

Study of Post LSCS Wound Complications at Tertiary Care Hospital

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Abstract

Caesarean section is one of the commonest surgery in obstetrics which is done to facilitate delivery in cases where vaginal delivery is either not feasible or poses undue risk to mother, baby or both [1]. Surgical site infections (SSI) following caesarean delivery is a major cause of maternal morbidity & mortality, increasing both the duration of patient hospitalization and hospital cost [11-14]. *Objective:* To assess the incidence of caesarean wound complications and to study the risk factors/co-morbid factors. *Method:* This prospective study was conducted in Obstetrics and Gynec department, SMIMER from April 2015 to September 2016 with follow up of patient for subsequent 1 month. Total 2377 patients of both elective & emergency LSCS were included in the study. *Observation:* During the study period, total 10407 deliveries were conducted out of which 8070 (77.16%) were vaginal deliveries and 2377(22.84%) were caesarean sections. Out of 2377 patients, 75(3.16%) patients developed wound complications which were categorized as induration, serous discharge, superficial wound infection (skin gape), deep wound infection (subcutaneous gape) and hematoma. Prolonged operative time, multiple vaginal examinations, anemia, PIH & DM were some of the associated risk factors. *Conclusion:* Caesarean section is one of the commonest surgeries performed in

obstetrics, both as emergency as well as elective. Wound complications in LSCS increases post operative maternal morbidity, thus leading to prolonged hospital stay thus imposing financial burden on both patient and society in general. Protocols need to be designed & followed to reduce these post operative wound complications.

Keywords: LSCS; Wound Complications; SSI.

Introduction

Caesarean section is one of the commonest surgery in obstetrics which is done to facilitate delivery in cases where vaginal delivery is either not feasible or poses undue risk to mother, baby or both [1]. The procedure has gone long way in reducing maternal & fetal mortality and morbidity associated with child birth, though it tends to be expensive due to theatre charges and long hospital stay. Risk factors for caesarean related morbidity and mortality include un-booked status, emergency compared to elective procedure, use of general anesthesia, anemia, prolonged labor, repeated vaginal examinations etc. Most LSCS are performed as emergency procedures with an elective rate of 4% [2,3].

Wound complications after caesarean delivery are a significant emotional and economic burden. SSI following caesarean ranges from 3% to 5%, varying according to the population being studied, the methods used to monitor and identify cases and the use of appropriate antibiotic prophylaxis [4-6]. The complications can be induration, serous discharge, wound separation without and with infection, cellulites, burst abdomen and remote problems like keloid, incisional hernia, scar endometriosis etc. The current

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study was undertaken to evaluate patient related and surgical risk factors contributing to the increased wound complication rate.

Objective

To assess the incidence of caesarean wound complication and to study the associated risk factors.

Materials & Method

This observational study was conducted in Obstetrics and Gynecology Department of SMIMER, Surat from April 2015 to September 2016. All patients (2377) who underwent LSCS during this period were included & they were followed for subsequent 1 month. Detailed history and examination was done with special emphasis on number of vaginal examinations, any outside manipulation or any other risk factor like PROM, DM, anemia, obstructed labor etc. During surgery, blood loss was assessed by mop method and duration of surgery was noticed. Most LSCS were done by Pfannenstiel incision.

Inj. Cefotaxim 2gm was given half hour before surgery followed by 1gm twelve hourly for 2 doses in post operative period.

Women enrolled in the study were followed till day of discharge, called back on 7th day for stitch removal and they were again called back on 14th & 21st day. Complications like induration, skin gape & mild degree of discharge were managed on OPD basis while severe complications were treated after hospitalization.

Observations

In our study, rate of caesarean delivery was 22.84% (Table 1). Out of total 10407 deliveries, 8030 (77.16%)

were normal delivery and 2377 (22.84%) had caesarean delivery. Out of these 2377 patients, 75 cases developed wound complications thus making wound complication rate of 3.16 %.(Table 2). Majority of patients were between 21 to 30 years which is most common reproductive age group. The study revealed that incidence of wound complication increased as the age of patient increased. The wound complication rate was higher in multigravida (3.40%) as compared to primigravida (2.60%).

The rate of wound complications was directly proportional to the number of previous LSCS as the rate of complications in previous 1 LSCS was 2.60 % (26/1008), in previous 2LSCS was 4.20%(7/165) and in previous 3LSCS was 11.1%(1/9).This study also showed that wound complications were higher in patients with hemoglobin < 10 gm% as 53 (70.67%) out of 75 had anemia. The rate of wound complications was directly proportional to the number of PV examinations as 48(64%) patients out of 75 had 3 or more than 3 PV examinations.

Table 3 shows that as BMI increases, chances of wound complications also increase. Wound complication rate was 4.17% in morbid obese patients (BMI>40). The various risk factors which contributed to wound complications, in this study were PROM (4/60), PIH (7/140), DM(1/8) and obstructed labor(1/4). As the duration of surgery increased, the rate of wound complications increased.

In patients with surgery duration b/w 61 to 90 min, complication rate was 3.17% (39/980) and with duration of more than 90min, complication rate was 4.78%(10/209). Table 4 shows the various types of wound complications. The commonest wound complication in our study was deep wound infection (34.67%). In present study, the average duration of hospital stay for women with no wound complications was 4 days as compared to women with wound complications which was 7.97 days.

Table 1: The rate of caesarean section in this study

	No of Patients	Rate
Total Delivery	10407	
ND	8030	77.16%
LSCS	2377	22.84%

Table 2: Rate of wound complications in this study

	Number	Rate
LSCS	2377	
Wound Complications	75	3.16%

Table 3: Relation of BMI and wound complications

BMI	LSCS		Wound Complications	
	Number	%	Number	%
19 to 29.99	1592	66.97	44	2.77
30 to 39.99	737	31.0	29	3.93
40 and more	48	2.1	2	4.17

Table 4: Type of wound complications

Type of complications	No of patients	Percentage %
Induration	21/75	28
Serous discharge	23/75	30.67
Superficial wound infection (skin gape)	24/75	32
Deep infection (subcutaneous gape)	26/75	34.67
Hematoma	06/75	8

Discussion

In this study the wound complication rate was 3.16% which was comparable to studies of T Sessa Sai et al (2016) [7] of 2% and A R Mahal et al (2008) [8] of 8.61%. This study showed that rate of wound complication increased with the increasing age of patients. This could be due to associated other medical conditions like PIH, DM and obesity.

The rate of wound complications was higher in multigravida (3.40%) as compared to primigravida (2.60%) which could be due to short pregnancy intervals leading to malnutrition, anemia and repeated LSCS. More the number of previous LSCS, more was the complication rate. Similar results were found in study of Dr. K. Vijaya et al [9]. Patients with Hb<10 had higher complication rate (70.67%). This is because wound healing process relies heavily on oxygenation and anemia delays the healing process.

This study found that wound complication rate was directly proportional to number of PV examinations and BMI. T Sessa Sai et al [7] study also showed that wound complication rate was 25% in patients of BMI>30. TRAN et al [10] reported in his study that caesareans which lasted longer than 1 hour, had a higher risk of wound complication & this study also showed similar results. Longer duration of hospital stay in patients of wound complications as was found in our study which is comparable to study of T Sessa Sai [7].

Conclusion

This study found that the incidence of post caesarean wound complication was 3.16% (26/75) and the commonest type of complication was deep wound infection. Some of the risk factors associated

with increased rate of wound complications found in this study were increasing age, multigravida, higher BMI, anemia, higher number of PV examinations, number of previous LSCS, longer duration of surgery, PIH, DM, obstructed labour etc. Taking care of these risk factors, some strategies and protocols need to be formed to reduce post LSCS wound complications thus reducing maternal morbidity in mothers undergoing LSCS surgeries.

Considering the risk factors found in this study which were related to increase incidence of wound complications, some of the protocols and strategies which can reduce the wound complications following LSCS can be - prevention & treatment of anemia in ANC period, proper management of PIH & DM during antepartum period, proper education and guidance of reproductive age group females about the impact of BMI on pregnancy, restricting the number of PV examinations during labour, proper monitoring of labour patients by partograph to reduce the incidence of prolonged and obstructed labour, reducing the time of surgery as far as possible but not at the cost of quality, achieving good hemostasis, administration of prophylactic antibiotics to all patients and therapeutic antibiotics in high risk patients etc.

Such protocols if formed and followed properly will definitely help to reduce maternal morbidity due to LSCS wound complications thus reducing emotional as well as financial burden of our patients and our society.

Abbreviations:

LSCS-lower segment caesarean section,
SSI-surgical site infections and
PIH- pregnancy induced hypertension,
DM- diabetes mellitus.

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