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Rehabilitation Improved After Caesarean Sections at the University Hospital of Owendo (Gabon)

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Abstract

Introduction: In the West, the cesarean section has, to a large extent, a pardon improved after surgery which is not yet the case in Gabon. Our goal is to demonstrate the interest of a RAAC from a Protocol at the caesareans in our context.

Patients and methods: Prospective and descriptive study conducted from June 1 to August 31, 2016, at the Owendo CHU. Scheduled and emergency Caesarean sections have been included. The Protocol included an anesthesia, multimodal analgesia by combined abdominal blocks to painkillers intravenously, a resumption of food started at the second time post-surgery. An early Sunrise and removal of the urinary catheter in SSPI after sunrise to the engine block. Removal of the venous channel 24 hours post-surgery. The intensity of the pain, the time of resumption of transit, digestive complications and the satisfaction of the parturient was appreciated.

Results: Fifty-one patients were benefited. 64.7% had been taken into emergency. 88% had no pain (EVS=0) at rest at the 6th time and 61% at the 12th time post-surgery. Mobilization, 39% had an EVS=0 and 25% an EVS=1 to the 12-hour post-surgery. The average recovery of the gas was 12 ± 7.4 hours. Found complications were nausea (8%), vomiting (6%). Satisfaction was total at 68.6% of patients.

Conclusion: In Gabon, the rehabilitation at the course is applicable. The interest lies in quick empowerment and reduction of hospital stay.

Keywords: Caesarean; Rehabilitation; Analgesia

Abbreviation

CHU: Center Hospital University; CHUO: Center Hospital University of Owendo; SSPI: Post-interventional Surveillance Room; EVS: Simple Verbal Scale (for pain); TAP Block: Transverse Abdominal Plane Block; NSAIDs: Non-Steroidal Anti-Inflammatory Drug

Introduction

Immediate post-operative rehabilitation in patients after a C-section is aimed to quickly empower them to focus on their newborns. It also allows an early return home, and so to reduce the costs and length of stay in hospital [1]. In developed countries, the cesarean section reached 20% to 25% of deliveries and is constantly increasing as in France [1]. These patients benefit, to a large extent, from immediate postoperative rehabilitation [1,2]. In Gabon in 2012 at the University Hospital of Libreville (national reference), they accounted for 10% of all the interventions and the concept of the postoperative rehabilitation has not yet clearly established [3-5].

Moreover, in daily practice, only empirical design based on the haunting of complications of postoperative ileus is still topical in the majority of hospitals. The applicable rule is, therefore, a formal prohibition on all food recovery before any resumption of the intestinal transit. Thus after spinal anesthesia, the early rise before the first 24 hours is proscribed because of the fear of the risk of occurrence of post-dural breccia headache. Also, the patient remains probed and infused for at least 72 hours, limiting its autonomy and the ability to take care of her child. The purpose of this study is to demonstrate from a protocol the value of improved rehabilitation after cesarean section in our context.

Patients and Methods

This was a prospective and descriptive study carried out over a period of 3 months, from June 1 to August 31, 2016. The gynecology-obstetrics and anesthesia-reanimation departments of Owendo CHU provided the framework for the study. Scheduled cesarean sections, those made in an emergency (time of realization that can wait 10 to 30 minutes) and only under anesthesia, were included. The criteria for non-inclusion were caesareans performed in absolute urgency, those performed under general anesthesia, caesareans between 24:00 and 4:00 in the morning, and the patients' refusal to participate in the study. The Protocol included in the operating theater anesthesia with bupivacaine (0.5%) 10 mg combined with Fentanyl 25 µg. Spinal needles of 26 and 27 gauges with an introducer were used.

In SSPI, multimodal analgesia was initiated by the realization of the abdominal wall blocks (ilio inguinal ilio hypogastric alone or associated with the para-umbilical block in the median incisions, or the TAP Block) associated with systemic analgesia. The abdominal block was made blind after anatomical location by the injection of bupivacaine 0.25% (2.5 mg/ml) at the rate of 10 ml per puncture site. Only locoplex needles of 50 mm were used for these blocks. Systemic analgesia consisted of the Paracetamol 1 g, of the ketoprofen 100 mg (to be diluted in 100 ml of 0.9% SS) infusion of 15 to 30 minutes. Nefopam 20 mg there was associated with contraindications to ketoprofen and if the postoperative pain was ≥ 2 on the Simple Verbal Scale (EVS).

Bladder catheterization followed by gastric stimulation with chewing gum was initiated as soon as the engine block was raised and sympathetic in the Post-Interventional Surveillance Room (SSPI). At the maternity ward, analgesia was continued with Paracetamol 1 g every 6 hours and ketoprofen 100 mg every 12 hours. Oral feeding was proposed at the second time post-surgery after the release of the SSPI (a glass of water, yogurt, and orange juice). The third time the patient is fed gruel of potato-based or vermicelli and soup at the fifth hour, a fish broth was proposed. Mobilization was mandatory at the fifth time post-surgery. At the 24th hour post-operative: An oral relay was done with paracetamol tablet of 1g every 6 hours associated with ketoprofen 100 mg every 12 hours. The peripheral venous path was also withdrawn unless necessary. This relay was for 3 days.

Patients were questioned and examined upon arrival in the maternity unit, and then every 6 hours: to assess the effectiveness of analgesia (using the EVS) and then looking for a recovery of the intestinal peristalsis by some gurgling (auscultation of the abdomen), by the emission of gases and stools. It was also investigated complications related to the blocks of the abdominal wall (hematoma, infections puncture sites etc.), related to the removal of the bladder catheter (bladder globe), related to the resumption of early feeding (nausea, vomiting, abdominal bloating), and related to early sunrise (positional headaches). Patient satisfaction was assessed by the response: not at all, moderately or totally according to the patient's judgment. The first dressing was done at the exit, on the third-day post-surgery. The data analysis was made from the software version 17 SSPS. The results are given in number and percentage for the qualitative and quantitative variables.

Results

During the study period, 111 patients had a C-section out of a total of 546 deliveries, or 20% of deliveries. Among the 51 patients (46% of cases) were included. The average age was 29.51 ± 57 years. Extremes were 16 years and 41 years. More than half of the parturient: 64.7% (n=33) never had a C-section before. Most frequent Cesarean indications were the fetal macrosomia (25.5%) followed by acute fetal distress with 21.6% of cases. Thirty-three patients (64.7%) had been caesarized in a relative emergency; while for eighteen patients (35.3%), it was scheduled C-section. Ilio inguinal ilio hypogastric block was the most common in patients, followed by TAP Block (Figure 1). Eighty-eight percent of patients (n=45) had an EVS at 0 to rest within the first 6 hours post-surgery, 69% at the 48th time (n=35), and 90% to the 72nd hour post-operative (n=46). An EVS>2 was noted from the 12th hour postoperative and this moderate to severe pain persisted until the forty-eighth postoperative in 6% of patients (n=3) (Figure 2).

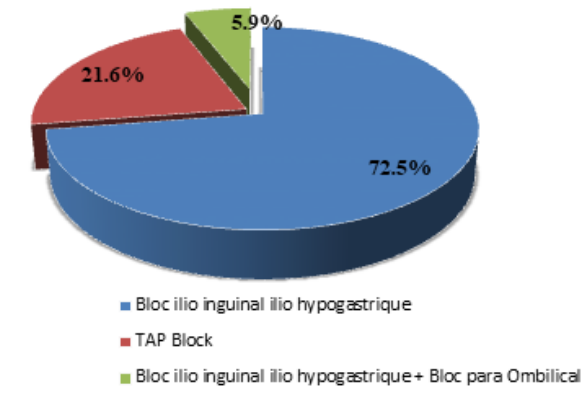

Figure 1: Distribution of painkillers blocks of the abdominal wall according to the percentages of patients.

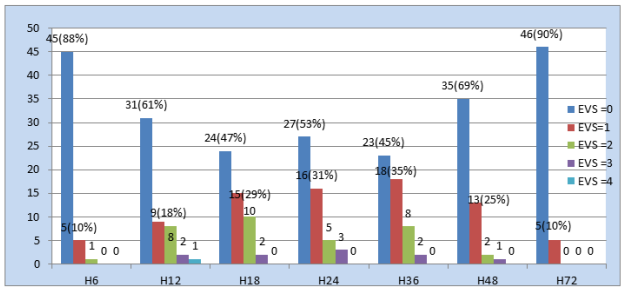

Figure 2: EVS of the patients at rest depending on the time slots.

Mobilization, the EVS was constantly <2 in the majority of patients with 87% (n=44) at the 6th hour, 64% (n=33) at the 12th hour, 58% (n=30) at the 18th time, 76% to the 24th (n=39) time. In the first six hours after getting out of the engine block, the mobilization in the sitting position was possible at 62.7% of patients. The resumption of walking was observed in more than half of our parturient (62.5%) during the first 12 hours. Only three patients (5.1%) had resumed walking after the 24th-hour post-surgery. The average recovery of transit by the gurgling was 6 ± 5.97 hours, 12 ± 7.04 hours for gas (Table 1) and 19 hours ± 16.66 hours for stool. Only seven patients (14%) had presented digestive complications (Table 2). The average length of hospital stay of patients was 3 days. The satisfaction rate was 68.6% (n=35).

Slots (h)	Gurgling		Gases	
	N	%	N	%
1-6h	34	66.7	15	29.4
7-12h	10	19.6	11	21.6
13-18h	2	3.9	14	27.4
19-24h	5	9.8	11	21.6

Table 1: Number of the appearance of the gurgling and gases based on slots.

Digestive complications	Number	Percentage (%)
Nausea	4	8
Vomiting	3	6
Abdominal bloating	0	0
Total	7	14

Table 2: Distribution of patients based on digestive complications.

Discussion

The concept of postoperative rehabilitation was developed by Kehlet in the 1990s based initially on the digestive surgery [6,7]. Through the caesarean section, this approach is intended to reduce the length of hospital stay and therefore lower costs, decrease the incidence of thromboembolic complications through early mobilization and improve the mother-child relationship [8]. This concept is based on components including multimodal analgesia, early mobilization of patients, the early resumption of feeding and early removal of catheters and probes. Cesarean section pain management is often provided by multimodal analgesia [9].

This notion of multimodal analgesia is more important as the secondary effects must be limited to the maximum so that the patient can take care to her newborn as quickly as possible. This multimodal analgesia in this study was based on a combination of techniques of analgesia by abdominal blocks and intravenous and oral analgesics. The administration of intrathecal morphine, although effective and representative real progress, is however restrictive, with the risk of adverse reactions (pruritus, nausea, vomiting, respiratory depression, urinary retention) that can cripple a protocol of post-operative rehabilitation [1].

Hence the choice in this work is to use this alternative. Post-operative pain in Cesarean section has a double origin: A parietal and visceral one. This double origin explains the use not only to the abdominal wall blocks which have a beneficial effect on parietal pain but also with the analgesics by general ways which, in addition, act on the uterine contractions. These analgesics potentiate and subsequently take over the blocks when the pharmacological effects of local anesthetics are exhausted. The effectiveness of this association explains the absence of pain (EVS=0) at rest among 88% of our patients and 71% of patients at mobilization until the 6th time post-surgery. Only 10% of patients at rest and 16% at mobilization described low pain (EVS=1) during the same period. These results are clearly above those of Angondje in 2014 [5] whose analgesic protocol was only systemic. He found 82% of patients with low pain (EVS=1) at rest at the 6th time post-surgery.

The superiority of the CHUO results is explained by the beneficial effect of the blocks of the abdominal wall with the use of bupivacaine. Indeed, bupivacaine provides analgesia of longer duration (12 to 15 hours). The effectiveness of the abdominal wall blocks was also demonstrated by Ducarme et al. in their study on the interest of the parietal single instillation of ropivacaine in the prevention of pain after C-section, they found a significant reduction in scores of pain, the EVA at rest and the effort up to 50% in groups and with a maximum reduction during the first 24 hours of post-partum [10].

If the abdominal wall blocks, as described above, Act on the parietal component, their effect is nil in terms of visceral pain. However, the addition of analgesics through general and oral, including NSAIDs complement this action and especially the quality of analgesia for the pain of uterine origin [11]. To leave patients fasting after Caesarean section and to give them food and drink only after the resumption of transit is a long-standing attitude. This dogma is theoretically intended to prevent nausea and vomiting in postoperative and put the digestive tract to rest [12]. This conduct is still accepted by patients and admitted by many doctors in our country. The consequence being extended bed rest, a delayed resumption of transit and a longer hospital stay (5 days on average) with a high cost. Also, an early refeeding after a scheduled C-section or emergency that it is carried out under general anesthesia or loco regional is recommended because it is not only well tolerated but it accelerates over the recovery of the transit, reduces the length of hospital stay and increased maternal satisfaction with a delayed refeeding [13].

In our study, the average time of transit by gas was 12 ± 7.04 hours. These deadlines are early compared to those of Angondje in 2014 [5] (20.68 ± 7.84) for gas. As for Zoumenou in Benin, delays are even longer. It found an average gas recovery 34.8 ± 20.7 hours for solids and at 39.85 ± -23.5 hours for liquid foods [14]. Benhamou et al. showed that the early recovery of food was not only devoid of gastrointestinal effect but in addition decreased the feeling of hunger and thirst for patients, without side effects, while increasing maternal satisfaction [15]. Maintaining a postoperative infusion may be a hindrance to the recovery of autonomy and seems to be mainly justified by two factors, on the one hand the administration of intravenous analgesics and perhaps even more by the prevention of postpartum hemorrhage, which is still relies for most structures in France on the administration extended to oxytocins (69% and 81%) [16].

In this study, the duration of the maintenance of the intravenous was 24 hours. This is due to the fact that uterine atony and the risk of postpartum hemorrhage can be prevented by the prescription of oxytocin for 24 hours. Jean-François Brichant, in his study on postpartum rehabilitation, emphasizes that the duration of the maintenance of the infusion in his service was 12 hours. This duration is shorter than that found in our series [17]. Bladder catheterization with the placement of an indwelling catheter is still almost systematic, although this practice is no longer recommended [16]. This continuous bladder survey can delay ambulation, cause discomfort when spontaneous urination is resumed and lengthen the duration of hospital stay [18]. The immediate withdrawal of the urinary catheter after intervention seems possible but also justified at the time by the gain in comfort and reducing the risk of urinary infection.

After a C-section, the incidence of thromboembolic events would be five times higher than after vaginal delivery [18]. In view of the expected benefits in terms of resumption of activities and the prevention of thromboembolic events, an early the first day (or even earlier in the 6th to an 8th hour) postoperatively with help from the health care team are advised and encouraged [13]. Fear of post dural headache lasts in our country, is a limiting factor for early mobilization in our practice. These are most often the result of the use of anesthesia needles of big diameters (Gauges 22). The results of this study showed that this protocol favored an early mobilization. In fact, almost all of the population studied (62.7% or 32 patients) happened to be sitting for the first 6 hours and the recovery of the market had been observed in more than half of our parturient (62.8% or 36 patients) during the first 12 hours.

Early and rapid patient empowerment results in a reduction in their length of stay in the hospital with the lower overall cost of their care. The postoperative duration of stay in this study was 3 days for almost all patients (n=44 or 86%). This length of stay although a source of maternal satisfaction in the Gabonese context seems longer than that of the English teams after the introduction of post-rehabilitation program operating for scheduled C-sections [19]. The purpose of this limitation of the duration of hospitalization is also economic (for patients, insurers, and hospitals).

The fear of gastrointestinal complications with only seven patients (14%), seem not to be justified in this study. These results are above those of Teoh et al. (7%) [20], but close to those of Kramer et al. (14%) [21] and Soriano et al. (17%) [22]. Many comparitive studies show that patients who have early post-operative rehabilitation are more satisfied than those who benefit from the classic protocol [16]. In general, all patients who participated in the protocol had been satisfied. They were either moderately or totally satisfied with how the total patient rate was 68.6% (n=35), and among these patients, 51.4% (n=18) were old caesarized. In this series, the parturient satisfaction was related to the various components of the post-operative rehabilitation program.

Conclusion

This study demonstrates that postoperative rehabilitation of Caesareans is an applicable concept in our context. It offers benefits to patients by a quick empowerment and an early contact with their newborns, all to strengthen their bond. It gives other experiences of cesarean section by allowing him to be accepted by the parturient. The surgical side becoming more humanized and seen in a "natural" way the concept of rehabilitation improved after C-section, should fit in the logic of optimization of the support post-operative patients. To achieve this goal, this concept must be articulated around the training of personnel and the development of rehabilitation protocols applicable in hospital units.

State of current knowledge on the subject:

- In developed countries, the cesarean section has, to a large extent, improved in post-operative rehabilitation
- In Gabon, this concept is not up to date
- In daily practice, only empirical design based on the haunting of complications of postoperative ileus is still topical in the majority of hospitals

Contribution

- This study demonstrates that the postoperative rehabilitation of caesareans is an applicable concept in our context
- It requires the training of personnel and the development of rehabilitation protocols applicable in hospital units

Conflicts of Interest

We declare that there is no conflict of interest.

Authors Contribution:

Adrien Sima Zue- Approval of the manuscript; Jean Marcel Mandji Lawson- Review and critical correction of the manuscript; Richard Obame- The protocol development and drafting of the manuscript; Audrey Diundu-Di-Kombile, Boniface ole, Kristian Pascal Nze Obiang, Lesly Vanessa Sagbo Ada Sima- Analysis and correction of the manuscript.

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