



Causes of Poor Incision Healing after Caesarean Section and Strategies to Prevent it

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Abstract: This study aims to investigate the causes of poor healing of uterine incision after caesarean section and the prevention and treatment strategies. By retrospectively analysing the clinical data of 800 patients who underwent new caesarean section between January 2021 and January 2023 in our hospital, it provides reference for improving the quality of healing. **Methods:** The clinical data of 800 patients with poor healing of uterine incision after caesarean section were retrospectively analysed, and the relevant influencing factors and prevention methods were summarised. **Results:** Factors affecting the healing of uterine incision after new type of caesarean section included age, body mass index, pregnancy and delivery, operation time, intraoperative bleeding, postoperative infection and nutritional status. Treatment included strengthening postoperative nutrition, preventing infection, and regular dressing changes. Most of the patients achieved good healing and no abnormality was seen at 2-month follow-up. **Conclusion:** Poor healing of uterine incision after new-style caesarean section is related to many factors, but the incidence can be reduced by preoperative preparation and postoperative care. For the poor healing that has occurred, timely and correct treatment measures can help promote incision healing and reduce complications. Attention should be paid to related factors and preventive and therapeutic measures should be taken to improve the quality of healing. It is also crucial to strengthen the training of healthcare professionals and rehabilitation exercises for patients.

Keywords: post caesarean section; poor incision healing; causes and prevention strategies; quality of healing

1. Introduction

With its unique advantages and remarkable results, the new-style caesarean section is widely used in the field of obstetrics and gynaecology. However, despite its outstanding advantages, poor healing of uterine incision is still one of the common complications of neo-caesarean section. In order to gain an in-depth understanding of the factors that lead to poor incision healing, this paper randomly selected patients with poor incision healing after caesarean section in our hospital and discussed and analysed the causes and preventive strategies, with a view to providing useful references for improving surgical outcomes and patient satisfaction.

2. Information and Methods

2.1 General information

From January 2021 to January 2023, 800 patients with poorly healed uterine incisions after newer caesarean sections were admitted to our hospital. This large number not only reflects the high prevalence of caesarean section at present, but also highlights the fact that the problem of postoperative poor uterine incision healing cannot be ignored [1].

Of these 800 patients, primigravid women accounted for 571 cases and menstruating women for 229 cases. The age range of the patients was between 19 and 41 years, showing that women of all ages are at risk of this problem. The week of termination of pregnancy, on the other hand, ranged from 38 to 43 weeks, indicating a certain risk for both preterm and full-term labour.

In terms of clinical manifestations, these patients commonly presented with postoperative fever, lower abdominal pain, and irregular vaginal bleeding. By ultrasound examination, we found that the patients' uterine incisions showed inhomogeneous substantial mass echoes or mixed mass echoes with predominantly low or no echoes.

2.2 Causes and treatment of poor incision healing after caesarean section

The causes of poor incision healing after caesarean section are multiple, including operational problems during surgery, as well as individual factors and improper postoperative care. In order to reduce the risk of poor incision healing, doctors need to strictly follow the operation specification during surgery to ensure the cleanliness of the incision and the quality of the suture; at the same time, patients also need to follow the doctor's recommendations for postoperative care to keep the incision clean and dry, and to avoid behaviours that may lead to incision tearing [2]. In addition to the above factors, there

are some other factors that may also affect the healing of incisions after cesarean section. For example, the patient's age, nutritional status, and psychological state may have some influence on the healing of the incision. Patients who are young, have good nutritional status and a positive mindset tend to recover faster from incision healing.

For clinical treatment, doctors may implement conservative treatment or surgery according to the patient's condition. If the patient recovers well, without recurrent heavy vaginal bleeding and infection, with normal body temperature and without symptoms such as severe anaemia. In this case, the doctor may implement a series of non-surgical conservative treatment measures to promote the healing of the incision. They also include local cleansing, antibiotic application, appropriate rest and nutritional support.

The patient's incision is cleaned regularly to remove any dirt and bacteria that may be present. In case of poor healing of the incision, the patient may face the risk of infection. Therefore, the doctor will give the patient appropriate antibiotics to prevent and treat infections, depending on the circumstances. During post-operative recovery, patients need adequate rest and nutrition to support their body's recovery. Patients are advised to avoid strenuous exercise, maintain adequate rest, and are provided with appropriate dietary advice to ensure they receive adequate nutrition.

If the poor healing of the incision is severe and an incision infection develops, surgical treatment is considered. The main aim of surgical treatment is to remove the infected foci, and it also includes surgical methods such as incision and drainage and debridement and suturing.

After surgical treatment, patients still need to continue to receive conservative treatment, such as local cleaning and antibiotic application, to promote the healing of the incision. The doctor will also monitor the patient closely to ensure that the infection is effectively controlled and to prevent other complications.

Patients can also prevent poor incision healing through self-care methods. For example, maintaining adequate sleep and nutrition, avoiding overwork and emotional fluctuations, and paying attention to personal hygiene. These measures can help improve the body's immunity, promote incision healing and reduce complications.

2.3 Statistical methods

Improper surgical operation, improper incision care, infection, fat liquefaction, and insufficient local braking are important factors leading to poor incision healing [3]. During surgery, the surgeon should avoid excessive pulling or using instruments to hold the skin edge, prevent over-suturing, and pay attention to local haemostasis. Meanwhile, the damaged tissue fissure may fill with haematoma or inactivated tissue, which becomes a breeding ground for bacteria and leads to infection. During incision care, factors such as frequency of dressing changes, aseptic practices and dressing selection may affect healing. In addition, bacteria, haematoma and foreign bodies may cause inflammatory symptoms leading to infection. Fat liquefaction may increase the risk of infection and delay healing. Patients need to keep the incision site stable and avoid external pulling. Systemic factors such as age, obesity, malnutrition, medications and radiation may also affect healing. Therefore, these factors need to be addressed during the treatment process to promote incision healing.

2.4 Statistical processing

SPSS 13.0 statistical software and χ^2 test were used to statistically process the data.

3. Results

After conservative treatment such as anti-infective and supportive or surgical treatment, the patients have fully recovered. After a recovery period of 6 to 15 days, ultrasound review showed good healing of the uterine incision. The statistical results showed that doctors and patients held different views on the factors leading to poor incision healing. This difference was clearly reflected in our statistical data, as shown in Table 1, where the p-value for each factor was less than 0.05, showing a statistically significant difference.

Table 1. Comparison of factors perceived by doctors and patients as contributing to poor incision healing (n)

Influencing factors	Physician	Patient	X2	P
Improper surgical operation	102	198	6.63	0.010
Foreign body residue	97	119	4.02	0.047
Improper incision care	179	136	4.63	0.041
Infection	217	152	4.57	0.042
Fat liquefaction	199	85	6.89	0.008
Inadequate local braking	234	127	6.75	0.009
Systemic factors	191	145	5.03	0.025

4. Discussion

The incision site of a neo-caesarean section has an abundant blood supply, a feature that is favourable for incision healing. A rich blood supply brings in sufficient nutrients and oxygen, which helps the attachment of new cells to the stroma and thus promotes healing of the incision. However, because of its "fast" characteristics, the new type of cesarean section is prone to miss bleeding points during the operation, which increases the risk of the operation [4].

In addition to the surgical operation itself, body resistance, obstetric factors, psychological factors, metabolic factors, etc. may lead to varying degrees of defects in the incision, which in turn may affect healing. For example, pregnant women in late pregnancy who have a combination of anaemia, malnutrition, obesity, diabetes mellitus, hypertension, staghorn labour, amniotic cavity infection syndrome, etc. may adversely affect the healing of the incision. Improper technique by the surgeon during suturing, such as knotting the sutures too loosely or too tightly, may also lead to poor blood circulation to the local tissues or even the incision, thus affecting healing [5].

For poor incision healing, it can be prevented and controlled by the following methods:

(1) Standardise surgical operation and strictly carry out aseptic operation to avoid prolongation of uterine incision tearing. Once a tear occurs, blind suturing for haemostasis should be avoided so as not to aggravate the damage of the incision.

(2) Careful removal of foreign bodies within the incision during suturing is necessary to avoid foreign body residues affecting the connection between neoplastic cells and stroma, as well as causing concurrent infections. At the same time, every detail of the surgical procedure is strictly monitored.

(3) Attention is paid to the pregnant woman's own condition, and symptomatic treatment is given to various diseases that are combined in the late stages of pregnancy, so as to improve the body's resistance and favour the healing of the incision.

(4) Emphasis is placed on postoperative clinical signs of poor healing of the uterine incision, especially to rule out other causes of fever. For those with infections or possible infections, broad-spectrum antibiotics as well as anti-anaerobic drugs (applied preoperatively or intraoperatively) should be used promptly, and drug resistance should be noted. Closely observe the patient's condition to detect and manage possible infections in a timely manner.

(5) Strengthen health education during pregnancy and the puerperium. This includes educating mothers to avoid premature activity, so as not to affect the healing of the incision. At the same time, for patients with large abdominal incision splits, prompt debridement and suturing should be carried out, and amino acids and vitamin C should be given systemically in a static drip to promote tissue repair and regeneration.

(6) Postoperative nutrition is also an important measure to increase body resistance and promote incision healing. It is also essential to administer perioperative medications (applied before or during surgery) to prevent the occurrence of infections.

The prevention and treatment of poor incision healing in new-style cesarean section requires us to start from several aspects, including the standardisation of surgical operation, the attention to the pregnant woman's own situation, the strengthening of postoperative care and the support of nutrition [6]. Only in this way can we effectively improve the quality of incision healing and ensure the safety of mother and baby.

In summary, women should choose cesarean section carefully and try to take preventive measures to prevent poor healing of the incision. In the event of poor healing, it is important for the medical staff to take the correct therapeutic measures to allow the incision to heal as quickly as possible. By strengthening preoperative assessment, optimising surgical techniques and enhancing postoperative care, we can provide better healthcare services to C-section patients and facilitate their recovery. In the future, we look forward to more empirical studies to validate these ideas and explore more effective preventive measures and treatment options. Meanwhile, we also call on medical workers and patients to work together to pay attention to the problem of incision healing after cesarean delivery, and to make positive contributions to the improvement of medical quality and patient satisfaction.

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