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Title: ELECTIVE CAESAREAN SECTION: DOES IT PREVENT URINARY STRESS INCONTINENCE?

Aims of the Study

Urinary incontinence (UI) is one of the most prevalent, embarrassing, expensive and disabling conditions affecting women at least twice as often as males under the age of 65 years. Pregnancy and childbirth are considered two of the major causes of UI in women but there are no known methods to prevent this occurring. The aim of our study was to assess whether elective caesarean section might reduce the incidence of UI in women after childbirth.

Methods

A retrospective case-controlled survey approved by the Local Research Ethics Committee was performed by postal questionnaire. All deliveries from January 1977 and January 1998 performed in a teaching hospital were analysed. Women who had had three elective caesarean sections and were never in labour were compared with women who had had three spontaneous vaginal deliveries. The General Practitioners or the Health Authority were previously contacted to confirm the women details.

A urinary symptoms questionnaire (USQ) and a King's Health Questionnaire (KHQ) were posted to all the women. The women were contacted by telephone if they did not reply and then a second KHQ and USQ was posted or faxed. All women were grouped in different categories according to their urinary symptoms of frequency, nocturia, urgency, urge incontinence, stress incontinence (SI), nocturnal enuresis, and intercourse incontinence. All terms and definitions are in accordance with International Continence Society (ICS). Data analysis was performed using the Fisher's exact test (SPSS inc. Chicago, USA).

Results

A total population of forty thousand women was studied. Forty women were identified as having three elective Caesarean sections after the clinical notes were checked of this group only thirty women were contactable. Thirty women with three spontaneous vaginal deliveries were randomly selected from the total population as case-control (SVD) group. The mean age was 37 years in the caesarean section group (range 24 –44) and 36 years (range 26 – 44) in the SVD group. The mean follow up after the third delivery was 4 years (range 2 – 6). Only twenty-seven questionnaires in the caesarean section group (90%)and twenty-nine questionnaires in the SVD group (97%) were returned. The number of missing items was 2% (0 – 6%). The total domain scores of the KHQ were not significant different between the two groups ($p > .05$ Mann-Whitney U test) (Table 1). Women who delivered vaginally had significantly more symptoms of stress incontinence compared with those who delivered by elective caesarean section ($p < 0.006$, Table 2, Fisher's Exact test).

	<u>ECS GROUP</u>	<u>SVD GROUP</u>	P
	Median (IQR)	Median (IQR)	
KHQ DOMAIN SCORES			
General Health Perception	25 (0 - 25)	25 (0 - 25)	> . 05
Incontinence Impact	0 (0 – 33.3)	0 (0 – 33.3)	> . 05

Role Limitations	0 (0 – 0)	0 (0 – 0)	> .05
Physical Limitations	0 (0 – 0)	0 (0 – 8.3)	> .05
Social Limitations	11.1 (0 – 11.1)	11.1 (0 – 11.1)	> .05
Personal relationships	33.3 (0 – 33.3)	33.3 (0 – 33.3)	> .05
Emotions	0 (0 – 0)	0 (0 – 16.6)	> .05
Sleep/Energy	0 (0 – 50)	0 (0 – 33.3)	> .05
Severity Measures	0 (0 – 25)	8.33 (0 - 25)	> .05

Table 1. KHQ domain's scores between the elective caesarean section group and spontaneous vaginal delivery group.

		<u>SVD</u>	<u>CS</u>	P
Stress incontinence	NO	19	26	.006
	YES	10	1	
<u>Urge incontinence</u>	NO	26	23	>.05
	YES	3	4	
<u>Frequency</u>	NO	23	23	>.05
	YES	6	4	
<u>Nocturia</u>	NO	22	16	>.05
	YES	7	11	
<u>Urgency</u>	NO	24	25	>.05
	YES	5	2	
<u>Nocturnal enuresis</u>	NO	29	29	>.05
	YES	0	0	
<u>Intercourse incontinence</u>	NO	19	26	>.05
	YES	10	1	

Table 2. Symptoms of urinary stress incontinence between the two study groups.

Comparing the other urinary symptoms of frequency, nocturia, urgency, urge incontinence, nocturnal enuresis, and intercourse incontinence there were no significant differences between the two groups ($p > 0.05$).

Conclusions

This is the first ever study to show that elective caesarean section protects women from developing urinary stress incontinence in a long-term follow up compared with those who delivered vaginally. Pregnancy itself does appear to cause stress incontinence. Other urinary symptoms do not appear to be affected by the mode of delivery. It is not surprising that there is no difference in the quality of life between the two groups due to their size. Urodynamic evaluation would be needed for a more accurate evaluation of the problem.