Correlations between pelvic support and delivery

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Introduction

The most important functional and anatomic alteration of pelvic statics include uterine, vesical, rectal prolapse, stress urinary incontinence, overactive bladder, and anal incontinence. At least 11% of women will require surgery for pelvic floor disorders in their lifetimes.[1] Many studies suggest that vaginal delivery is associated with pelvic floor disorders. Thus, the route of delivery is a potentially modifiable risk factor. As a result, the role of elective cesarean section (CS) in reducing the risk of pelvic floor disorders is being evaluated considering both the choice of delivery by the physicians and the treatment of late post-partum effects. The understanding of the association between vaginal delivery and pelvic floor disorders is a topic where there are many controversies. However, an increasing number of women are requesting elective cesarean delivery, despite obstetric practice guidelines developed over the past decade aimed at reducing the cesarean delivery rate.[2,3]

Fig. 1 - *Vaginal delivery and caesarean section*

M. Schindl et al. [4] found that birth experience was significantly better in elective caesarean section (CS) compared with vaginal delivery, but worse in women with emergency CS and worst in those with vacuum delivery. They found that 83.5% of women with vaginal delivery would choose the same mode of birth again, 74.3% of women with CS on demand, and 66% of women with medically necessary CS. Only

30.1% of women with emergency CS wanted to receive CS at the next birth. An other point to be considered is the difference between elective caesarean section and CS in labour. V. M. Allen et al.[5] observed that of 18,435 pregnancies, 721 were caesarean deliveries without labour. There were no maternal deaths or transfers for intensive care. There was no difference in wound infection, blood transfusion, or intraoperative trauma. Women undergoing caesarean deliveries without labour were more likely to have puerperal febrile morbidity (relative risk [RR] 2.2; 95% confidence interval [CI] 1.1, 4.5; *P* =.03), but were less likely to have early postpartum haemorrhage (RR 0.6; 95% CI 0.4, 0.9; *P* =.01) compared with women entering spontaneous labour. Subgroup analyses of maternal outcomes in women delivering by spontaneous and assisted vaginal delivery and caesarean delivery in labour were also performed. The highest morbidity was found in the assisted vaginal delivery and caesarean delivery in labour groups.

Another point to be considered regards the perineal effect of the labor which limits the protective role of caesarean section on the pelvic floor.[6-7]

Aim of this study was to evaluate the late perception of patients about their own modality of delivery, according to the early and late effects following birth.

Materials and methods

Between January 1996 and December 2006, 10.125 patients reaching different urogynecological centers were evaluated; these patients were enrolled and classified in the following categories:

- the first one: either one or more vaginal deliveries;
- the second one: either one or more caesarian sections;
- the third category: patients with history of both caesarian section and vaginal delivery.

Women were categorized into one of three groups based on self-reported pregnancy and delivery experience.

Differences between cesarean and vaginally parous groups were identified with a comparison between proportions, χ^2 tests chi-square test. A logistic regression analysis was performed to control for covariates that differed in our two groups despite randomization.

The patients were classified in three groups:

- A-group (12%, n°=1215) were patients having delivery 5 years before;
- B-group (36%, n°=3645) were patients having delivery between 5-20 years before;
- C-group (52%, n°= 5265) were patients having delivery over 20 years before.

Epidemiology of Prolapse and Incontinence Questionnaire (EPIQ) was used and, in addition, other two questions about agreement or disagreement regarding the history of their delivery.[8]

When during the *iter* stress incontinence was observed, urodynamic evaluation was requested.

Pelvic defects were classified according the H.W.S of Baden and Walker (degree 0-1-2-3-4).

Quantification of prolapse was executed according to POP-Q method.

Severity of SUI was valued according Ingleman Sumberg.

Results

In the first group, 70.9% (n°=861) of patients have had spontaneous delivery and 92.9% (n°=800) of these patients agreed with this technique; 29.1% (n°=354) have had an elective caesarian section and 90.1% (n°=319) of these patients agreed with this technique.

In the second group, 78% (n°=2843) of patients have had spontaneous delivery and 84.9% (n°=2416) of these patients approved this technique; 22% (n°=802) have had an elective caesarian section and 89% (n°=714) of these patients agreed with this technique.

In the third group, 85% (n°=4475) of patients have had spontaneous delivery and 77% (n°=3446) of these patients approved this technique; 15% (n°=790) have had an elective caesarian section and 92% (n°=727) of these patients had a good late perception of their kind of delivery.

The most usual reasons of disagreement with vaginal delivery were genital prolapse (30%), genital prolapse associated with UI end or anal incontinence (38%), sexual dysfunctions following vaginal birth (29%) and others (3%).

Furthermore, the most important reason of disagreement with caesarean section was pain in side of section (58%) and or general anaesthesia (40%).

We investigated at the end the reasons which influenced there own choice.

Statistical analysis was performed with chi-squared test, applied to a contingency table (2x2); $p<0.001$ was considered statistically significant.

On comparing the agreement and desagreement about specific modality of delivery between the first group (vaginal delivery and caesarian section 5 years before), a not significant difference was found (vaginal delivery 92.9%, caesarian section 90.1%, p=0.12645), other that a significant difference among the second group (vaginal delivery 84.9%, caesarian section 89%, p=0.00439), and in the third group found too (vaginal delivery 77%, caesarian section 92%, p=0.0001). These results are summarized in the following **table**.

Tab. 1 - *Statistic evaluations*

GROUPS	MODE OF DELIVERY	SATISFACTION AGREE/DESAGREE	χ^2	P VALUE
A: 5 years 12% (n°=1215)	vd: 70.9% (861) cs: 29.1% (354)	92.9%(800)/7.1%(61) 90.1%(319)/9.9%(35)	2.34	0.12645 NS
B: 5-20 years 36% (n°=3645)	vd: 78% (2843) cs: 22% (802)	84.9%(2416)/15.1%(427) 89%(714)/11%(88)	8.11	0.00439
C: >20 years 52% (n°=5265)	vd: 85% (4475) cs: 15% (790)	77%(3446)/23%(1029) 92%(727)/8%(63)	91.23	0.0001

Conclusions

The results of our investigation showed the disorder of pelvic floor depends on main modality of delivery. Anatomic and functional alterations influence the choise of the patients. Agreement or disagreement are interaction with a series of disturbs following the traumatic consequences of the birth, either early or late on pelvic floor.

A woman who delivers an infant vaginally has a risk of a pelvic floor disorder that is higher than a woman who delivers all infants by caesarean delivery. Development of pelvic floor disorders may be dependent on multiple risk factors, where the most important factor is the modality of delivery. Current therapies for pelvic floor disorders are frequently invasive and yield incomplete restoration of function. This makes prevention of these disorders a priority. However, the risks of caesarean section must be evaluated as well, considering that CS is always a operation. It appears reasonable to counsel nulliparous women that prophylactic caesarean delivery would reduce the risk of a pelvic floor disorder by up to 85%. However, because these conditions affect only approximately 40% of women delivered vaginally, 5–7 women would need to deliver only by caesarean delivery to prevent one individual from developing a pelvic floor disorder. [2]

The choice of modality of delivery is very effective for the future of perineum. We must consider in a balance many factors. Vaginal delivery is more natural for a woman; whereas caesarean section is less physiologic. Our opinion consist on making a correct choice of the delivery and when spontaneous, to avoid all the traumatisms, when caesarean, to perform a correct procedure. The option of human being is limited and often only the future could give the right answer.

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