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Original Research Article

Critical analysis of surgical difficulties and postoperative morbidities of caesarean deliveries: a rural teaching hospital experiences in silk city, South India

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ABSTRACT

Background: Caesarean section is the delivery of a fetus through a surgical incision on the uterine wall after 28 weeks of gestation. Objectives of present study were to determine the caesarean section rate, to analyse surgical difficulties and post-operative morbidites in caesarean deliveries and to formulate modalities to reduce morbidity and to ensure safe motherhood.

Methods: Retrospective analysis of caesarean deliveries in Shri Sathya Sai Medical College and Research Institute, Ammapettai from January 2015-2017. Total number of delivery in these two year were 494.Total vaginal delivery-210, Total caesarean delivery-284. Case records of women who had cesarean deliveries were analysed for intra operative complications and post-operative morbidity within the period of their hospital stay.

Results: Total no of deliveries in 2 years were 494. Vaginal delivery was 210 (42.5%). Total caesarean section is 57.5% (n=284). Primary caesarean section rate 33.1% (n=94) and secondary cesarean section rate 66.9% (n=190). 60% of our subjects were un-booked emergency admissions. Majority were between 21-30 years. Youngest is 16yr old with imminent eclampsia, oldest 35yr with previous 3 LSCS with central placenta previa. Non-closure of peritoneum in previous caesarean has increased the risk of adhesions, plastered rectus muscle and bladder adhesion which caused difficulty in reaching lower segment in 62 women. In present study, vertical incision was put on uterus in 4 cases due to adhesions. Difficulty in entering uterine cavity, extension of uterine angle due to thick lower segment and excessive bleeding was seen in cases of repeat caesarean section. Scar dehiscence has increased due to single layer closure of uterus. Scar dehiscence was noted in 41 cases. Bladder injury in 3 cases, adherent placenta over the scar was seen in 5 cases.

Conclusions: Caesarean section rate is increasing. Intraoperative complications and postoperative morbidity is comparatively less in primary caesarean section. More than one morbidity was seen in 60% women who had repeat section. With the growing rate of cesarean deliveries worldwide, women should be counselled that the repeat cesarean are bound with surgical difficulties and complications. If available, it's imperative to take the senior obstetricians help for better surgical outcome. Anticipation of complications, early decision and active intervention reduces morbidity and prevent mortality as most of the women report for admissions late in labour.

Keywords: Bladder injury, Dense adhesions, Postpartum hemorrhage, Scar dehiscence

INTRODUCTION

Caesarean section is the delivery of a fetus through a surgical incision on the uterine wall after 28 weeks of gestation.[1] The origin of the term caesarean section is obscure but several different theories are promulgated.[2,3] Historians agree that the term caesarean section has nothing to do with the birth of Julius Caesar.[2,3] The term probably was derived from 'Lex Caesarea' a decree in the Roman law (715 672 B.C) requiring that before burial of any woman dying in late pregnancy, the child be removed from the uterus.[3] The term probably derives from the Latin verb caedere meaning to cut.[3]

First documented operation on living women was in 1600. She died on the 25th post-operative day due to infection from open uterus and abdominal wounds.[2] First successful caesarean was done in USA in 1794.[2] In early caesarean section, no sutures were placed in the uterus, and caesarean deliveries were associated with 100% maternal mortality, mostly due to infection or haemorrhage.[3] The first major surgical advance in the technique was introduced by Porro, in which the uterine fundus was amputated following the delivery of the fetus and placenta, And the cervical stump marsupialized to the anterior abdominal wall.[3]

Scanger M advocated performing a vertical incision on the uterus avoiding the lower uterine segment and recommended closing the uterus in two layers, using silver wire for the deep suture and fine silk for the superficial serosa.[3] Kronig recommended transperitoneal vertical incision in the lower uterine segment.[3] Kerr M recommended semilunar transverse lower uterine segment incision with the curve pointing upward. This uterine incision is still used today.

With the subsequent development of antibiotic therapy and modern bloodbanking techniques, caesarean section has evolved into one of the safest and most commonly performed major operative procedures.[3] Caesarean section has contributed immensely to improve obstetric care throughout the world.[4] Like any other major abdominal surgery; caesarean section is not free of complication. These complications are major contributors to maternal morbidity and mortality.[5,6] The caesarean section rate vary widely both within and between countries.[4]

METHODS

Retrospective analysis of caesarean deliveries in Shri Sathya Sai Medical College and Research Institute, Ammapettai from January 2015-2017. Total number of delivery in these two year were 494.Total vaginal delivery-210, Total caesarean delivery-284. Case records of women who had cesarean deliveries were analysed for intra operative complications and post-operative morbidity within the period of their hospital stay.

RESULTS

Table 1 shows total delivery statistics for 2 years. Total no of deliveries in 2 years were 494. Vaginal delivery was 210 (42.5%). Total caesarean section was 284 (57.5%). Primary caesarean section rate was 33.1% (n=94) and secondary cesarean section rate was 66.9% (n=190). In present study incidence of caesarean delivery was 57.5%. Elective primary LSCS was done in 45 cases, emergency primary section in 49 cases. Elective repeat section was done in 80 cases, emergency repeat section in 110 cases. 60% of present subjects were un-booked emergency admissions.

Table 1: Delivery statistics for 2 years.

	N	%
Total no of deliveries	494	
Labour naturalis	210	42.5
Total caesarean	284	57.5
Primary LSCS	94	33.1
Elective	45	47.8
Emergency	49	52.2
Secondary LSCS	190	66.9
Elective	80	42.1
Emergency	110	57.8

Table 2 shows age group of patients who underwent caesarean section. Majority were between 21-30 years.67% women who had primary caesarean section were in the age group (21-30 years). 68.9% women who had secondary section were in the same age group.

There is no significant difference between two groups with respect to their age. Youngest was 16 years old primi gravida with imminent eclampsia and uncontrolled hypertension and eldest was 35 years old previous 3 caesarean with central placenta previa.

Table 2: Age group.

Age	Primary LSCS (n, %)	Repeat LSCS (n, %)
Less than 20	12 (12.7)	15 (7.8)
21-30	63 (67)	129 (68.9)
31-35	19 (20.3)	46 (24.3)
Total	94	190

Table 3 shows parity of women who had CS. Majority of patients were second gravid-166 (58.4%).

Table 2: Parity.

Gravida	No. of patients	%
Primi	94	33.3
Second gravida	166	58.4
Third gravida	21	7.3
Fourth gravida	3	1

Table 4: Difficulty in entering abdominal cavity and lower uterine segment.

Cicatrisation of abdominal scar	16
Ventri fixation of anterior surface of uterus (plastered uterus)	42
Adhesions	
Flimsy	106
Dense	44
Adherent to uterine surface	
Bladder	26
Rectus muscle	13
Placenta	5
Thick lower segment	62

Table 4 shows causes for difficulty in entering abdominal cavity. There was no difficulty in 100 cases out of 284 caesareans. More than one morbidity is seen in 87 cases. Out of 80 women who had RPM Scar 42 had dense adhesions binding anterior abdominal wall with uterus, rectus muscle was adherent to uterine surface in 13 cases, bladder was adherent to uterus in 26 cases and adherent placenta was seen in 5 cases. There was difficulty in reaching lower segment in 62 cases. Vertical incision was put on uterine surfaces in 4 cases.

Table 5: Intraoperative complications in primary caesarean section (N=94).

	N	%
Thick lower segment	56	59.5
Increased bleeding	39	41.4
Difficulty in delivery of head	26	27.6
Extension of uterine wound	13	13.8
Broad ligament hematoma with uterine artery injury	3	3.2
Atonic PPH	3	3.2
Increased surgery time	48	51

Table 5 shows intra operative complications in primary caesarean. 94 had primary caesarean sections. There was difficulty in opening the uterine cavity due to thick lower segment in 56 cases, prolonged surgery time in 48 cases, excessive bleeding in 39 cases, difficulty in delivering the head in 26 cases, extension of uterine angle in 13 cases and broad ligament hematoma in 3, atonic PPH in 3 cases.

Table 6 shows Intra operative complications in repeat caesarean section. Extension of uterine angle seen in 21 subjects, uterine artery injury with broad ligament hematoma in 6, injury to bladder in 3 cases. Adherent placenta was seen in 5 of our cases. Piece meal removal of adherent placenta with hemorrhage in 1 case (managed by leaving insitu and postop methotrexate injection). Atonic PPH was seen in 36 cases, excessive bleeding (apart from atonicity) was seen in 60 cases, increased surgery time in 91 case. Scar dehiscence was noted in 41 cases, ruptured uterus was present in 1 case which was managed successfully by approximation and avoiding hysterectomy.

Table 6: Intra operative complications in secondary caeserean section (N=190).

	N	%
Extension of uterine incision	21	11.05
Uterine artery injury with broad ligament hematoma	6	3.15
Scar dehiscence	41	21.5
Rupture uterus	1	0.52
Piece meal removal of adherent placenta with hemorrhage	1	0.52
Adherent placenta	5	2.63
Atonic PPH	36	18.9
Bladder injury	3	1.57
Excessive bleeding apart from atonicity	60	31.5
Increased surgical time	91	47.8

Table 7 shows Post-operative morbidity. Morbidity within their stay in hospital were analysed. Average hospital stay was 8 days. 73.9% had postoperative morbidity. Most common morbidity was fever.75 cases had fever, 43 due to urinary *E. coli* infection and 32 due to wound infection. Second common morbidity was anaemia, with hemoglobin less than 7gm. 62 subjects who were anemic needed blood transfusion. Resuturing of abdominal wound was done in 26 cases. Secondary hemorrhage was seen in 18 women due to sepsis. Paralytic ileus was seen in 6 women. Relaparatomy was done in one case for severe intra-abdominal bleeding.

Table 7: Postoperative morbidity.

	N	%
Fever	75	26.4
UTI due to *E. coli*	43	
Wound infection	32	
Anemia	62	21.8
Resuturing of wound	26	9.15
Secondary hemorrhage	18	6.3
Paralytic ileus	6	2.1
Relaparotomy	1	0.35
Total	210	73.9

DISCUSSION

Caesarean section is the most common obstetric operative procedure worldwide. The incidence of c-section is continuously increasing for the last couple of decades giving women frequently an obstetric status of previous cesarean section. While the crucial, lifesaving role of cesarean section (CS) in modern obstetrics is obvious, the potential adverse impact of high CS rates is less expressed about raising CS rates and their potential complications especially during a repeat cesarean section in many countries.[7,11]

In present study, caesarean section rate is 57.5%. 60% of our subjects were un-booked emergency admissions. This rate is high when compared to Garba NA, their caesarean rate was 15.8% and 33.5% were booked elsewhere and 20.2% were unbooked.[8]

Higher rates of maternal morbidity were found for nearly all age groups. No significant correlation with age of the patient and complication of caesarean section. Majority of women were second gravida. Women who had no previous caesarean had lower rates of morbidity compared to women who had previous caesarean delivery. These observations are similar to Curtin SC, Munshi SP.[9,10]

Surgical difficulties like cicatrized abdominal scar, difficulty in opening of abdominal wall, unidentifiable UV fold of peritoneum, advanced bladder, bladder injury, wound infection and other similar difficulties have been mentioned in other studies also.[11] Dense adhesions which also have been reported by other investigators not only create difficulties for the surgeon but may also pose an increased risk to the patient by prolonging operation time and by increasing the risk of injury of adjacent organs.[12,13]

CONCLUSION

In conclusion, with the growing rate of cesarean deliveries worldwide, women should be counselled that the repeat cesarean are bound with surgical difficulties and complications. If available, its imperative to take the senior obstetricians help for better surgical outcome. Anticipation of complications, early decision and active intervention reduces morbidity and prevent mortality as most of the women report for admissions late in labour.

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