Incomplete flexible sigmoidoscopy insertion after cesarean section

Cesarean section (C/S) is one of the most commonly undertaken operations — no fewer than 18.5 million C/S are annually performed worldwide.\(^1\) However, the high rate of C/S births has become a global public health concern. Taiwan has one of the highest rates of C/S births, comprising approximately 33% of all births over the last 10 years.\(^2\)

In this issue, a team of investigators from Kaohsiung Veterans General Hospital tried to identify the risk factors of incomplete flexible sigmoidoscopy. They found that only prior pelvic surgery was an independent risk factor for incomplete flexible sigmoidoscopy insertions, with a high odds ratio (OR) of 3.54, based on the fact that both C/S and hysterectomy were main components of the prior surgery. They concluded that both hysterectomy and C/S, individually, can predict incomplete flexible sigmoidoscopy among individuals with prior abdominal or pelvic surgery.\(^3\) We congratulate the authors for their successful work, which has been published in this issue. However, are their conclusions realities or only a myth? Some questions and issues require our attention.

First, in terms of the role of C/S in the current study,\(^3\) no statistically significant difference was noted between incomplete insertion and complete insertion (24% vs. 25%, \(p = 1.00\)). We wonder why the authors would conclude that C/S contributed to one of the two main causes of incomplete flexible sigmoidoscopy insertions. A possible reason was that there were too many C/S patients (\(n = 26\)). However, by enrolling these women with a history of C/S, the significantly unbalanced sex distribution that resulted might have led to a palpable selection bias (male vs. female, 39% vs. 61%). One study found that female sex was significantly related to a limited flexible sigmoidoscopy examination \([OR = 1.83, 95\%\, \text{confidence interval} (CI) = 1.60–2.10]\), and female sex predicting a limited examination was more powerful than was previous pelvic or abdominal surgery \([OR = 1.29, 95\%\, \text{CI} = 1.12–1.49]\).\(^4\) C/S was assumed to be a predictor of incomplete flexible sigmoidoscopy insertion in the current study. This observation might be biased, and it would have been better not to enroll women with a previous C/S in the current study. After excluding those patients with previous C/S, a revised total of 80 patients would be more appropriate study representatives, because of the improved sex distribution (male vs. female, 51% vs. 49%). In addition, the results might be more convincing, and less prone to second guessing.

Second, the definition of abdominal surgery or pelvic surgery is not clear in the current study, which may have resulted in misclassification. For example, appendectomy was a main contributor to abdominal surgery cases in the current study (38/56, 68%). However, it is arguable whether appendectomy actually qualifies as abdominal surgery, because the incision line is often not a midline incision. The appendix is located in the right lower quadrant area of the abdomen, and it is reasonable to believe that surgery of the appendix might not affect the flexible sigmoidoscopy examination, since there is no role for flexible sigmoidoscopy of the ascending colon. Moreover, the authors failed to separate ruptured from unruptured appendicitis. The higher risk of peritonitis in patients with ruptured appendicitis contributed to the more frequent postoperative adhesion, which might result in a limited flexible sigmoidoscopy examination.

Finally, it is not easy to assess the long-term effects of C/S or hysterectomy.\(^5,6\) For example, the result from the recent CORONIS trial, which was well conceived, well managed, and had an unprecedented focus on clinical practice, was also criticized.\(^1\) This can be attributed to the fact that many factors can confound the final interpretation of the results, including surgical procedure, the skill and competence of the surgeon, aseptic precautions taken, the focus put on proper hemostasis, and the physical state of the pregnant women. Moreover, variations in the surgical procedure, including whether a midline vertical incision or Pfannenstiel incision of the abdominal wall is used, whether a blunt or sharp abdominal entry is used, \(in\,\text{ situ}\) uterine repair or extraabdominal uterine repair, use of a synthetic suture or a biological suture, single-layer or double-layer uterotomy closure, closure or non-closure of the peritoneum, creation of a bladder flap, closure of the subcutaneous fat, and the method used for skin suturing — all of which might have substantial effects on the outcomes tested.\(^1,7\)

The immediate risks of C/S, such as fever, pain, postpartum hemorrhage, damage to the bladder or ureters, and thromboembolic disease, are well-known.\(^8\) However, the rate of C/S in Taiwan is still high, even though the Bureau of National Health Insurance raised the payment for vaginal delivery and also increased the insured’s co-payment for elective C/S. However, a study reported that financial incentives were not the main consideration for both the demand and supply of C/S procedures.\(^2\) Therefore, it is believed that to encourage more vaginal deliveries and lower the C/S rate, the authorities should consider...
mechanisms other than adjusting the payment or changing the co-payment. Among these policies, increased education could be exceedingly important. For example, long-term clinical and obstetric problems that may arise after C/S births are rarely discussed. Accordingly, the potential for chronic pain, infertility, bowel obstruction, abnormal placentation and its consequences, uterine rupture, and the risk of incomplete flexible sigmoidoscopy insertion should be emphasized. The title of this study — not only hysterectomy but also C/S can predict incomplete flexible sigmoidoscopy among individuals with prior abdominal or pelvic surgery — might become an attractive issue to the public. To emphasize the possible negative consequences of C/S, another title — declining fertility and the use of cesarean delivery: evidence from a population-based study in Taiwan —, as previously published, might improve our efforts to lower the C/S rate.

Conflicts of interest

The authors declare that there are no conflicts of interest related to the subject matter or materials discussed in this article.

References


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