

REVIEW ARTICLE

Post-Caesarean Pain on Maternal Quality of Life

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Abstract

Background: Caesarean section (CS) is one of the commonest interventions that women go through during their fertile period. Over the past 30 years rate of CS use has increased by 10-15%. Moreover both acute and chronic pain after the caesarean section may hamper the patient quality of life and newborn's care. Post-partum quality of life is an important concept. It has mingled with an individual's physical health, mental state, independence, social contacts, and personal beliefs. Many quality-of-life scoring tools have been used on patients after CS to measure the post-operative health status and outcome.

Methods: This narrational review was outlined by searching MEDLINE databases such as Google Scholar and PubMed. Selected keywords were searched to identify articles. Randomized Controlled Trials, Observational Studies, Case control and Systemic reviews were included.

Conclusion: Post-caesarean pain management is prioritized by women after a caesarean section.

Key words: Pain, Post-caesarean pain. Post-operative pain, Maternal quality of life

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Introduction

Postoperative pain is a major outcome after any surgical intervention. It is not only a noxious experience but also affects every aspects of life-physical, economical, psychological including mood and capacity to perform daily roles¹. It is neither the result of only inflammatory process nor only result of isolated injury to nerve. Depending upon the operation that has been performed, post-operative pain may originate from the surface of the body, muscles, tendons or bones, peritoneum or viscera². Caesarean section (CS) is one of the popular interventions that women go through during their fertile period. It cannot be generally termed as a mode of child birth, rather it is an operation also. Like other surgeries, this can cause increase mortality, morbidity and other health related issues³. Over the past decades CS rates have been increasing in both developed and developing countries^{4,5}. Worldwide 31.9% caesarean section were performed making it one of the most common surgeries performed^{6,7}. Postpartum pain is associated with care of baby including breastfeeding and forming bond between mother and baby⁸. Moreover acute pain as well as chronic pain after caesarean section may hamper patient quality of life and baby's care. Post-partum quality of life is an extensive and intricate concept. It has mingled with an individual's physical health, mental state, independence, social contacts, and personal beliefs⁹. Any interventions must be assessed by its effect on quality of life from patient's perspective beyond mortality rate and becoming functional¹⁰. Quality of life (QoL) is not very popular to validate any intervention, but must be considered how it can be affected by any procedure. The World Health Organization (WHO) defines QoL as "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"¹¹. It is a multidimensional concept which encompasses both positive and negative effects of life and includes physical, psychological, social and economic domains^{12,13}. Pain after caesarean section is unique in its own way to have effect on woman's health related quality of life and effectiveness of maternal and child health intervention. As pain and child birth by any mode can affect QoL very much, it is necessary to evaluate how pain after caesarean

section can influence.

Incidence and pathophysiology of post caesarean pain

CS is the most common surgical intervention in many countries¹⁴. Over past 30 years rate of CS use has increased 10-15%^{15,16}. Though it is considered to be a lifesaving intervention for both mother and child, but this increasing trend is drawing more attention to adverse outcome¹⁷. Acute post caesarean pain which can be turned into persistent pain is one of the increased risks of maternal morbidity after CS. About 1 in 5 women undergoing CS suffers from acute post-operative pain¹⁸. This acute post- caesarean pain is an important predictor of developing chronic pain¹⁹. There is 2.5-3 fold increased risk for developing chronic pain for woman with severe pain²⁰. But it is a matter of surprise that the incidence of persistent pain after CS is almost 10-times lower than persistent pain after similar invasive surgical procedures like as total abdominal hysterectomy or inguinal herniorrhaphy^{21,22}. Many explanations have been suggested for this discrepancy. Surgical factor like shorter operation duration, higher rate of spinal anaesthesia and less peripheral nerve injury or positive psychological drive like responsibility for caring for a newborn may be the factors behind these rates^{23,24}.

Moreover, Oxytocin, which is released during parturition and lactation in large amount, has been proposed a possible factor for lower incidence of chronic pain^{25,26}. But still, increasing number of caesarean section in recent years have made a small prevalence of post caesarean pain a significant burden for a large number of healthy woman worldwide^{27,28}.

Quality of life after caesarean section delivery:

The term quality of life and more specifically, health related quality of life refer to the physical, psychological and social domains of health, than are influenced by a person's experiences, beliefs, expectations and perceptions (which we commonly termed as 'perception of health')²⁹. Each domain of health has many component such as – symptoms, ability to function and disability. Translating the various domains and components of health into a quantitative value, that indicates quality of life is a

complex task³⁰. With increased rate of caesarean section and its effects on patients life post-operatively, it is necessary to observe patients recovery from psychological, social and clinical aspects. Pain itself has physical, emotional, social and economic aspects. After caesarean section, suffering from post-operative pain can affect maternal quality of life immensely.

Many quality of life scoring tools have been used on patients after CS to measure the post-operative health status and scoring outcome. But pain due to caesarean procedure and its effect is not widely studied. Maternal post-partum quality of life questionnaire is an important tool on this regard³¹. But still, it is not solely for woman under caesarean section. Some studies used SF-36 to assess maternal quality of life³². VAS score and NRS was used to assess post-operative pain^{33,34}. It is now a need to develop a tool that can assess effect of pain due to caesarean section in women at their postoperative period.

Physical health:

Postpartum period is a critical transition which may interferes with woman's ability to take care of child and quality of life herself. Post caesarean patients are unique as they are not only in their post-partum but also in their post-operative days. So, any adverse outcome like "pain" can affect their postpartum and post-operative QoL.

Several studies showed woman experience moderate to severe pain in their first post caesarean day. More pain than expectation was experienced by 18% woman after this intervention³⁵. At 4th postoperative day, 73% woman mentioned of wound pain³⁶. High pain scores during the first postoperative day are a risk factor for chronic pain³⁷. This pain can be originated from various sources. Scar tenderness, abdominal pain, low back pain can be experienced by post caesarean patients. Even they can be originated from different locations^{38,39}. 40%, 27% and 22% woman complained pain at different locations at three, six and twelve months²⁰. At three month, 56% woman reported pain at surgical site where this rate was 32% and 25% and was experienced at more than one site³⁸. Abdomen was most commonly reported site at third month. At 12 months this site was changed into low back or shifting to back³⁹. Low back pain is another common complain during pregnancy

and after cs. LBP may persists in 5-40% of patients even after 6 months of delivery⁴⁰. The etiology is poorly understood. Many obstetricians believe that spinal anesthesia is responsible for LBP⁴¹.

Pain Assessment in Relation to Breastfeeding and Infant Care. In a study, Sixty-two percent of the women said post-operative pain affects their ability to take care of new born as well as initiate breast feeding the babies. These women also reported their pain in VAS score greater or equal to 4⁴². Watt and colleagues concluded that women undergoing cesarean delivery were less likely to initiate breastfeeding within 24 h but more likely to cease breastfeeding and start formula feeding⁴³. These women specifically referred to post-caesarean pain as a contributing factor to early cessation of breastfeeding.

Psychological Health:

Maternal mental health is one of the major factors that can affect post caesarean quality of life. Worldwide 7.6-39% mothers are experiencing postpartum depression⁴⁴. A growing body of literature suggest post caesarean pain as one of the main factors for this. 85% women who suffered from chronic pain may develop depression in later life⁴⁵. As depression is associated with many comorbidities, this coexistence can be resulted in many adverse effects. It is more alarming that 28% woman experienced severe or very severe pain after 1 year. Among them 20% indicated that pain interfered with their daily enjoyment of life⁴⁶. There was significant difference at three time period-3 month, 6 month and 1 year, between two groups- pain and no pain in terms of physical activity, mood, social relationship and entertainment⁴⁷. Fatigue along with sleeping problems related to post-operative pain was also reported⁴⁸. Severe acute pain was considered as a strong predictor for post-operative depression⁴⁹.

Social and economic factors:

Adaptation into motherhood demands reprioritization and reshape mothers social relationship and network⁵⁰. In spite of evidence of necessity of social support on maternal wellbeing especially psychological it is not commonly prioritized⁵¹. In some cultures, mothers and mother in law is responsible for assisting neonatal care. But increased

urbanization have weakened these traditional support mechanism⁵². Factors such as decreased traditional assistance and a growing number of working mothers can contribute to feelings of isolation⁵³. A study has identified six barriers for social support at postpartum period- Availability of trustworthy childcare, Cost of childcare, Demands of infant care, Changing priorities, Transience and Availability of family⁵⁴. These scenario is not less in caesarean section. Rather, post-operative effects like acute pain can make maternal wellbeing more vulnerable. But no study was found exploring the impact of post caesarean pain on social domain of new mothers.

Post caesarean pain can affect economic domain of maternal quality of life. Significant association between average pain score and duration of hospital stay was found by a study; where one point increase in NRS pain scale increased almost a day of hospital stay⁵⁵. This increase can be associated with increased hospital cost approximately \$3500^{56,57}. Thus adequate pain management is also important for cost saving benefits also.

Post-caesarean pain management:

Post-caesarean pain management is prioritized by woman after caesarean section⁵⁸. Potential effects of analgesics on fetus and breast milk, have made post-caesarean analgesic management crucial and unique. So, guidelines and recommendations must be followed for proper management of acute pain and its development into chronic pain. A stepwise multimodal approach is necessary to manage post-caesarean acute pain⁵⁹. A number of intraoperative interventions are suggested to enhance analgesia after CS⁶⁰. American Society of Anesthesiologists and the American Pain society recommended recommended neraxial anesthesia (spinal, epidural, or combined spinal epidural techniques) as preferred modality^{61,62}. These are recommended as intravenous opioids may prone to risk of development of respiratory depression⁶³. Lipophilic short acting opioids like Fentanyl may optimize quality of anesthesia, whereas long acting hydrophilic opioids like morphine has longer duration of action. On the other hand, intrathecal Morphine provides additional time for effective analgesia, but side effects like nausea, vomiting and purities may increase with escalation of doses^{64,65}. Parenteral or

oral opioids should be reserved for management of breakthrough pain after operative procedure in spite of experiencing pain after using combination of neraxial opioids and nonopioid adjuncts⁶⁶.

Supplemental non opioid medication is necessary for providing quality postoperative analgesia and lowering requirement of oral or parenteral opioids. Non-steroidal anti-inflammatory drugs are essential component for multimodal anesthesia^{67,68}. They have 30-50% opioid-sparing effects. So, they can reduce opioid related side effects and enhance recovery^{69,70}. Moreover, perioperative use of NSAIDs can diminish post- caesarean pain⁷¹.

Acetaminophen, in combination with opioids or NSAIDs have additional synergistic effects⁷². It has 20% opioid-sparing effects in perioperative settings⁷³. Though opuioid+acetaminophen is prescribed for breakthrough pain, but routinely used acetaminophen with on demand oral opioids is recommended⁷². Acetaminophen can provide effective analgesic effect with less adverse effect and effect of breast milk transfer. So, it is an important step of multimodal analgesia regimen⁷⁴. There was insufficient evidence regarding intravenous usage of routinely administered acetaminophen or NSAIDs, rather oral use is suggested⁷⁵.

Dexamethasone, a glucocorticoid, have analgesics, antiemetic properties and antiemetic effects. Single dose of dexamethasone may be effective for post-operative pain control after general anesthesia, but there is lack of evidence for adverse effects on mothers and neonatal safety profile⁷⁶. Gabapentin is another pharmacological intervention which is not recommended for routinely use after CS but has shown significantly decrease in opioid induced vomiting and pruritus⁷⁷.

Woman undergoing caesarean section can be benefitted by wound infiltration and transverse abdominis plane block. Pre and post incisional use of single dose local anesthetic infiltration can provide better analgesia after caesarean section⁷⁸. On the other hand TAP blocks offer opioid sparing effects and minimize analgesic requirements after caesarean delivery⁷⁹.

Conclusion

Pain is an important factor which leads to physical and psychological alteration. Among various factors, post-caesarean pain needs medical attention, but remains underestimated. Having considering effect of pain on maternal quality of life, management of this should be appropriate.

Declaration

Ethics approval:

Not applicable

Author contributions:

Conception and development of the idea:

MP, AKMA, MSI

Writing - Original Draft Preparation:

MP, MMA, MMHA

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