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Research Article

Indications and Complications of Cesarean Delivery: A Retrospective Review at King Abdullah bin Abdul-Aziz University Hospital

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Abstract

Objective: To estimate the prevalence, indications and complications of cesarean section(CS) in secondary care hospital settings in Saudia Arabia.

Study Design: A retrospective cross sectional study.

Place and Duration of Study: Department of Obstetrics and Gynecology in King Abdullah bin Abdul Aziz University Hospital (KAAUH). Study duration was October 2017-October 2018.

Patients and Methods: A retrospective cross sectional study was conducted in King Abdullah bin Abdul-Aziz University Hospital (KAAUH) from October 2017 to October 2018 by using a formulated data collection sheet and self-structured questionnaire which was based on demographic data, past medical and surgical history and previous obstetrical history was filled from each patient file without any intervention. A total of 520 patients as sample size was estimated to keep in mind prevalence of CS at global level and by using WHO calculator. This study was conducted after getting

approval from Institutional review board (IRB) of Princess Nourah Bint Abdulrahman University (PNU). Required data were collected with the help of a detailed questionnaire after taking informed consent. The questionnaire included different demographic variables (age, residence, and education level, and working area, nature of job, urban and rural).

Results: A total of 520 patients were included in the study. Out of which 306 (58.8%) were delivered by emergency cesarean section while 214 (41.1%) were delivered by elective cesarean section from duration of October 2017-October 2018. Descriptive statistics (Mean ± SD) of all quantitative variables like age, maternal height and weight, parity, BMI, Gestational age was computed. Mean age of patients was 31.6 ± 5.52 years. Most of the women belong to Saudi nationality were 488 (93.8%) while others were 32 (6.2%). Age of the patients stratified into three main groups out of which 19-28 years of age were 162v (31.2%) while 29-38 years of age were 298 (57.3%) and women of age group of 39 -48 years of age were 60(11.5%). Maternal and fetal outcomes of CS were mentioned in (Table 2). Indications of emergency cesarean section were fetal distress 130 (42.5%) and pre Eclampsia which was 4.0 (1.1%), followed by intrauterine growth retardation (23.6 %), while only 10.5 % had previous CS.

Conclusion: In recent years, there has been a significant increase in the rate of cesarean sections conducted in KAAUH. This brought about a series of concerns regarding the complications that arise from the procedure, as well as, the indications for the procedure to be carried out within the start. This study concludes that there are various indications for CS to be conducted, and that multiple complications can arise from this procedure.

Keywords: Fetal Distress; Maternal Complication; Prevalence of cesarean section

1. Introduction

Cesarean section (CS) is a surgical intervention and also considered as lifesaving procedure performed in situations of significant risk to Mother or fetus during pregnancy or labor [1]. However, this procedure has been associated with higher rates of maternal and infant morbidity and mortality [2]. World Health Organization (WHO) identifies that the rate of cesarean section (CS) should not exceed 10% to 15% in any country [3]. There are many debates going on regarding rate of C/Section as mortality and morbidity in mothers occur more after CS as compared to Vaginal delivery(SVD) [4]. The initial aim of CS was to prevent complications due to obstructed labour later on its indications expanded over time and it became lifesaving procedure in different life threatening conditions [5]. There are many indications for CS nowadays followed in hospitals like obstructed labor, Pre Eclampsia, Eclampsia, Large size Baby. But there is some contributing factors which ensure safety of this procedure is depends on better surgical techniques, Anesthesia techniques, effective prophylaxis like antibiotics to avoid infection and availability of blood bank [6]. It is estimated that up to one-third of the 18.5 million annually performed caesarean sections worldwide are conducted for non-medical indications and have been described as unnecessary [7]. 60% of the world's births occur in low income countries; whereas, middle and high income countries account for only 37.5% of all births CS rate is increasing worldwide specially in low and middle income countries like its prevalence in East Asia.

24.3% respectively while as per WHO its prevalence in England is 24%, china 27% while in Brazil it is 50% [8]. CS should be undertaken when medically necessary, and rather than striving to achieve a specific rate, efforts should focus on providing cesarean section to all women in need [9]. There is a paucity of information regarding rate of cesarean section in Saudia Arabia. The International Federation of Gynecologists and Obstetricians (FIGO) issued a statement regarding the rising CS rates is professional practice. Caesarean delivery should be done unless there is maternal or fetal complication or it leads to morbidity and mortality either of mother and fetus [10]. The current study aims to share prevalence of CS indications of a cesarean section (CS) and its complications among women at King Abdullah bin Abdul-Aziz University Hospital (KAAUH).

2. Material and Methodology

A retrospective cross sectional study was conducted in King Abdullah bin Abdul-Aziz University Hospital (KAAUH) from October 2017 to October 2018 by using a formulated data collection sheet and self-structured questionnaire which was based on demographic data, past medical and surgical history and previous obstetrical history was filled from each patient file without any intervention. This study was conducted after getting approval from Institutional review board (IRB) of PNU. Required data were collected with the help of a detailed questionnaire after taking informed consent. The questionnaire included different demographic variables (age, residence, and education level, and working area, nature of job, urban and rural). Total sample size was calculated by WHO calculator was 520 females who were delivered by CS in hospital. Data collection Technique was non probability convenient sampling and data collected patients who were admitted in obstetrical ward with following details also retrieved personal and socio demographic characteristics; reproductive history, type and indication of CS, and maternal and newborn complications. The inclusion criteria were pregnant women who attended at the KAAUH hospital while patients with incomplete profile and details were on exclusion criteria. Statistical Analyses were done by statistical software (SPSS version 24), Mean and standard deviation were calculated for quantitative parametric variables while frequency and percentage computed for qualitative variables.

3. Results

A total of 520 patients were included in the study. Out of which 306 (58.8%) were delivered by emergency cesarean section while 214 (41.1%) were delivered by elective cesarean section from duration of October 2017-October 2018.Descriptive statistics(Mean ± SD) of all quantitative variables like age, Maternal height and weight, parity, BMI, Gestational age are shown in (Table 1). Most of the women belong to Saudi nationality were 488 (93.8%) while others were 32 (6.2%). Age of the patients stratified into three main groups out of which 19-28 years of age were 162(31.2%) while 29-38 years of age were 298(57.3%) and women of age group of 39 -48 years of age were 60(11.5%).Maternal and fetal outcomes of CS were mentioned in (Table 2). Indications of emergency cesarean section were fetal distress 130 (42.5%) and pre Eclampsia which was 4.0(1.1%), followed by intrauterine growth restriction (23.6 %), while only 10.5 % had previous CS. Breech presentation contributed to 5.8% of emergency C/Section, while in elective CS previous CS was the main indication and it was 115 (53.8%) while breech presentations 32(15.4%)

and fetal distress contributed to 6 (2.6%) only of lective section computed in (Figure 1).

CS. Indications for emergency and elective cesarean

Variables	N	Mean ± SD
Age(years)	520	31.6 ± 5.50
Maternal Height(cm)	520	157.9 ± 6.74
Maternal Weight(kg)	520	76.6 ± 15.47
Gestational Age(weeks)	520	38.0 ± 2.48
Body Mass Index(BMI)	520	30.5 ± 5.98
Parity	520	2.0 ± 1.58
APGAR Score (1 min)	520	7.9 ± 1.80

Table 1: Descriptive stastics of quantitave variables.

Variable	Frequency (%)
Maternal Complications n = 520	
No complication	479 (92.1)
Persistent pain	11(2.1)
Need for blood transfusion	8 (1.5)
Postpartum hemorrhage	6 (1.2)
Admission to ICU	7 (1.3)
Complication due to anesthesia	4 (0.8)
Injury of bladder/ureter	4 (0.8)
Uterine rupture	1 (0.2)
Mean blood loss in ml ± SD	578.85 ± 227.18
Duration of stay in hospital, mean ±, (range)	3 ± 1 (1-12)
Characteristics of Pregnancy outcomes n =520	
GA <37 weeks	66 (12.8)
GA ≥ 37 weeks	448 (87.2)
Mean Apgar score at one minute	7.92 ± 1.07
Mean Abgar score at five minutes	9.16 ±.87
Admission to NICU	132 (25.4)
Congenital anomalies	24 (4.7)
Stillbirth	6 (1.2)
Birth Weight in grams n = 467	
Low birthweight <2500	76 (14.6)

Normal birthweight 2500 - <4000	372 (71.5)
Large babies ≥ 4000	19 (3.7)

Table 2: Maternal and fetal outcomes of cesarean section.

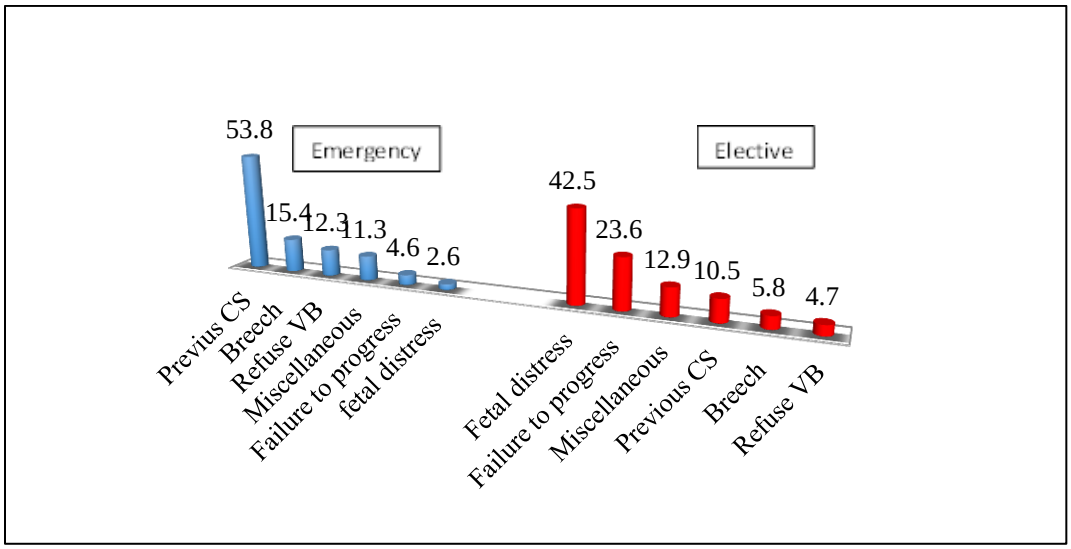

Figure 1: Frequency of indications in emergency and elective C/Section.

4. Discussion

An increase in the number of caesarean sections (CS) conducted for non-medical indications is an important contributor to the global rise in CS rates [11]. Elective caesarean is a term used when the procedure is done at a pre-arranged time during pregnancy to ensure the best quality of obstetrics, anesthesia, neonatal resuscitation and nursing services [12]. The procedure is termed as an emergency caesarean section when it is performed due to unforeseen or acute obstetric emergencies. It is seen that morbidity and mortality are associated more with emergency procedures than with elective procedures [13]. A study conducted by Kramer et al [14] showed that Common primary indications reported for women having a primary CS were failure to progress (25%), presumed fetal compromise (28%) and breech presentation (14%) which is correlated with the results of the current study. The most common indications for women having a repeat CS were previous CS (44%), maternal request as reported by clinicians (12%), failure to progress (10%), presumed fetal compromise (9%) and breech presentation (3%). The increasing rates of cesarean delivery cannot be explained only by medical indications. Maternal requests and physicians performing unnecessary surgeries (without clear clinical or obstetric indication) are other possible reasons for this increase in the private sector. Although CS is a safe operation, when it is performed without medical need, it puts mothers and their babies at risk of short- and long-term health problems. Short-term maternal risks associated with CS include bleeding, injury of urogenital or gastrointestinal organs, postoperative infection and an increased risk of deep venous thrombosis. In the long term, there are increased risks of

severe bleeding following uteroplacental complications such as placenta previa and placenta accrete in subsequent pregnancies. A study conducted in China by Weis et al [15]. newborn may face problems like neonatal respiratory distress including transient tachypnea and persistent pulmonary hypertension which is relevant to our study results A study conducted by Tham et al [15] claimed that there is strong evidence of the negative impacts of cesarean on the reproductive future of women.On the other hand, inadequate access to timely CS may result in perinatal asphyxia, stillbirth, uterine rupture or obstetric fistula, a marker for exceptionally prolonged, obstructed Labor. Short- and long-term maternal and infant problems associated with elective caesarean section are higher than those associated with vaginal birth. Factors that make some women more likely to have complications include obesity, large infant size, prolonged labor, multiple pregnancies, and premature labor which correlate with results of the current study. WHO proposes the Robson classification system as a global standard for assessing, monitoring and comparing CS rates within healthcare facilities over time, and between facilities which is applied in the current study to assess the CS rate. Current study gives an overview of prevalence, indications and complications caused by CS in secondary care hospital settings.There is need of advance research design to further evaluate the long term complication caused by CS and also there is need of mulicentered study.

5. Conclusion

In recent years, there has been a significant increase in the rate of cesarean sections conducted in KAAUH. This brought about a series of concerns regarding the complications that arise from the procedure, as well as, the indications for the procedure to be carried out within the start. This study concludes that there are various indications for CS to be conducted, and that multiple complications can arise from this procedure.

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