity. We intended to seek factors besides vaginal birth, that may affect urinary incontinence, in order to provide more comprehensive counselling when pregnant women request Caesarean section because they fear urinary incontinence after a vaginal delivery.

Methods

This study was a prospective cohort study with retrospective analysis of antenatal symptomatology and risk factors. The study took place in the postnatal wards in Queen Elizabeth Hospital, which is a tertiary hospital in Hong Kong. During the research period, consecutive parturients with no history of a previous vaginal delivery, who delivered by Caesarean section and who consented to our study, were recruited in the postnatal wards and were followed up for 3 months. The reported prevalence of post-Caesarean urinary incontinence was around 4.5%. Assuming this study would yield a similar prevalence of 5% with a dropout rate of 20%, a sample size of 450 would produce a 95% confidence interval (95% CI) equal to an estimated prevalence of ±3%[16].

Women who were unable to complete the questionnaires, unable to give informed consent, or unwilling to participate in this study were excluded, accounting for 1% of the target population. Women with multiple pregnancies were also excluded from the study as multiple pregnancy is a confounding factor affecting the risk of urinary incontinence after delivery. Those women who had given birth vaginally prior to the current pregnancy were also excluded as damage to pelvic floor muscles or nerves during a vaginal delivery may contribute to urinary incontinence[2,6,7].

The Ethics Committee at the Queen Elizabeth Hospital, Hong Kong, approved the research protocol. Patients were recruited by the investigators and research nurses in the postnatal ward on day 1 after delivery. Written consent was obtained from all patients who agreed to participate in this study. Demographic and obstetric data were collected from the patients who were asked to fill in the Chinese version of the urogenital distress inventory (UDI-6). This was used to assess the severity of the patients' urinary symptoms (before delivery and 3 months after delivery). Research nurses used the same set of questions to interview the patients by telephone 3 months after delivery.

A sample of the study questionnaire is shown in the Appendices. Urinary incontinence is defined as involuntary loss of urine that is objectively demonstrated and causes a social problem. A research nurse performed data collection and data entry. Demographic data and factors possibly associated with post-Caesarean urinary incontinence were analysed. The Statistical Package for Social Sciences (SPSS Windows version 13.0) was used for data analysis. Descriptive statistics were used for the demographic data.

Results

From March 2007 to July 2007, 498 consecutive parturients with no history of a previous vaginal delivery, who had undergone Caesarean section, were recruited in postnatal wards on day 1 after delivery, and followed up for 3 months. All gave informed consents. The mean gestation at interview was 38.3 weeks (range, 26.5-41.5 weeks) and the mean age at interview was 32.2 years

(range, 18-44 years).

The incidence of urinary incontinence during pregnancy was 51.0%. This dropped to 6.5% at 3 months after delivery. In Tables 1 and 2, each risk factor that might affect urinary incontinence after a Caesarean section was assessed independently. It was found that during pregnancy, body weight before pregnancy (54.1 vs 52.3 kg, p=0.015), body mass index before pregnancy (21.9 vs 21.0 kg/m^2, p=0.004) and pelvic floor exercise (p<0.001) affected the prevalence of urinary incontinence; these effects were all statistically significant. On the other hand, there was no statistically significant difference in age, maturity at delivery, parity, birth weight of the baby, and mode of delivery between the group with urinary incontinence and those with no urinary incontinence.

Of the 498 parturients recruited, only 397 could be contacted by telephone for a second interview at 3 months after delivery, yielding a dropout rate of 20%.

Table 1. Urinary incontinence during pregnancy*

	Incontinence group (n=254)	No incontinence group (n=244)	p Value
Age (years)	32.4 ± 4.5	31.9 ± 4.4	0.27
Maturity at delivery (weeks)	38.3 ± 1.6	38.3 ± 2.0	0.93
Multiparity	0.5 ± 0.6	0.4 ± 0.6	0.15
Body weight before pregnancy (kg)	54.1 ± 9.0	52.3 ± 7.7	0.015
Body weight difference (kg)	15.7 ± 16.8	15.7 ± 6.3	0.99
Body mass index (kg/m^2)	21.9 ± 3.4	21.0 ± 2.8	0.004
Birth weight of baby (kg)	3.2 ± 0.5	3.1 ± 0.6	0.22
Mode of delivery			0.092
Elective	120 (47%)	97 (40%)	
Emergency	134 (53%)	147 (60%)	
Constipation			0.625
Yes	83 (33%)	90 (37%)	
No	171 (67%)	154 (63%)	
Pelvic floor exercise			<0.001
Yes	95 (37%)	54 (22%)	
No	159 (63%)	190 (78%)	

* Data are shown as mean ± standard deviation or No. (%)

Most of these were new immigrants from China who returned to China during the postnatal period. The others were working mothers who returned to work after maternity leave.

At 3 months after delivery, age (35.5 vs 32.1, p=0.039), parity (0.6 vs 0.4, p=0.046), body weight before pregnancy (57.6 vs 53.2 kg, p=0.012), and body mass index (23.2 vs 21.5 kg/m^2, p=0.008) affected the prevalence of urinary incontinence. These effects were all statistically significant.

During the interviews, we specifically asked about urinary stress incontinence during pregnancy and 3 months after delivery (Tables 3 and 4). The incidence of stress incontinence during pregnancy was 25.9%. This dropped to 5.5% at 3 months after delivery. We found that during pregnancy, parity (p=0.022) affected the prevalence of urinary stress incontinence, and this effect was statistically significant.

Table 2. Urinary incontinence 3 months after delivery*

	Incontinence group (n=26)	No incontinence group (n=371)	p Value
Age (years)	35.5 ± 4.9	32.1 ± 4.4	0.039
Maturity at delivery (weeks)	38.4 ± 1.4	38.3 ± 1.9	0.739
Parity	0.6 ± 0.9	0.4 ± 0.6	0.046
Body weight before pregnancy (kg)	57.6 ± 13.4	53.2 ± 8.2	0.012
Body weight difference (kg)	13.4 ± 5.5	15.8 ± 14.3	0.405
Body mass index (kg/m^2)	23.2 ± 4.8	21.5 ± 3.1	0.008
Birth weight of baby (kg)	3.1 ± 0.5	3.1 ± 0.5	0.913
Mode of delivery			0.252
Elective	14 (54%)	157 (42%)	
Emergency	12 (46%)	214 (58%)	
Constipation			0.601
Yes	5 (19%)	57 (15%)	
No	21 (81%)	314 (85%)	
Pelvic floor exercise			0.502
Yes	12 (46%)	147 (40%)	
No	14 (54%)	224 (60%)	

* Data are shown as mean ± standard deviation or No. (%)

Table 3. Stress incontinence during pregnancy*

	Stress incontinence (n=124)	No stress incontinence (n=374)	p Value
Age (years)	32.2 ± 4.5	31.1 ± 4.5	0.81
Maturity at delivery (weeks)	38.2 ± 1.6	38.3 ± 1.9	0.68
Parity	0.5 ± 0.7	0.4 ± 0.6	0.022
Body weight before pregnancy (kg)	53.2 ± 9.0	53.2 ± 8.2	0.98
Body weight difference (kg)	15.8 ± 6.4	15.6 ± 14.3	0.90
Body mass index (kg/m^2)	21.3 ± 3.4	21.5 ± 3.1	0.65
Birth weight of baby (kg)	3.1 ± 0.5	3.1 ± 0.5	0.41
Mode of delivery			0.408
Elective	58 (47%)	159 (43%)	
Emergency	66 (53%)	215 (57%)	
Constipation			0.987
Yes	43 (35%)	130 (35%)	
No	81 (65%)	244 (65%)	
Pelvic floor exercise			0.839
Yes	38 (31%)	111 (30%)	
No	86 (69%)	263 (70%)	

* Data are shown as mean ± standard deviation or No. (%)

Table 4. Stress incontinence 3 months after delivery*

	Stress incontinence (n=22)	No stress incontinence (n=375)	p Value
Age (years)	33.7 ± 4.5	32.1 ± 4.5	0.10
Maturity at delivery (weeks)	38.6 ± 1.5	38.3 ± 1.9	0.52
Parity	0.6 ± 0.9	0.4 ± 0.6	0.10
Body weight before pregnancy (kg)	57.8 ± 14.2	53.2 ± 8.2	0.016
Body weight difference (kg)	14.9 ± 4.8	15.6 ± 14.2	0.81
Body mass index (kg/m^2)	23.5 ± 5.1	21.5 ± 3.1	0.006
Birth weight of baby (kg)	3.2 ± 0.5	3.1 ± 0.5	0.73
Mode of delivery			0.172
Elective	12 (55%)	159 (42%)	
Emergency	10 (45%)	216 (58%)	
Constipation			0.734
Yes	4 (18%)	58 (15%)	
No	18 (82%)	317 (85%)	
Pelvic floor exercise			0.728
Yes	8 (36%)	151 (40%)	
No	14 (64%)	224 (60%)	

* Data are shown as mean ± standard deviation or No. (%)

Three months after delivery, body weight before pregnancy (57.8 vs 53.2 kg, p=0.016), body mass index (23.5 vs 21.5 kg/m^2, p=0.006) affected the prevalence of urinary stress incontinence; these effects were statistically significant.

Discussion

The longitudinal pattern of urinary incontinence seen in this study — a high rate of incontinence during pregnancy, followed by resolution and lower rates in the postpartum period—is similar to that reported by most previous studies of incontinence during parturition. In our study, 51.0% reported incontinence during pregnancy but the proportion of women reporting incontinence dropped to 6.5% at 3 months after delivery. We chose to investigate the period soon after delivery and then repeat the questionnaire 3 months after delivery for three reasons. Firstly, we wanted to observe the longitudinal pattern of urinary incontinence in this rather young age-group (mean age, 32.2; range, 18-44 years). Secondly, we wanted to exclude recall bias and problems with relating symptoms to events. If the women had given birth many years earlier, there might be a lack of precise obstetric information (such as duration of the various stages of labour), which is not usually available to patients, and problems with disentangling the complex interrelations between factors. Thirdly, we wanted to exclude other factors that may affect the prevalence of incontinence in older women, e.g. chronic cough and diabetes mellitus.

Our study also showed that there was a higher incidence of urinary incontinence both during pregnancy and 3 months after delivery in women with higher pre-pregnancy body weights or body mass indices. This finding was in concordance with previous studies[13]. It has been hypothesised that excess weight places extra pressure on the pelvic floor and thus increases the risk of urinary incontinence.

Age is a well-known risk factor for incontinence and our study demonstrated that age affects urinary

incontinence 3 months after delivery but not during pregnancy. It has been postulated that the effect of age on the rate of urinary incontinence would be more obvious as time goes by. Other studies have demonstrated an association between urinary incontinence and age at first delivery[2]. This finding suggests increasing vulnerability of the pelvic floor with age in women with no previous delivery.

We found that use of pelvic floor exercises has a statistically significant effect on the prevalence of urinary incontinence during pregnancy but not 3 months after delivery. These results might be affected by a lack of standardisation in the pelvic floor exercises performed. No course teaching of proper pelvic floor exercises was offered to these women, thus they may not have done it intensively enough to have any significant benefit. Sometimes, incontinent women adopt exercises as a management strategy rather than a prevention strategy to control their incontinence, thus this limitation may affect the accuracy of the study. Other studies have found that postpartum pelvic floor muscle exercises may reduce incontinence up to 12 months later[5]. Given the evidence of the beneficial effects of pelvic floor exercise, it is reasonable to systematically offer these conservative interventions to women identified as being at risk, and implement them fully.

There was a statistically significant association between parity and the prevalence of urinary stress incontinence at delivery, but not at 3 months after delivery. Wilson et al[17] had similar findings. The high prevalence of stress incontinence during pregnancy might be explained by the mechanical effect of the gravid uterus on the bladder or possibly the effect of hormonal influences on urethral physiology. We excluded women with a past vaginal delivery from this study, thus excluding the effect of previous vaginal deliveries in multiparous women on the prevalence of urinary incontinence. This suggests that pregnancy itself might cause mechanical changes, hormonal changes or both, leading to urinary incontinence.

We could not demonstrate any statistically significant difference between the prevalence of urinary incontinence in women with and without constipation. It has been hypothesised that constipation may contribute to the aetiology of both urinary incontinence and genital prolapse because of its detrimental effect on pelvic innervation. In our study however, only 34.4% of women had constipation at the time of delivery, and out of the whole population, only 10% of women had constipation before pregnancy. This small sample size might not reflect the condition with statistical significance. In women with constipation since pregnancy, the short period of constipation may not have been long enough to show its effect on the pelvic floor. It was not clear whether pelvic floor disorders were responsible for the constipation, or whether they were a consequence of chronic straining to pass a stool. Chronic straining to pass a stool may promote a vicious cycle, where impaired nerve activity leads to muscular dysfunction and less efficient protection of the connective tissue against excessive stretching forces. If this hypothesis is correct, the damage would affect the entire pelvic floor, involving both anterior and posterior compartments.

It has been suggested that incontinence rarely develops during the puerperium. Most postpartum incontinence actually begins during pregnancy and persists after delivery. In this study only three of the women were continent during pregnancy and developed de-novo incontinence after delivery. The finding that antepartum incontinence is a predictor of postpartum incontinence provides an opportunity to identify women who experience incontinence during pregnancy, to counsel them about their increased risk and offer them preventative strategies.

We could not demonstrate any effect of the baby's birth weight on the prevalence of urinary incontinence after Caesarean section. Birth weight is likely to have greater effect on women giving birth vaginally, as a higher birth weight would cause more significant trauma to the pelvic floor during a vaginal delivery. Our patients all underwent Caesarean section so pelvic floor trauma was minimised.

We could not demonstrate any differences between the effects of emergency or elective Caesarean sections on the prevalence of urinary incontinence. This may be because those women who had emergency Caesarean sections were still in the latent phase of labour, thus the traumatic effect on their pelvic floor was still minimal. Nelson et al[18] showed that anal sphincter injury was not prevented by Caesarean sections performed during

later phases of labour (at 8 cm dilatation or more). In our study, the number of women in an active phase of labour prior to undergoing caesarean section was small. A future study comparing these two groups of patients might yield significant results.

The relationship between smoking and urinary incontinence is unclear. Heavy current smoking and former smoking have been associated with a higher risk of urinary incontinence[19]. Alcohol can irritate the bladder, so alcohol consumption may be associated with an increased risk of urinary incontinence[20]. Very few of the women in our study population smoked tobacco or drank alcohol so we could not demonstrate any significant associations in this area.

There was a dropout rate of about 20% between the first postnatal interview and the telephone interview 3 months later. One reason for this significant level of dropout was that most women returned to work 2 months after delivery so did not find the telephone interview convenient. The other reason was that a group of patients returned to Mainland China soon after delivery. This is a significant phenomenon in our locality as new immigrants from China now represent a major proportion of our pregnant population.

One of the drawbacks of our study is that we only interviewed the women at delivery and 3 months after delivery. The long-term effects of pregnancy and Caesarean section on the prevalence of urinary incontinence remain unknown. It would be useful to include follow-up interviews at 6 months and 1 year, yielding more conclusive information about the long-term effects. The other drawback is that the first interview was done on day 1 after Caesarean section, and asked women to recall events like urinary incontinence and constipation during the pregnancy. This might cause recall bias and problems with relating symptoms to events. Our sample size was not big, thus the number of women with urinary incontinence at 3 months after delivery was rather small. Further work using a larger sample size, and a prospective study design starting early in pregnancy and using long-term follow-up, may yield more information.

Conclusion

This study shows that age, pre-pregnancy body weight and body mass index significantly affect the prevalence of urinary incontinence after Caesarean section in women who have never given birth vaginally. Parity affects the prevalence of urinary incontinence during pregnancy but not 3 months after delivery. A prospective study using a larger sample, starting early in pregnancy with long-term follow-up after delivery, should yield more information.

References

1. Pang MW, Leung HY, Chan LW, et al. The impact of urinary incontinence on quality of life among women in Hong Kong. *Hong Kong Med J* 2005; 11:158-63.
2. Persson J, Wolner-Hanseen P, Rydhstroem H. Obstetric risk factors for stress urinary incontinence: a population-based study. *Obstet Gynecol* 2000; 96:440-5.
3. Lal M. Prevention of urinary and anal incontinence: role of elective cesarean delivery. *Curr Opin Obstet Gynecol* 2003; 15:439-48.
4. Chaliha C, Kalia V, Stanton SL, et al. Antenatal prediction of postpartum urinary and fecal incontinence. *Obstet Gynecol* 1999; 94:689-94.
5. Glazener CM, Herbison GP, Wilson PD, et al. Conservative management of persistent postnatal urinary and faecal incontinence: randomised controlled trial. *BMJ* 2001; 323:593-6.
6. Fritel X, Fauconnier A, Levet C, et al. Stress urinary incontinence 4 years after the first delivery: a retrospective cohort survey. *Acta Obstet Gynecol Scand* 2004; 83:941-5.
7. Hannah ME, Hannah WJ, Hodnett, et al. Outcomes at 3 months after planned cesarean vs planned vaginal delivery for breech presentation at term: the international randomized Term Breech Trial. *JAMA* 2002; 287:1822-31.
8. McKinnie V, Swift SE, Wang W, et al. The effect of pregnancy and mode of delivery on the prevalence of urinary and fecal incontinence. *Am J Obstet Gynecol* 2005; 193:512-8.

9. Farrell SA, Allen VM, Baskett TF. Parturition and urinary incontinence in primiparas. *Obstet Gynecol* 2001; 97:350-6.
10. Schytt E, Lindmark G, Waldenström U. Symptoms of stress incontinence 1 year after childbirth: prevalence and predictors in a national Swedish sample. *Acta Obstet Gynecol Scand* 2004; 83:928-36.
11. Press J, Klein MC, von Dadelszen P. Mode of delivery and pelvic floor dysfunction: a systematic review of the literature on urinary and fecal incontinence and sexual dysfunction by mode of delivery. Medscape website: http://www.medscape.com/viewprogram/4989?src=mp. Accessed Nov 2008.
12. Burgio KL, Zyczynski H, Locher JL, et al. Urinary incontinence in the 12-month postpartum period. *Obstet Gynecol* 2003; 102:1291-8.
13. Glazener CM, Herbison GP, MacArthur C, et al. New postnatal urinary incontinence: obstetric and other risk factors in primiparae. *BJOG* 2006; 113:208-17.
14. Rortveit G, Daltveit AK, Hannestad YS, et al. Urinary incontinence after vaginal delivery or cesarean section. *N Engl J Med* 2003; 348:900-7.
15. Goldberg RP, Kwon C, Gandhi S, et al. Urinary incontinence among mothers of multiples: the protective effect of cesarean delivery. *Am J Obstet Gynecol* 2003; 188:1447-53.
16. Machin D, Campbell M, Fayers P, et al. Sample size tables for clinical studies, 2nd ed. *London, Edinburgh, Malden and Carlton: Blackwell Science*, 1997.
17. Wilson PD, Herbison RM, Herbison GP. Obstetric practice and the prevalence of urinary incontinence three months after delivery. *Br J Obstet Gynaecol* 1996; 103:154-61.
18. Nelson RL, Westercamp M, Furner SE. A systematic review of the efficacy of cesarean section in the preservation of anal continence. *Dis Colon Rectum* 2006; 49:1587-95.
19. Hannestad YS, Rortveit G, Daltveit AK, et al. Are smoking and other lifestyle factors associated with female urinary incontinence? The Norwegian EPINCONT Study. *BJOG* 2003; 110:247-54.
20. Hampel C, Wienhold D, Benken N, et al. Prevalence and natural history of female incontinence. *Eur Urol* 1997; 32:3-12.

Appendix 1. Sample of the questionnaire

Demographic data
Occupation: _____
Age: _____ Mat at delivery: _____
Parity _____
Previous mode of delivery (if any) _____
Past Medical Health:
Previous surgery:
AN problem:

Gum Label

Body weight before pregnancy: _____ kg
Body weight at delivery: _____ kg
Body weight difference: _____ kg
Height: _____ M
BMI: _____

Labour and delivery
Mode of delivery: Elective C/S Emergency C/S

BW of baby: _____ kg

Any complications: Yes/ No State if Yes: _____

Appendix 2. distress inventory (UDI-6)

伊利沙伯醫院婦產科產後小便失禁問卷調查

1. 你曾否動過有關盤腔或改善小便失禁的手術？ 有 ❑ 沒有 ❑
   如有的話是什麼手術_____
2. 最近你有沒有滴漏小便或小便失禁 有 ❑ 沒有 ❑
   如有的話，從什麼時候開始 懷孕前 ❑ 懷孕時 ❑ 生產後 ❑
3. 你有沒有便秘情況 有 ❑ 沒有 ❑
   如有的話，從什麼時候開始 懷孕前 ❑ 懷孕時 ❑ 生產後 ❑
4. 你有否作骨盤肌肉運動 有 ❑ 沒有 ❑
   如有的話，從什麼時候開始 懷孕前 ❑ 懷孕時 ❑ 生產後 ❑

UDI-6小便困苦清單

	完全沒有	輕微	中度	嚴重
1 經常去小便	❑ 0	❑ 1	❑ 2	❑ 3
2 由急迫感覺引致的失禁	❑ 0	❑ 1	❑ 2	❑ 3
3 由活動、咳嗽或打噴嚏引致的失禁	❑ 0	❑ 1	❑ 2	❑ 3
4 小量的小便失禁（例如數滴）	❑ 0	❑ 1	❑ 2	❑ 3
5 有困難去排清小便	❑ 0	❑ 1	❑ 2	❑ 3
6 小腹或小陰部位有疼痛或不適	❑ 0	❑ 1	❑ 2	❑ 3

生產三個月後

	完全沒有	輕微	中度	嚴重
1 經常去小便	❑ 0	❑ 1	❑ 2	❑ 3
2 由急迫感覺引致的失禁	❑ 0	❑ 1	❑ 2	❑ 3
3 由活動、咳嗽或打噴嚏引致的失禁	❑ 0	❑ 1	❑ 2	❑ 3
4 小量的小便失禁（例如數滴）	❑ 0	❑ 1	❑ 2	❑ 3
5 有困難去排清小便	❑ 0	❑ 1	❑ 2	❑ 3
6 小腹或小陰部位有疼痛或不適	❑ 0	❑ 1	❑ 2	❑ 3

你現在有沒有便秘情況	有 ❑	沒有 ❑
產後有沒有作骨盤肌肉運動	有 ❑	沒有 ❑

Appendix 3. Patient consent form

參與研究同意書

研究題目
初次懷孕婦女生產後的尿失禁: 剖腹產對陰道產

主任研究員
伊利沙伯醫院洪穎恩醫生

研究目的及宗旨
辨認婦女剖腹產的小便失禁的流行性和因素。

研究程序
若本人同意參與此項研究，本人將會：
1. 作答有關本人的泌尿症狀的問題。
2. 在三個月後收到問卷訪問，內容將與首次問卷相同，作答後請寄回本院。

利益
參與這項研究不能為本人帶來直接利益。

風險
參與這項研究不會帶來風險。

保密
所有研究資料會被列作機密和只供研究之用。本人之身份亦會在法律許可的情況下完全保密。

問題
研究員已向本人作出解釋，並樂意回答本人問題。若本人有其他問題，可向研究員查詢（電話：2958 5808）

拒絕或退出的權利
本人明白參與本研究與否，乃本人自己之意願。本人參與與否，亦不會影響本人所接受的醫療。本人亦明白可以隨時退出此項研究。

同意書
本人同意參與上述之研究，本人持有此同書之副本並有機會細閱內文。

參與研究者簽名	研究助理簽名	見証人簽名
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