Original Article

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Assessment of patient satisfaction after implementing an Enhanced Recovery After Surgery (ERAS) protocol for elective Caesarean sections

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Abstract

Background: Enhanced Recovery After Surgery (ERAS) is a multimodal patient centred perioperative care pathway aimed at accelerating patient recovery, improving patient satisfaction, decreasing length of hospital stay, and post-operative complications.

Objectives: To assess patient satisfaction with ERAS protocol in the most common surgical procedure in the world, elective Caesarean Section.

Methods: A descriptive cross-sectional study was carried out in the department of Obstetrics and Gynaecology at Kathmandu Medical College Teaching Hospital (KMCTH) from July 2020 to February 2021 after ethical approval. The study included all pregnant ladies undergoing elective Caesarean section under ERAS protocol by convenient sampling and their satisfaction with the treatment received was recorded using a pre-validated questionnaire at the time of discharge. Data was analysed using SPSS.

Results: A total of 140 patients were enrolled in the study. Majority of the patients considered the introduction of feeding (100, 71.4%) and ambulation (115, 82.1%) to be on time. Seventy-three patients (52.1%) considered themselves fit for discharge on the second post-operative day and 70 (50%) were discharged on the second post-operative day itself which is earlier compared to the hospital protocol of discharge on the third or fifth post-operative day. Most of the women (136, 97.1%) were satisfied with the care they received and 132 (94.3%) of them would prefer to undergo surgery under the ERAS protocol in the future.

Conclusion: Most women were satisfied with the surgical experience and would prefer to undergo surgery under the same protocol in the future.

Key words: Caesarean section; Elective surgery; Enhanced recovery after surgery; Patient satisfaction.

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INTRODUCTION

Enhanced Recovery After Surgery (ERAS) is a multimodal patient centred perioperative care pathway to optimise surgical outcome by improving both patient experience and clinical outcomes. Purpose of ERAS is to accelerate patient recovery, improve patient satisfaction, decrease length of hospital stay, reduce readmissions and post-operative complications.[1] This is achieved through evidence-based modern care changes from overnight fasting to carbohydrate drinks two hours before surgery, management of fluids to seek balance rather than large volumes of intravenous fluids, avoidance or early removal of drains and tubes, early mobilisation, and serving of drinks and food on day of operation. Elements of these protocols reduce stress of operation to retain anabolic homeostasis. Studies show that implementation of ERAS protocols has resulted in shorter length of hospital stay, and reductions in complications while readmissions and costs are reduced.[2,3]

The ERAS protocol is now at the heart of every surgical procedure but there is an obvious dearth of publications in Nepal involving role of ERAS in the most common surgical procedure in the world, the Caesarean section. The objective of the study was to assess the satisfaction of patients following implementation of ERAS protocol in elective Caesarean section at Kathmandu Medical College Teaching Hospital (KMCTH).

METHODOLOGY

This was a descriptive cross-sectional study conducted from July 2020 to February 2021 (until sample size was attained) in the department of Obstetrics and Gynaecology at Kathmandu Medical College Teaching Hospital Public Limited (KMCTH), Sinamangal, Kathmandu, Nepal. Ethical approval was taken prior to study from the Institutional Review Committee at KMCTH (Ref. 0207202004).

The study included all the pregnant ladies undergoing elective Caesarean section under ERAS protocol in the department of Obstetrics and Gynaecology, KMCTH who fulfilled the inclusion and exclusion criteria. The participants were included by convenience sampling technique. The sample size was calculated using the given formula: $n = Z^2pq/d^2$. The rate of elective Caesarean Section in KMCTH was found to be 10% ($p = 0.1$) from previous study.[4] Taking this study as the reference for sample size: $p = 0.1$; $q = 1\text{-}0.1 = 0.9$; $Z = 1.96$ at 95% confidence interval; and $d = 0.05$ at 5% margin of error, the sample size was calculated to be 138.3 which was then rounded off to 140. The study included all women undergoing elective Caesarean section under regional anaesthesia who consented for the study. Women who denied consent, had emergency Caeserean Section, had comorbidities like overt diabetes mellitus, preeclampsia and heart diseases, obese patients, patients requiring general anaesthesia, patients who had complications during and immediately after surgery and required longer hospital stay for further management were excluded from the study.

All the respondents were informed about the study in detail. Verbal and written informed consent were taken from each participant. Data were collected using interview method using a prestructured questionnaire (which was validated by authors using Guttman spilt-half coefficient) on the day of discharge of the patient.

Cases were enrolled in the Outpatient Clinics during the participants' last antenatal visit and the pre, intra and post-operative changes mentioned in later paragraphs were implemented to these patients. The protocol was formulated using various references and modified as perfeasibility.[3,5-9]

Preoperatively, focus was given on patient education and preadmission counselling regarding the surgery and what to expect during hospital stay using a printed pamphlet. The patients were admitted on the day prior to the surgery and were asked to bathe on the day of admission. After admission, patient was once again briefed about the surgical procedure. As per the hospital norm, the preanaesthetic checkup was done on the day prior to surgery. Prolonged fasting was avoided and the patient was allowed soft food upto six hours prior to surgery and clear liquids upto two hours before surgery, thus obviating the need for preloading the patient with intravenous (IV) fluids. Carbohydrate loading was done two hours prior to surgery with 200 ml of black tea with two teaspoonful of sugar. Bowel preparation was avoided. Nausea and vomiting prophylaxis using antihistaminics and metoclopromide was given on the night before and two hours prior to surgery.

Intraoperatively, regional anaesthesia was exclusively used during surgery. Added steps to prevent infection were carried out by performing abdominal scrub using 4% chlorhexidine solution prior to painting with betadine solution. Vaginal painting was also done using betadine solution prior to incision. Zero balance fluid policy was followed by avoiding excessive intravenous fluids by checking the output versus the input and normothermia was maintained by maintaining the temperature of the operation theatre. Pain management was multimodal using regional anaesthesia, Non-steroidal anti-inflammatory drugs (NSAIDs), and opioids.

Post-operatively, early enteral feeding was started after two hours of the patient being shifted to the post-operative ward and soft diet was started four hours thereafter. Multimodal pain management was followed using NSAIDs and opioids. Nausea and vomiting prophylaxis was given using proton pump inhibitors and metoclopromide. Foley catheter was removed on the morning following surgery and patient was encouraged to ambulate thereafter. Early discharge was encouraged on second post-operative day as opposed to the regular three to five day of post-operative stay.

Data were collected at the time of discharge by interview method using a pre-validated questionnaire. Data were stored and evaluated using IBM SPSS Statistics for Windows, version 26 (IBM Corp., Armonk, N.Y., USA).

RESULTS

From July 2020 to February 2021, 239 elective Caesarean Sections were done at KMCTH. Among these, 140, who fulfilled all the inclusion criteria were taken as cases for the study. The enrolled participants had mean age of 27.79 ± 5.1 years with minimum being 19 years and maximum 41 years. Majority were between 25 to 29 years of age (59, 42.4%) and had college level education (69, 49.3%) (Table 1).

Most of the women considered the information given to them prior to surgery (101, 72%) and the treatment given by the staff (114, 71%) was above fair (that is, in the good and very good category) (Table 2).

As regards to post-operative comfort, 112 (80.1%) patients found the pain management to be either good or very good (Table 2). One hundred and twenty (85.7%) patients did not experience any nausea or vomiting post-surgery. When it came to feeding and ambulation, the vast majority, that is 100 (71.4%) and 115 (82.1%) respectively, believed that they were started on time and not too late or too early.

Eight (5.7%) patients and 65 (46.4%) patients considered themselves to be fit for discharge on the first and second post-operative day respectively. Seventy (50%) patients were discharged on the second post-operative day, as opposed to the normal hospital discharge protocol on the third or fifth post-operative day, and the rest, that is, 70 (50%) patients were discharged later due to various reasons (Table 4). The most common reason why patients were not discharged on the second post-operative day was pain which was cited by 17 patients (12.1%) followed by proper care not being available at home which was reported by 15 (10.7%) patients (Figure 2).

Overall, 136 (97.1%) patients were satisfied with their surgical experience: 33 (23.6%) were very satisfied; 36 (25.7%) were quite satisfied; 67 (47.9%) were satisfied; 4 (2.9%) were poorly satisfied, and none of the ladies were found to be unsatisfied. A hundred and thirty two (94.3%) patients said that they wanted the ERAS protocol to be followed if they ever had another surgery. The most positive experience for these patients being the care they received from the staff and introduction of early feeding both being reported by 31 (22.1%) patients each.

Only four (2.9%) patients were readmitted, all of whom were discharged on the second post-operative day, and all readmissions were due to postpartum hypertension.

Table 1: Demographic variables

Variable	Categories (years)	Frequency, n (%)
Age groups	<20	7 (5)
	20 to 24	25 (17.8)
	25 to 29	59 (42.4)
	30 to 34	30 (21.4)
	35 to 39	17 (12)
	≥40	2 (1.4)
Level of education	No formal education	1 (0.7)
	Primary school level	17 (12.2)
	Secondary school level	53 (37.9)
	Undergraduates and above	69 (49.3)

Table 2: Patient rating of preoperative information, treatment given by staff and post-operative pain management, n (%)

Categories	Very poor	Poor	Fair	Good	Very good
Information given to patient	-	-	39 (27.9)	51 (36.4)	50 (35.7)
Treatment given by staff	-	4 (2.9)	22 (15.7)	54 (38.6)	60 (42.9)
Pain control post-surgery	-	6 (4.2)	22 (15.7)	68 (48.5)	44 (31.6)

Table 3: Timing of feeding and ambulation, n (%)

Questions	Too Soon	Somewhat soon	On time	Late	Too late
When you were told to start drinking/ eating, did you find it to be :	5 (3.6)	23 (16.4)	100 (71.4)	12 (8.6)	-
When you were told to walk, you thought it to be:	8 (5.7)	13 (9.3)	115 (82.1)	4 (2.9)	-

Table 4: When the patients considered themselves fit for discharge versus when they got discharged, n (%)

Post-operative day	When did you consider yourself fit for discharge	When were you discharged
First	8 (5.7)	-
Second	65 (46.4)	70 (50)
Third	61 (43.6)	62 (44.3)
Fourth	6 (4.3)	8 (5.7)
After fourth	-	-

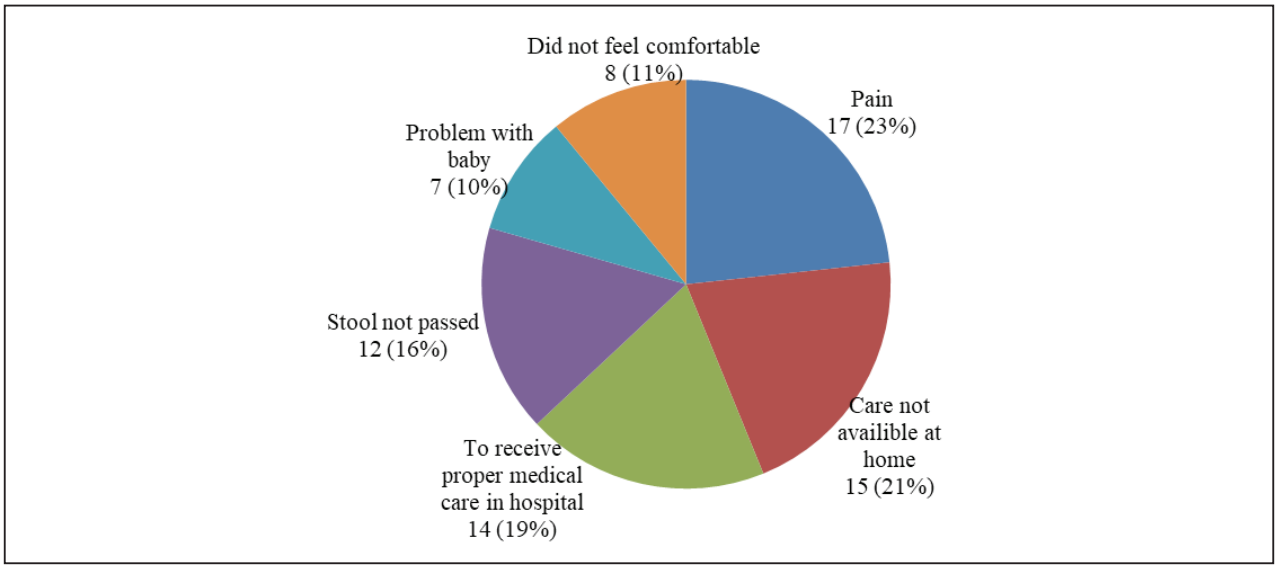

Figure 1: Reasons the patients were not discharged on second post-operative day

DISCUSSION

Even though the concept of ERAS came into being in the 1990s, there has been very little done in the field of enhanced recovery after Caesarean delivery until this day. This has been attributed to a generalised lack of awareness regarding such protocols and also to a sense of hesitation on part of some healthcare providers to bring about any change to a system that is 'working just fine'. However, in the last decade, multiple obstetrical units in the United Kingdom have introduced enhanced recovery programs in obstetrics and have reported improved quality of care and significant savings with superior patient satisfaction. According to Cherot, who implemented ERAS protocols for elective Caesarean deliveries in the United States, the program helped patients better prepare for surgery, hospitalisation, and discharge and resulted in shorter lengths of stay and less use of narcotic.[10]

However, in this study, the authors have just focussed on how satisfied the patients were after undergoing Caesarean deliveries under ERAS protocols. The results of this survey showed that most of the patients were satisfied undergoing Caesarean section under ERAS protocols at the hospital and were positive about it for their future surgeries. Since the authors could not find any article pertaining to patient's satisfaction with regards to ERAS in Caesarean deliveries, comparisons were made with articles citing patient satisfaction after undergoing colorectal surgery under ERAS protocol and all those articles reported a high rate of patient satisfaction.[11-14]

Most patients in this study found the information given to them prior to surgery to be above fair which was comparable to the results of the study done by Olivares et al. in which 80% and 18.2% of the patients rated the information as very good and good respectively. Most of the patients also thought that they were either very well or well treated by the staff which is similar to the findings. Majority of the patients found that post-operative ambulation and feeding was started on time.[11]

As per this study, 112 (80.1%) patients thought the post-operative pain management was either good or very good and 120 (85.7%) patients did not experience any nausea or vomiting. This was similar to the findings of Jingru et al. according to which, patient satisfaction rated as per visual analogue scale (VAS) scores was significantly higher in the ERAS group than in the control group post Caesarean section.[15] This was also comparable to the findings of the study done by Olivares et al.[11]

In the study, 70 (50%) of the patients were discharged on the second post-operative day as opposed to the normal third to fifth post-operative day which did not concur with results of a study done by Pan et al. in which total length of stay, post-operative length of stay, and the cost of anaesthesia in both ERAS and control groups were comparable.[15]

Li and Jensen summarised the literature comparing satisfaction and quality of life after colorectal surgery following treatment within an ERAS protocol to standard post-operative care as follows "The available evidence suggested patients suffer no detriment to satisfaction or quality of life with use of ERAS protocols, and may suffer less fatigue and return to activities sooner." They also mention that although most publications reported no adverse effects on post-operative pain, a limited number of studies suggested patients may experience increased early post-operative pain with ERAS pathways.[16] Though most patients in this study state to have good or very good control of post-operative pain, since presence of pain was one of the main reasons for late discharge, the author believes that tighter control of post-operative pain will bring about better results in relation to the enhanced recovery protocols.

CONCLUSION

Most of the women were satisfied with the care they received and almost all of them wanted to undergo surgery under the ERAS protocol in the future. The most positive experience for the patients was the care they received and the early feeding and most of the patients had no negative remarks regarding the protocol followed**.** So, in conclusion applying ERAS guidelines to Caesarean section would definitely be beneficial to the patients- physically, mentally as well as financially and would lessen the burden on the healthcare system as well.

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