

## Postpartum Sexual Dysfunction: A literature review of risk factors and role of mode of delivery

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### Abstract

Female sexual dysfunction (FSD) is a serious morbidity which could occur postnatally. It is important for different members of staff (GP, midwife, obstetrician, nurse, psychosexual therapist) to be aware of this problem and its various implementations.

Objectives of the review: The main scope of writing this review is to try to categorise the different forms of postpartum sexual dysfunction, and to assess the risk factors involved, with a focus on the different opinions in literature regarding the role of mode of delivery (vaginal or by caesarean section) in alleviating or aggravating the problem.

Search strategy: the National Health Library electronic database was searched, including all resources. Only studies discussing the risk factors of PPFSD after vaginal birth were included. Perineal pain as a complication after episiotomy or tears was differentiated from dyspareunia, and studies on perineal pain after delivery were excluded from the review if they did not discuss the effect of the pain on sexual activity. A meta-analysis was performed to summarise the outcome of the different studies comparing the effect of modes of delivery on PPFSD.

Author's conclusion: episiotomy is an important risk factor for short term PPFSD. However, there is little evidence to support a possible long term effect. Breastfeeding, use of progestogen-only pill and the lack of postpartum sexual health counselling and treatment are other significant risk factors for PPFSD. There is insufficient evidence to advocate a decision of performing a caesarean section on basis of alleviating PPFSD.

### Keywords

Postpartum Female Sexual Dysfunction (PPFSD), dyspareunia

### Introduction

Female sexual dysfunction (FSD) is a serious morbidity which could occur postnatally. It may lead to a variety of physical, psychological, and social adverse effects on the patient. Moreover, the consequent cycle of fear might compound the initial sexual disorder and makes it more difficult to treat. Therefore, early diagnosis and management of the problem become essential to avoid later sequelae on reproductive and sexual life. However, early diagnosis may be challenged by many factors. For example, many patients will be preoccupied by the newborn or embarrassed of talking about sexual matters after delivery, which makes it very important for the midwifery, medical, or other staff to raise the issue during the postnatal care sessions. The staff, on the other hand, might feel uncomfortable to discuss the sexual function with the client, or even may lack the knowledge and skills required for sexual health counselling. In addition to the client-service gap, there are gaps between different sexual service providers.

There are many types of postnatal sexual disorders. These types can differ widely in clinical features and management. Additionally, management of postpartum female sexual dysfunction (PPFSD) can vary with clinician's experience. There are very few randomised clinical trials on treatment for PPFSD, which partly explains the service-service gap in PPFSD management.

In the last three decades there has been an increase in caesarean section rate in the developed world due to many maternal and fetal indications, especially with the significant improvement in surgical and postoperative care. Recently, more attention has been paid to the positive role the caesarean section may play in protecting the female pelvic floor from birth trauma. Perineal birth trauma has been accused by many authors of adversely affecting the female sexual well being.<sup>1</sup> On the other hand there is a growing opinion that the quality of postnatal sexual health is unrelated to mode of delivery.<sup>2</sup> The previous two contradictory statements from literature illustrate the real size of the dilemma when we try to counsel a woman requesting a caesarean section as she is worried about sexual dysfunction after vaginal delivery. This problem might become more difficult to solve if the woman already suffers from a sexual disorder (for example: dyspareunia) in the antenatal or preconception period.

Female sexual dysfunction is impaired or inadequate ability of a woman to engage in or enjoy satisfactory sexual intercourse and orgasm. There are certain natural events in a woman's life when she is at increased risk of developing sexual dysfunction, such as the use of contraception pills, menstruation, postpartum and lactation status, perimenopause, and postmenopause. This could be related to fluctuations in

gonadal hormone secretion, making women more vulnerable to sexual symptoms.<sup>3</sup>

Postpartum female sexual dysfunction (PPFSD) is a common health problem with different incidence reported in literature. Xu et al reported an incidence of 70.6% of PPSFD in the first 3 months after delivery falling off to 55.6% during the 4th-6th months, and reduced to 34.2% at the 6th month, but not reaching pre-pregnancy levels of 7.17%.<sup>2</sup>

For the purpose of this piece of writing, the classification of sexual dysfunction put forth by the American Psychiatric Association APA (1994) in the Diagnostic and Statistical Manual, 4th Edition (DSM-IV) is used to help understand the differing presentations of PPFSD.<sup>4</sup> The main postpartum female sexual dysfunction categories are: sexual desire dysfunction (Hypoactive Sexual Desire Disorder), sexual pain disorders (which includes dyspareunia, vaginismus, and vulvodynia), sexual arousal disorder, and female orgasmic disorder.

To help in understanding this classification better, it is important to refer to the early research done in this field by Masters and Johnson in 1966. One of the most interesting findings of the latter has been the four stage model of sexual response, which they described as the human sexual response cycle.<sup>5</sup> They divided the human sexual response cycle into four stages: Excitement phase (initial arousal), Plateau phase (at full arousal, but not yet at orgasm), Orgasm, and Resolution phase (after orgasm).<sup>5</sup>

Although it is normal to have hypoactive sexual desire (loss of libido) in the first 6-7 weeks after giving birth, this becomes abnormal when the desire for sexual activity is persistently reduced or absent causing distress in the relationship. Sexual desire disorder after delivery may be due to the mother being preoccupied with the neonate or postpartum complications (e.g. infection, pain, and bleeding). It can often be associated with sexual pain disorder as well.

Dyspareunia is the most common type of PPFSD. Solana-Arellano et al (2008) reported an incidence of 41.3% for dyspareunia in the 60-180 days period after giving birth.<sup>1</sup> Postpartum dyspareunia may be due to medical (physical) problems such as a mal-healed perineal or vaginal tear, postpartum infection, cystitis, arthritis, or haemorrhoids, which may get worse after delivery. Moreover, dyspareunia might be caused by psychosocial factors like problems in relationship with the partner, work stress, financial crisis, depression, and anxiety. Dyspareunia, in many cases, can occur as a result of a combination of medical and psychosocial factors. Although, vaginismus is recognised as a different identity, it is usually associated with dyspareunia when it happens in the Puerperium. Vaginismus is the involuntary spasm of the pubococcygeal muscles causing difficult and painful penetration. Sexual desire disorders, Isolated

postpartum sexual arousal and orgasmic disorder are rarely seen in postnatal clinics as when they occur they tend to be part of other PPFSDs.

## Methods:

### *Risk Factors for PPFSD:*

To assess the risk factors for PPFSD a literature review was performed using the National Health Library database including all resources (AMED, BNI, CINAHL, EMBASE, HEALTH BUSINESS ELITE, HMIC, MEDLINE, and PsycINFO). The MESH word/s used was (postpartum sexual dysfunction OR postpartum dyspareunia OR dyspareunia after delivery OR sexual dysfunction after delivery OR sexual problems after delivery). Other different MESH words (using the word sexuality and/or puerperium) were used as well to expand the search possibilities. Only studies discussing the risk factors of PPFSD after vaginal birth were included. Perineal pain as a complication after episiotomy or tears was differentiated from dyspareunia, and studies on perineal pain after delivery were excluded from the review if they did not discuss the effect of the pain on sexual activity.

### *Effect of Mode of Delivery:*

Searching the Cochrane library databases has shown no review related to the subject. However, Hicks et al (2004) have conducted a systematic review of literature focused on mode of delivery and the most commonly reported sexual health outcomes, which included dyspareunia, resumption of intercourse, and self-reported perception of sexual health/sexual problems.<sup>6</sup> In their systematic review they suggested an association between assisted vaginal delivery and some degree of sexual dysfunction but they reported that associations between Caesarean delivery and sexual dysfunction were inconsistent and continued research was necessary to identify modifiable risk factors for sexual problems related to method of delivery.<sup>6</sup> Hicks et al have searched PubMed, CINAHL, and Cochrane databases from January 1990 to September 2003,<sup>6</sup> so we have tried to continue the review by looking into the literature database after that date.

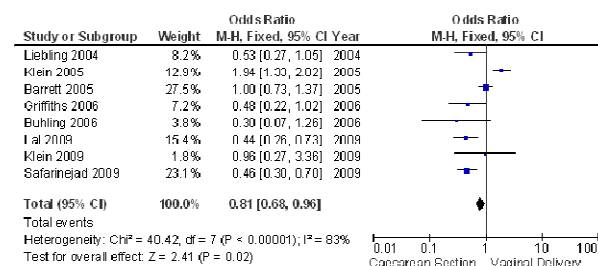
To assess the effect of mode of delivery on PPFSD (Caesarean section vs. vaginal birth), a literature review was performed using the National Health Library database including all resource (AMED, BNI, CINAHL, EMBASE, HEALTH BUSINESS ELITE, HMIC, MEDLINE, and PsycINFO) from October 2003 to January 2010. New MESH words were used, related to comparison between different modes of delivery (Caesarean section, vaginal birth, modes of delivery, sexual dysfunction, sexual disorder, dyspareunia). Additional studies from the reference lists were obtained. Only studies directly compared between caesarean section and vaginal birth in term of assessing the PPFSD were included.

## Results:

### *Risk Factors for PPFSD:*

Nineteen studies and one systematic review were retrieved in the period from 01/01/1984 to 01/01/2010. The Cochrane library database review did not have related articles. It is worth mentioning, however, that there was a Cochrane review on postpartum perineal short term pain, not related to sexual activity. Therefore, it was excluded from this review. The systematic review included in this list of literature studies is the Langer and Minetti review on the complications of episiotomy.<sup>7</sup> Having systematically reviewed four hundred seventy two articles on the Medline database, they concluded that episiotomy, whether medial or mediolateral, appeared to be the cause of more dyspareunia in comparison to spontaneous perineal tears.<sup>7</sup> However, there was no significant difference in the incidence of dyspareunia beyond the three month period after delivery.<sup>7</sup> After the latter review, Solana-Arellano (2008) have showed that complications of episiotomy are an important risk factor for postpartum dyspareunia.<sup>1</sup> They have found that infection, dehiscence, and constricted introitus complicated an episiotomy can cause long-term postpartum dyspareunia.<sup>1</sup> Moreover, Ejegard et al have investigated the long term quality of women's sex life (12-18 months after first episiotomy-assisted delivery).<sup>8</sup> They have reported an adverse effect of episiotomy on women's sex life during the second year post partum.<sup>8</sup>

### *Effect of Mode of Delivery:*



**Graph 1:** Forest plot of comparison between studies. Studies to left of the midline were in favour of less long term PPFSD symptoms with caesarean section compared to vaginal delivery.

Only eight studies fulfilled the criteria. Full papers were retrieved. There was one randomised controlled trial, one prospective cohort study, one cross-sectional study, and the other 5 were performed retrospectively (4 questionnaire surveys, and 1 interview survey). The total pool sample of patients studied included 3476 cases (1185 Caesarean sections vs. 2291 vaginal deliveries). Four studies aimed to compare PPFSD aspects within other variants, such as pelvic floor morbidity, urinary incontinence, and faecal or flatus incontinence.<sup>9, 10, 11, 12</sup> the other four studies purely compared PPFSD variants such as dyspareunia with no other pelvic floor morbidity variants.<sup>13, 14, 15, 16</sup> There has been an agreement

between the studies on the less sexual problems after caesarean section compared to vaginal delivery in the short term after delivery (i.e. up to 3 months postpartum). However, in long term (i.e. more than 12 months postpartum), the outcome was controversial. A meta-analysis was conducted to compare and summarise the long term PPFSD results (Graph 1).

## Discussion:

From the previous results, birth tract trauma is a risk factor which may lead to PPFSD. Therefore it is a logic presumption to think that avoiding pelvic floor injury by performing a caesarean section especially as an elective mode of delivery may alleviate PPFSD. This presumption, if true, will have very significant clinical and financial implications in practice especially with a pre-existing problem of increasing caesarean section rate in many parts of the developed world. So what research evidence in the literature is available to support or overrule this presumption?. The answer to this question becomes more challenging if we know that the British National Sentinel Caesarean Section Audit showed that 50 percent of consultant obstetricians agreed with the statement “elective caesarean section will least affect the mother's future sexual function”.<sup>17</sup>

From the previous meta-analysis, there is little evidence to support that a caesarean section may alleviate long term PPFSD compared to vaginal delivery ( $p=0.02$ ). But, if we examine the studies' subgroups and primary/secondary results in more details, this evidence sounds insufficient.

Griffiths et al (2006) in their questionnaire survey of a 208 women from the Cardiff Birth Survey Database have showed a significant increase in the prevalence of dyspareunia two years after vaginal birth compared to caesarean section.<sup>9</sup> However, their comparison was between vaginal birth and elective caesarean section as they excluded emergency cases.<sup>9</sup> Moreover; they found similar increase in the prevalence of urinary incontinence, incontinence of flatus and subjective depression in the vaginal birth group, which lead us to think whether the dyspareunia was related to these factors and not related to vaginal birth itself. In their paper they did not mention if vaginal birth with no tears or complications was associated with a higher incidence of dyspareunia.

In contrast, Klein et al (2005) concluded that women who had intact perineum after vaginal birth had less dyspareunia than those underwent caesarean section.<sup>12</sup> However, the incidence of dyspareunia in the latter study was higher among women who had an episiotomy with or without forceps.<sup>12</sup> Similar findings were revealed by Buhling et al (2006) and Safarinejad et al (2009), who showed that persistence of dyspareunia longer than 6 months after delivery was the highest after operative vaginal delivery.<sup>15, 16</sup> Buhling et al concluded that the incidence of persistent dyspareunia was similar in the caesarean section and the spontaneous vaginal birth without injury

groups (approximately 3.5%), whereas, Safarinejad et al (2009) have shown that women after elective Caesarean section had the highest Female Sexual Function Index (FSFI) compared to other groups of delivery including the normal vaginal delivery without injury or episiotomy.<sup>15, 16</sup> Although Safarinejad et al (2009) study was robust in many aspects, such as using FSFI and studying the sexual function score for both the women and their partners, I think the main weakness in the study that they included only primiparous women.<sup>16</sup> Therefore, we cannot generalise their findings on women in their second or more pregnancies. Moreover, as a previous caesarean section will increase the operative risk of the successive caesarean sections or will add more risk to the trial of labour if this is opted for in the future, we can expect a higher increased of sexual disorders in the following pregnancies.

From previous discussion we found insufficient evidence to advocate a decision of performing a caesarean section on basis of alleviating PPFSD. This evidence is outweighed by the higher risk of caesarean section including bleeding, infection, anaesthesia risk, deep vein thrombosis, pulmonary embolism, impairment of future fertility, risk of scar dehiscence in next labour, injury to bladder and bowels and risk of fetal laceration.

#### Author's Conclusion:

#### *Risk Factors for PPFSD:*

In this review, there is good evidence to suggest that episiotomy is an important risk factor for short term PPFSD. However, there is little evidence to support a possible long term effect especially if other complications to episiotomy occurred later. Breastfeeding, and the use of progestogen-only pill as contraceptive are other risk factors identified by other studies.<sup>18, 19, 20</sup> This may be caused by the low oestrogen level and the consequent dry vagina.<sup>18, 19, 20</sup> Other risk factors for PPFSD include the lack of postpartum sexual health counselling and treatment.<sup>2, 21</sup>

#### *Effect of Mode of Delivery:*

Postpartum female sexual disorder is a common problem which can be overlooked in practice sometimes. Awareness of the problem makes half of the solution. The other half consists of identifying the risk factors, careful antenatal and postnatal counselling and sexual health assessment, and educating women, their partners, and staff about diagnosis and management of the problem. Episiotomy and severe obstetric traumas are the main risk factors. Restricted use of episiotomy and early management of episiotomy complications can play an important role in preventing persistent PPFSD. There is insufficient evidence to suggest caesarean section as a better mode of delivery in term of preventing or alleviating PPFSD.

#### Competing Interests

None declared

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