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Evaluation of lower urinary tract symptoms post cesarean section

Laith A. Al-Anbary

Abstract

Lower urinary tract symptoms are common during pregnancy and shortly after it (puerperium period). Those symptoms usually classified into filling symptoms like urinary frequency, urgency, nocturia, and dysuria. And voiding symptoms which consist of: straining, hesitancy, post void dribbling and weak stream. Over the last decades many researchers were alert to urinary incontinence and it is possible association with childbirth type, cesarean section versus vaginal delivery. The objective of this study is to estimate the effect of cesarean section procedure on lower urinary tract function in long term. The study was conducted at Al-Imamain Al-Kadhmain medical city, Baghdad-Iraq. During the period from (August 2020) to (January 2021). Retrospective cohort study design was chosen. Target population was women with history of previous cesarean section for at least 6 months ago. Data were collected by using structured questionnaire form. 176 women were included. The analysis of data was carried out by using Microsoft excel 2013. This study went with most of the previous researcher findings as it appears that lower urinary tract symptoms (LUTS) have generally low incidence among women with cesarean section. But this study showed a possible effect of multiple cesarean sections on LUTS development, namely pervious three, which can be explained by their higher percentage in our study sample (about 20%) as Iraqi families have a tendency to have more children.

In conclusion; this study concluded that LUTS have low frequency post caesarean section apart from the possible effect of multiple cesarean sections on LUTS development, namely pervious three. In general cesarean section could be protective against LUTS in comparison to normal vaginal delivery.

Keywords: LUTS, Cesarean section, Normal vaginal delivery

*Corresponding Author: laithamer3000@nahrainuniv.edu.iq
[1]College of Medicine, Al-Nahrain University
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Introduction

Lower urinary tract symptoms are a common symptom during pregnancy and those symptoms continue to persist in most of the cases throughout the puerperium period. Urinary frequency was found in up to 95% of pregnant women while urgency was noted in up to 68%. In the face of high prevalence of those symptoms, the impact of childbirth on bladder function has infrequently been studied [1].

In early pregnancy lower urinary tract symptoms can be considered normal events, beside that several authors documented their postpartum resolution [2]. Lower urinary tract symptoms can be considered to be non-organ specific group of symptoms as resent insights hint. Many factors had been investigated for possible association with lower urinary tract symptoms, aging as example had been found to be related, as up to 26% of women of 40 years old to have these symptoms [3].

The argue about cesarean section as an alternative to spontaneous vaginal delivery and impact of each on lower urinary tract function continues [3]. A study by the epidemiology of incontinence in the county of Nordtrondelag (EPINCONT), assessed 15,307 women for the development of voiding dysfunction during longitudinal follow up [4]. They found that the risk of urinary incontinence of all types was higher in women who got cesarean section in comparison to nulliparous women and those who had normal vaginal delivery. But on the other hand moderate to severe incontinence was in fact less in women who undergone cesarean section than those who delivered vaginally [5]. To be noted urgency incontinence found to be equal across all groups [4]. It has been found that for any incontinence the adjusted ratio would be 1.5 for women with cesarean in comparison to 1.7 to those women with vaginal delivery [6]. So further assessment and evaluation of possible effects delivery mode on lower urinary tract is required [7].

Patients and methods

The study was conducted at Al-Imamain Al-Kadhmain medical city, Baghdad-Iraq. During the period from August 2020 to January 2021. Retrospective cohort study design was chosen. Target population was women with history of previous cesarean section for at least 6 months ago. Any lady with anatomical or functional urinary tract pathology had been excluded as well as any lady who use to have chronic illness or on medications that might affect lower urinary tract function. Data were collected by using structured questionnaire form. The questionnaire consisted of 4 parts: 1-demographic data 2-body parameter 3- history taking regarding chronic illness, medication, results of urine analysis and duration of lower urinary tract symptoms if she got any 4- ticked tables regarding filling symptoms, voiding symptoms, number and date of previous cesarean section and rank of procedure after which the symptoms developed. Prior to data collection, verbal consent of each participant was obtained. As a final point 187 women were included in this study. The analysis of data was carried out by using Microsoft excel 2013.

Result

Two hundred sixty-five (265) women were involved in this study, who underwent cesarean section; 187 of them fulfilled the inclusion criteria, with age range from 18 to 40 years, median age was 27 years. There is no specific age group that developed lower urinary tract symptoms, those symptoms were found in 18.2% (34 patients) as illustrated in figure 1, straining and hesitancy were found in 11.76% (4 patients) while stress incontinence was in 35.29% (12 patients) with age range of 30 to 34 years all of patient described it as mild symptom of a little concern , on the other hand frequency was discovered in 23.5% (8 patients) , with age range of 21 to 31 years, regarding urgency , it was found in 35.29% (12 patients) with age ranging from 24-26 years old; urge incontinence in this study went hand by hand with urgency, concerning nocturia was recorded in 14.7% (5 patients) all of them were complaining from frequency and urge incontinence as well , dysuria was found in 26.47 % (9 patients) their age was ranging from 23 to 26 years. None of terminal dribbling, urine retention, prolonged voiding and weak flow were reported. As illustrated in figure 2 and 3.

It has been found significant association between previous 3 cesarean section and lower urinary tract symptoms (LUTS) as showed in table one. In addition to that; body mass index (BMI) of 30-35 found to be significantly associated with LUTS table 2. On the other hand, no statically significant association discovered between age and LUTS table 3.

Regarding those subjects of previous (3) cesarean section neither their BMI, nor their age looks to play a significant role in their LUTS development as illustrated in tables 2:1 and 3:1 respectively.

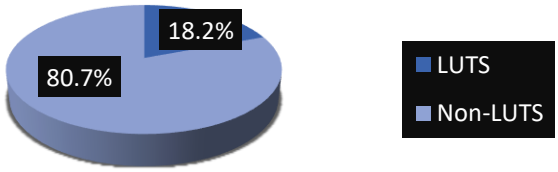

Figure 1.

prevalence of lower urinary tract symptoms (LUTS)

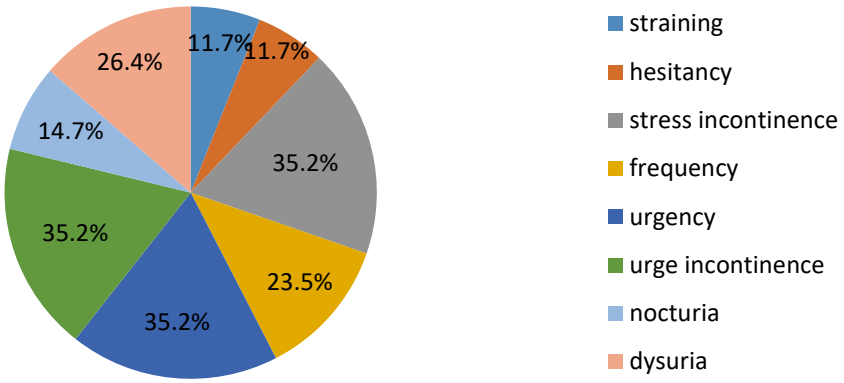

Figure 2.

Prevalence of each symptom of LUT

Table 1.

Association between rank of cesarean section and development of LUTS

Rank of cesarean section	LUTS	NON-LUTS	P-value
1	8	55	0.16
2	12	64	0.48
3	13	22	0.001
4	1	12	0.46
Total	34	153	187

Table 2.

Association between body mass index (BMI) and development of LUTS

BMI	LUTS	NON-LUTS	P-value
20-25	9	39	0.9
26-29	15	94	0.63
> 30	10	20	0.03
Total	34	153	187

Table 2:1.

Distribution of subject of previous 3 cesarean section (3. C.S) according to body mass index (BMI)

BMI	LUTS (3. C.S)	NON-LUTS (3. C.S)	P-value
20-25	3	6	1
26-30	7	14	0.72
> 30	3	2	0.33
Total	13	22	35

Table 3.

Association between age and development of LUTS

Age in years	LUTS	NON-LUTS	P-value
18-30	22	105	0.65
31-40	12	48	0.65
Total	34	153	187

Table 3:1.

Distribution of subject of previous 3 cesarean section (3. C.S) according to age

Age in years	LUTS (3. C.S)	NON-LUTS (3. C.S)	P-value
18-30	8	17	0.44
31-40	5	5	0.44
Total	13	22	35

Discussion

This study tried to discover the possible effect of cesarean section on long term development of chronic lower urinary tract symptoms, it appears that LUTS have generally low incidence among those subjects. A statistically significant association has been found between those of previous [3].

Cesarean section and chronic LUTS development which looks to be independent from BMI and age effect. No such relationship was found for those of previous [4, 8] cesarean section, mostly due to their small number among participants (13 subjects, 6.9%).

The low frequency of these LUTS symptoms has been found as well by Altman D et al. With near values to this study as they found bladder emptying difficulties in 2.5%, urinary urgency in 7.6%.

The slight difference might be resulted from the higher sample size and longer follow up duration [6, 9] Furthermore Ekstrom A et al described comparable results with even lower values [7, 10]. Maserejian N. et al acknowledged that no increased odd of LUTS progression was found for women of single vaginal delivery or cesarean section [8, 11]. Zhang W. et al stated that cesarean section has protective effect against LUTS development [9, 12].

These results might be explained by the fact that cesarean section causes a less effect on pelvic floor muscles and lower urinary tract, through avoiding straining effect of virginal delivery along with possible genitourinary tract laceration and instrumental delivery.

This study went with most of the above researcher findings apart from the possible effect of multiple cesarean sections on LUTS development, namely pervious three, which can be explained by their higher percentage in our study sample (about 20%) as Iraqi families have a tendency to have more children. Furthermore, this study overlooked to address cesarean section indications (elective Vs emergency). Regarding body mass index, no statistical significant association with LUTS development was established. This could be due to small sample size or lack of significant variation in BMI among participants. although Botelho S et al and Van Brummen et al agreed with this study finding but in other cross sectional studies, they found that increase in BMI raise the risk of urinary incontinence in population [3,10-13].

Kokabi R. et al observed un association regarding age and increased frequency of postpartum stress urinary incontinence in both vaginal and caesarean section groups [11, 14].

Conclusion

This study concluded that LUTS have low frequency post caesarean section apart from the possible effect of multiple cesarean sections on LUTS development, namely pervious three. In general cesarean section could be protective against LUTS in comparison to normal vaginal delivery.

Conflict of Interest

The author declare that he has no conflict of interest.

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