

Review Article

Psychological and somatic sequelae of traumatic vaginal delivery: A literature review

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This literature review seeks to examine current knowledge of birth trauma associated with major pelvic floor dysfunction by interpreting and critically appraising existing published material. A search of the literature for peer reviewed journal articles was conducted between September and December 2013 of the following databases: PubMed; Wiley Online; MEDLINE; OvidSP; ScienceDirect; MD Consult Australia; Biomed Central; Sage; Cochrane Database of Systematic Reviews. Unpublished interviews from mothers who attended two tertiary teaching hospitals in Sydney, Australia and international Internet blogs/websites were also utilised. Maternal birth trauma seems to be a common cause of pelvic floor dysfunction. Women who have sustained birth trauma to the levator ani muscle or the anal sphincters are often injured more seriously than generally believed. There often is a substantial latency between trauma and the manifestation of symptoms. Urinary and faecal incontinence, prolapse and sexual dysfunction are commonly seen as too embarrassing to discuss with clinicians, and frequently, new mothers have inaccurate recollections of obstetric procedures that occurred without much explanation or explicit consent. Moreover, somatic trauma may contribute to psychological trauma and post-traumatic stress disorder. The link between somatic and psychological trauma is poorly understood.

Key words: avulsion, birth trauma, levator ani, pelvic floor injury, post-traumatic stress disorder.

Introduction

The aim of this paper is to review the literature on adverse maternal somatic and psychological health sequelae of traumatic vaginal delivery.

Somatic maternal birth trauma has in the past been understood to comprise only perineal trauma.¹ Even vaginal tears have received little attention in clinical research.² Literature indicates that trauma to the levator ani was not unknown in the past,^{3–5} and the advent of modern imaging methods such as MRI⁶ and 3D ultrasound^{7,8} has resulted in a more widespread appreciation of such trauma. Major levator trauma (avulsion) occurs in 13–36% of primiparae delivered vaginally^{9–12} while major injuries to the external anal sphincter (OASIS) seem to be much more prevalent than generally assumed.^{13–15} Over 30% of women who deliver vaginally suffer trauma that is associated with future morbidity such as female pelvic organ prolapse,^{16,17} sexual dysfunction¹⁸ and anal incontinence.¹⁹ Only a small

minority of 3–6% will have OASIS diagnosed in labour ward, and repair is often suboptimal.²⁰ Due to its usually occult nature behind intact vaginal skin, levator trauma is rarely identified and seems difficult to repair even if diagnosed.

While trauma to perineum and anal sphincter has been the subject of clinical research for decades, there is very little data in the world literature on levator ani avulsion. The first clinical diagnosis of levator trauma in delivery suite was documented in 2007, and this case report remains the only such published instance in the literature. Overall, a large proportion of major trauma may be missed clinically. Hence, any research or clinical recommendations that are based on clinical diagnosis alone are of limited value.

Somatic trauma is likely to be associated with psychological trauma, partly because of overlapping risk factors, and partly due to resulting pain, sexual dysfunction, changes in body image and symptoms of pelvic floor dysfunction such as prolapse and urinary or faecal incontinence. The association between somatic and psychological trauma is poorly understood.

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What is ‘Maternal Birth Trauma’?

Due to the very recent nature of pertinent data, ‘pelvic floor trauma’ or ‘maternal birth trauma’ is often inappropriately defined in the contemporary literature. To

date, the term is commonly regarded as synonymous with 'perineal trauma'.

Population studies assert that significant perineal trauma occurs in 0.5–10% of vaginal births^{21–25} and can result in significant morbidity such as pain, dyspareunia, urinary and faecal incontinence. Psychological ramifications of severe perineal trauma are under-researched. Severe perineal tears sometimes lead to secondary surgical procedures to correct rectovaginal, and vesicovaginal fistula (fortunately now rare in the developed world) and urinary/faecal incontinence procedures and may lead to a decision to avoid future pregnancies.²⁶ Primiparity, higher maternal age, instrumental births, longer second stage, larger babies and Asian ethnicity are risk factors.²⁷

However, it is now clear that maternal birth trauma comprises much more than the widespread definition of perineal trauma used by these previous authors.²⁸ One well-defined component of such trauma is damage to the levator ani muscle. This structure is part of the abdominal envelope and a muscular plate surrounding a central v-shaped 'levator hiatus', which encloses the urethra, vagina, and anorectum. During childbirth, the levator ani plays a major role²⁹ and has to distend considerably.^{30,31} Experimental data from muscle physiology suggest that skeletal muscle will not stretch to more than 150% of its initial length without suffering permanent injury.³² Modern imaging methods are now enabling diagnosis of such trauma by revealing detachment of the muscle from its insertion on the os pubis ('avulsion'). Avulsion is much more likely after forceps delivery than after vacuum extraction or normal vaginal delivery^{8,33,34} and is likely to be associated with the length of second stage.³⁵ This suggests that modification of obstetric practice in the general population may help to prevent levator and anal sphincter injury.⁹ Conversely, proposed changes to obstetric management aimed at reducing caesarean section rates^{36,37} have the potential to increase the prevalence of such trauma.

Women's Perceptions of Somatic Trauma

To date, there is minimal qualitative research of women's own perceptions of childbirth-related somatic trauma. This is not surprising, given that most midwives and obstetricians are not aware of the high prevalence of sphincter trauma, and most are unaware of the existence of levator trauma. In addition, such injuries are often not acknowledged as the cause of chronic pelvic floor morbidity.

A study of primiparous women, observed that only 15% reported post-natal dyspareunia and discussed it with a health professional, yet 64% suffered intercourse-related problems at 6 months.³⁸ Findings suggested a lack of awareness by health professionals regarding post-natal sexual problems. The male perspective was not included, and to date, there are no reports on male perceptions of post-natal sexual health, nor has there been any attempt at correlating qualitative data with anatomical evidence of trauma.

Interviewing women on sexuality after childbirth requires skill and strategy.³⁹ Tape recording and verbatim transcription was the preferred method but was problematic when participants did not want their comments recorded. The findings noted that professionals gave insufficient attention to post-partum sexuality or pelvic floor dysfunction. Women said they looked forward to the post-partum check up, but were ultimately disappointed with the limited time for consultation and the general attitude of the health professionals. They had hoped to discuss physical changes after childbirth along with its consequences, such as prolapse, but received casual comments like 'it will get better later on' and heard confusing or offensive comments. The authors surmised that Swedish 'medical experts' do not have adequate knowledge regarding the physical consequences of vaginal childbirth. They proposed that future studies should include the male partners' view of sexual life after a first birth.

Health consequences of pregnancy and childbirth,⁴⁰ as perceived by women and clinicians, frequently include lack of knowledge about post-partum health, emotional lability, sexual dissatisfaction, depression, poor body image, fatigue and incontinence. Paucity of data makes counselling and treating patients difficult. Physical recovery from birth was noted to greatly affect women's sexuality.⁴¹ At 12 months, mothers and fathers reported negative effects to their sexual relationship and it was concluded that new parents have questions that should be addressed by healthcare providers. Dyspareunia at 3 months after childbirth is substantially related to traumatic vaginal delivery.⁴²

Subjective experiences of Australian post-natal primiparous women 3–6 months after childbirth, reported reduced pelvic floor function, especially by those with avulsion of the puborectalis muscle.⁴³ Levator trauma was related to subjective pelvic floor muscle function and vaginal tone, but not with more conventional measures of sexual function.¹⁸

Psychological Trauma

The association between somatic and psychological birth trauma seems to be under-recognised and under-treated by health professionals. The fundamental question is whether childbirth can be recognised as a potentially traumatic event. Birth is typically realised as a benign physiological event, despite huge maternal physiological and neuro-hormonal alterations and breaches of bodily integrity not observed in normal life.

A British study of post-natal women, noted that 20–33% of women reported to be psychologically traumatised. Mode of delivery, forceps procedures and anxiety about complications after vaginal birth were observed as causative factors. Post-natal anxiety disorders appeared more common than depression, with up to 16% of women suffering from panic, phobia, acute adjustment disorder or post-traumatic stress disorder (PTSD) related to the events of birth itself.^{44–46}

Recently in the United Kingdom, National Institute for Clinical Excellence (NICE) Guidelines on PTSD⁴⁷ were introduced to improve diagnosis and management of this condition. The evidence for post-natal PTSD was examined in a British review⁴⁸ and found that up to 10% of women had severe traumatic stress responses to birth and 1% to 2% developed chronic PTSD. The paper notes that 1.5% may appear a low rate but is equivalent to 10 000 women developing PTSD in the United Kingdom every year. Three groups of symptoms were recorded: re-experiencing of the event; avoidance and numbing; increased startle responses, irritability and anger. Post-partum PTSD was noted to have secondary effects on the infant, existing children and the family unit as well as being highly comorbid alongside other psychological problems such as depression, anxiety and substance abuse. There is an obvious effect on the mental health of the woman and associated healthcare costs. Hence, an imperative exists to identify possible risk factors and recognise women who require help.

This is clearly an international issue. The World Health Organization^{49,50} (WHO) lists psychological illness as a significant indirect cause of maternal death in the first year after birth and has accordingly initiated an urgent international call for the integration of maternal mental health into maternal and child healthcare programs.

Research on factors relating to pregnancy, childbirth expectations and delivery noted that PTSD⁵¹ symptoms were more likely in women who had delivered vaginally and received fewer analgesics during labour with stronger reported pain. An Australian review⁵² examining the effectiveness of psychological debriefing after traumatic childbirth, noticed that women during painful births believe that a forceps delivery is more traumatic than an elective caesarean section.

Studies based on larger samples⁵³ reported that the incidence of PTSD ranges from 1% to 24%. Psychosexual problems were more prevalent after birth than during pregnancy. Post-natal sexual health morbidity after vaginal delivery, forceps/ventouse extraction and vaginal tears were very common contributing factors and suggested potentially high levels of unmet needs among new mothers and fathers.³⁸

The quality of intimate relationships regarding first-time mothers revealed marital interactions were strained and worryingly children's behaviour and development were also adversely affected.⁵⁴ WHO defines sexual health as: 'the integration of the somatic, emotional, intellectual and social aspects of sexual being, in ways that are positively enriching and enhance personality, communication and love'.⁵⁵ Mothers who are traumatised by childbirth demonstrate that for some women this state of well-being is not achievable after childbirth, at least not in the short term. While the causes of somatic and psychological trauma are by no means identical, risk factors clearly overlap, and it is likely that somatic trauma contributes to psychological trauma.

The most severe consequence is PTSD and this is far more complicated than post-natal depression because it is

a direct result of a woman's trauma and she may feel compelled to be grateful to the staff that caused this trauma. It is a state of panic – and can include depression, but that is not its primary state. Women have nightmares and flashbacks and often feel unable to go near a hospital or look at pregnant women because it reminds them of their trauma.

The outcomes of misdiagnosis are serious because women are commonly prescribed antidepressants, which make them even less able to cope. Women frequently experience problems in relationships with their baby and partner. An increase in paternal PTSD has also been observed due to being present at a traumatic birth and fear of death of a partner and/or child.⁵⁶

Childbirth is unlike other traumatic events in that it is entered into willingly, broadly anticipated and experienced by the bulk of women in the population. However, it involves sizeable physiological and psychological alterations that if unchecked may result in disruptions of mental health.⁵⁷

Implications for Obstetric and Midwifery Clinical Practice

Antenatal care

Mothers perceive that health professionals do not inform them antenatally of potential pelvic floor damage and they lack education in dealing with injuries much worse than they had anticipated.⁵⁸ Informed consent is compulsory for surgical procedures but labouring women only sign consents if a caesarean section is looming.

Obstetrics faces ethical dilemmas regarding challenging deliveries where morbidity and potentially even mortality are a significant risk. Hence, it is not surprising that antenatal care rarely touches upon the possibility of maternal birth trauma, whether psychological or somatic. However, since the decision in the case *Rogers v Whitaker*,⁵⁹ it may be claimed that a medical practitioner has a duty to warn a patient of a 'material risk' inherent in the treatment proposed.⁶⁰ While caesarean section (C/S) clearly has major disadvantages for mother and baby over an atraumatic normal delivery, women 'at risk' may prefer an elective C/S. Such choices should not be criticised or labelled 'tocophobia', and it seems imprudent to deny such choice or require psychological or psychiatric intervention.

Due to the problematic nature of the topic, the task of implementing guidelines, educating staff and changing health system processes is daunting and will require additional research in different settings nationally and internationally.

Intrapartum care

As mentioned above, there seems to be substantial scope for practice improvement. Intrapartum risk factors are increasingly well defined, with forceps being the most

consistent. Length of the second stage seems to be another potentially modifiable risk factor. There is a great opportunity and need for research into the effect of changes in obstetric management, investigating the role of vacuum extraction versus forceps, episiotomy, perineal protection, obstetric analgesia and birth position. However, it is also evident that clinical outcome measures are inadequate.^{14,15,43} It is evident that much more research is required in this field before clinical recommendations can be made.

Post-natal care

Qualitative research to date reveals a limited understanding of women's post-natal somatic and psychological experiences and subsequent morbidities. Some studies propose that healthcare practitioners may be dismissive of maternal symptoms of somatic pelvic floor dysfunction, possibly due to a lack of knowledge.⁶¹ Other results suggest that most mothers do not have access to competent post-natal medical advice that recognises pelvic floor dysfunction,^{62,63} Clearly, there is a need to learn how to better help women through the difficult first months after childbirth – not the least by acknowledging their concerns and providing diagnostic and therapeutic services when needed. This is unlikely to occur unless health practitioners learn how to diagnose maternal birth trauma properly and realise women's perceptions and needs following traumatic childbirth.

Conclusions

The recent literature documents that sufficient quantitative research has been performed to propose that maternal birth trauma, both psychological and somatic, is a major public health issue, despite receiving scant attention to date. Somatic pelvic floor trauma is more common than previously believed. Major external anal sphincter and levator trauma affects at least 30% of primiparae delivered vaginally, with forceps being the main risk factor. Only a small proportion of anal sphincter trauma is optimally repaired, and major levator trauma is rarely diagnosed and never repaired.

The psychological and somatic effects of such trauma on the post-natal health of women are poorly researched. There is substantial latency between trauma and symptoms, but women do suffer from considerable somatic and psychological consequences of traumatic childbirth. The literature suggests that health professionals commonly lack awareness of these issues.

Modern imaging modalities have greatly simplified the identification of somatic trauma, but there is an urgent need to learn more about women's perceptions of traumatic childbirth and their problems. Qualitative research will play an important function in improving clinical services to post-natal women.

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