

PUERPERAL COMPLICATIONS IN A TERTIARY HOSPITAL

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ABSTRACT

Postnatal period is considered as an important part in reproductive life of women. Even though the antenatal phase and labour are utmost important, puerperal phase of pregnancy cannot be overlooked. Puerperal complication can sometime lead to disabilities for lifelong of women. For the prevention of postnatal complication, antenatal prepadareness is needed. The objective of this study was to find out the incidence of puerperal complications and associated risk factors. This is a retrospective, descriptive study conducted at Tribhuvan University Teaching Hospital, Department of Obstetrics and Gynaecology from April 2019 to March 2020. The cases of puerperal complications were noted from the record book from ward. The individual files were collected from record section. Data was collected from record files and analysed. Total number of deliveries were 4932 in one year. Out of which, 84 cases (1.7%) were admitted due to various puerperal complications. Majority of the women admitted with puerperal complications were between 21-29 years, 59.5%. Sixty-four percent (n=54) were primipara and 35.7%(n=30) were multipara. Seventy-six (90.5%) were term deliveries, 6(7%) were preterm and 2(2.4%) were post term deliveries. Sixty-two (74%) had emergency cesarean section as mode of delivery. Major indication of emergency cesarean section was fetal distress (29.8%, n=25). Surgical site infection (53/84,63%) was the commonest puerperal complication followed by puerperal sepsis (8/84,9.5%). Fifty- three cases of surgical site infection (SSI) were observed in patients who had undergone emergency cesarean section. Associated medical condition like hypertension, diabetes, anemia, obesity was seen in 33.5% (n=33) of the cases. Surgical Site Infection is the most common puerperal complication and commonly seen in women who had undergone emergency cesarean section.

KEYWORDS

Puerperium, Sepsis, Cesearean section, Surgical Site Infection

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INTRODUCTION

Puerperium is the period following delivery during which pregnancy induced maternal anatomical and physiological changes return to the near non pregnant state. Its duration is variable between 4 and 6 weeks.¹ The puerperal period is taken as six weeks as it fits very well into cultural traditions in many countries, where often the first 40 days after birth are considered a time of convalescence for the mother and her newborn infant.²

The postpartum period is considered a critical transitional period for a woman, her newborn and her family, on a physiological, emotional and social level. However, despite being highly important period, postpartum period is relatively overlooked in comparison to antenatal and intranatal phases of pregnancy. Such an eclipse ignores the fact that the majority of maternal deaths and disabilities occur during the postpartum period and that early neonatal mortality remains high.² The complications in puerperium can be divided into immediate which occurs within 24 hours, early complications occurring within 7-10 days, late occurring within 42 days according to its presentation.^{1,2}

Various complications can occur in puerperium such as retained products of conceptus, surgical wound infections, puerperal pyrexia and sepsis, urinary problems, breast related complication, venous thrombosis, depression etc.³ Although, in immediate postpartum period, woman is susceptible to several potentially serious complications, pelvic infection continues to be the frequent factor of maternal morbidity and mortality.¹

Surgical site infection is a common complication as cesarean section is in rising trend world wide ranging from 3% to 15%.⁴⁻⁶ The recent reported incidence of SSI following cesarean section in different countries are India-13%, Nepal-12.6%, Nigeria-9.1%, Tanzania-10.9% and Australia-17%.^{7,8}

Despite recommendations and warnings about risks, cesarean section rates have been constantly increasing across the globe in all type of society including high, middle and even in low- income countries. With the global increase in cesarean section rate, it is expected that the occurrence of SSI will increase in parallel, hence its clinical significance.⁷

In a systematic review of labour events duration of rupture of membranes, suboptimal pre-surgical hemoglobin, duration of surgery and BMI are considered as intrinsic risk factors associated with SSI after CS.⁸⁻¹⁰ Maternal

morbidity related to infections rise by eight-fold higher after caesarean section than after vaginal delivery.¹¹ Identifying risk factors associated with surgical site infection following cesarean section in certain population and hospital setting is important in reducing maternal morbidity and mortality. Based on hospital audit record, the rate of cesarean section had escalated in last ten years in our setting. Re-admission of postpartum women in the hospital is not only the burden to family, also have psychosocial impact on health of a mother.

Psychological problems in the postpartum period are also common. These issues can be lessened by adequate social support and counseling during antenatal visits, during pregnancy or labour and postpartum period.² Several factors like emotional let-down, new responsibilities, disadjustment with puerperal changes, hormonal changes and social burdern etc may be the causative factors.¹² For the urgent acknowledgement of the postpartum complications WHO has proposed hospital visits during postpartum period. The objective of these visits is to reduce the morbidities like puerperal sepsis, PPH, neonatal problems. Present study was carried with the aim of defining the various complications of puerperium in our setting.

MATERIALS AND METHODS

This is a retrospective descriptive study conducted at Tribhuvan University Teaching Hospital, Department of Obstetrics and Gynaecology from April 2019 to March 2020. Total number of deliveries were 4932 in a year. Out of which, 84 case were admitted due to various puerperal complications. The data of post delivery cases with complications admitted within fourty two days in ward were collected from the record book in ward. The individual file from record section were collected for details and variables of the study in relation to puerperal morbidities. Various parameters such as incidence, age, parity, gestational age, mode of delivery, morbidity in relation to them and causes of puerperal morbidity were analysed.

All booked or unbooked cases with puerperal morbidities were included in study. Postpartum morbidities due to other causes, postdelivery cases readmitted beyond 42 days and mothers admitted for neonatal complications were excluded. The data was compiled and entered on SPSS version 20 and were analyzed. Ethical clearance was obtained from Institutional Review Board (IRB) before beginning the study.

RESULTS

There were total of 4932 deliveries in the year. The total number of women presented with puerperal complications were 84. The incidence of puerperal complication was 1.7%.

Majority of the women admitted with puerperal complications were between 21-29 years were 59.5% (n=50), women above thirty years of age were 29.8% (n=25), the group below 20 years of age was 8.3% (n=7), while above 40 years were 2.4% (n=2) (Fig. 1).

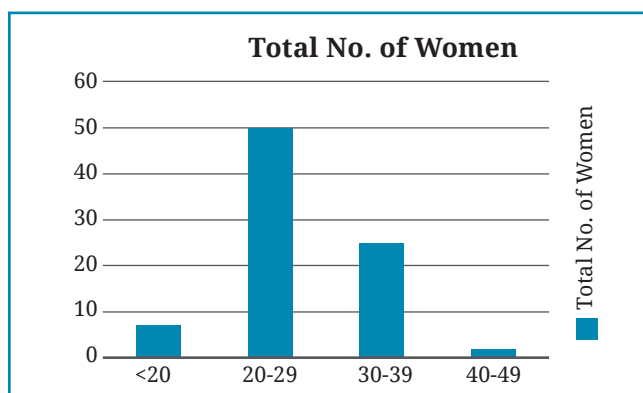


Fig. 1: Age-wise distribution of the patients

Fifty-four (64.3%) were primipara and 30 (35.7%) were multipara. Seventy-seven (91.7%) were booked cases of the hospital where as 7 (8.3%) cases were unbooked.

Out of 84 total cases who had puerperal complications, 76(90.5%) were term deliveries, 6 (7%) were preterm and 2 (2.4%) were post term deliveries.

Spontaneous onset of labour was observed in 58.3% (n=49) women while labour was induced in 39.31%(n=33) cases.

Of total cases of puerperal complications, sixty-two (74%) cases had emergency cesarean section, 20(23.8%) women had vaginal delivery, 2(2.4%) had elective lower segment cesarean section. (Table-1)

The major indication of cesarean section was fetal distress 29.8% (n=25) followed by non-

Table 1: Puerperal complication in relation to Delivery

Mode of delivery	Complications n (%)
Emergency cesarean section	62 (74%)
Vaginal delivery	20 (23.8%)
Elective cesarean section	2 (2.4%)

progress of labour (NPOL) in 13.1% (n=11), failed induction in 8.3% (n=7) cases.

Regarding labor events 45.2% (n=38) parturients had no premature rupture of membrane(PROM) where as 34.5% (n=29) had premature rupture of membrane with leak to delivery interval less than eighteen hours, while 20.2% (n=17) women had PROM with leak to delivery interval of more than 18 hours.

Out of total 4932 deliveries in a year,2272 (46.06%) had cesarean delivery. Total patient who underwent emergency cesarean section were 1687, of which 53 cases (3.1%) had surgical site wound infection requiring admission and resuturing.

Common comorbidities associated with emergency cesarean section in 48.8% (n=41), anemia with lower segment cesarean section in 11.9% (n=10), hypertension 10.7% (n=9), anemia 9.5% (n=8), diabetes 3.6% (n=3), obesity 3.6% (n=3), tinea cruris, lupus nephritis and glomerulonephritis each accounting 1.2%. No comorbid was found in 8.3% (n=7) cases (Table-2).

Common presenting symptoms were discharge from wound in 45 (53.6%) women, fever in 13

Table 2: Lists of puerperal complication and mode of delivery

Causes of puerperal Complications	Mode of delivery		
	Vaginal	LSCS	Total
Surgical site infection	0	53	53
Urinary tract infection	4	2	6
Endometritis	2	5	7
Eclampsia	0	1	1
Cardiomyopathy	0	1	1
Lower respiratory tract infection	2	0	2
Episiotomy site infection	3	0	3
Increased blood pressure	3	1	4
Spinal headache	0	1	1
SLE flare lupus nephritis	1	0	1
Post-partum blues	1	0	1
Secondary PPH	1	0	1
Coagulopathy	1	0	1
Urinary retentation	1	0	1
Retained placenta	1	0	1
Total	20	64	84

(15.4%) women, per vaginal bleeding 6 (7.1%), shortness of breath 5 (6%), wound gapping 5 (5.9%). Others were increase of blood pressure 3 (3.6%), generalized tonic clonic seizure in 1 (1.2%), pain at wound site in 1 (1.2%), not able to pass urine in 1 (1.2%), none in 4 (4.8%).

Causes for puerperal complication are surgical site wound infection (54) UTI(6), endometritis (7), episiotomy wound infection (3), increase blood pressure (4) and one case of eclampsia, cardiomyopathy, lower respiratory tract infection, postpartum blues, secondary PPH, coagulopathy, urinary retention and retained placenta each.

DISCUSSION

Recent papers published from different institutes in the country have reported comparable incidence of puerperal complications.¹³⁻¹⁴ The incidence of puerperal complications was 1.7% in this study. It was 1.5% and 2.9% in studies done by Malla *et al* and Shrestha *et al* respectively.^{13,14}

Almost 60% patients with puerperal complications in this study were less than 30 years and more primiparous. Kaur *et al.* also observed that lower maternal age and primiparous were high risk factors for infectious puerperal complications.¹⁵ Contrary to this, Molina *et al* showed that with increasing age during pregnancy, risk of medical complications also increases along with the relatively poor healing capacity of human body.¹⁶

With the global increase in cesarean section rate, it is expected that the occurrence of surgical site infection increases proportionately.⁷ Surgical site infection was reported 25.9% following puerperal sepsis(33.3%) in the study done by Malla *et al.*¹³ Vallely *et al* also reported puerperal sepsis (34.8%) as the commonest complication.⁶ Although the SSI rate is increased proportionately with increased number of cesarean deliveries, the incidence of puerperal sepsis was reduced because of adequate antibiotic coverage during surgical interventions.⁶

In our study postpartum morbidity was high in cesarean group (76.1%) than in vaginal (23.8%). Similar to our study, the Cohort study conducted in Canada between 1995 and 2001 showed that caesarean section delivery was associated with significantly increased risk of postpartum morbidities compared to spontaneous vaginal delivery.¹⁷ In a study by Sharma *et al*, it is shown that the incidence of complication was higher in cesarean section

group than in vaginal group.¹²

Normally during pregnancy, when the membrane ruptures, ascending infection reduces the protective mechanism of amniotic fluid. Prolonged labor and rupture of membranes aggravate the colonizing normal flora of the lower genital tract leading to surgical wound and peritoneal cavity contamination.¹⁸ In the study done by Shrestha *et al.* SSI was found to be common in women who had rupture of membrane before surgery.¹⁹ Khaskheli *et al.* had reported 39.53% cases of wound infection where majority of the women (83.72%) had rupture of membranes at the time of admission.³ However, this study showed 28% had prelabour rupture of membrane and had SSI. Meconium stained liquor was the common indication for emergency cesarean in our study and in the study done by Pandit *et al.*²¹

Emergency cesarean sections are usually performed in patients who are already in labour. Multiple per vaginal examinations contaminate the endometrium and prolonged duration of rupture of membrane increases the risk of hospital acquired infection especially chorioamnitis and surgical site wound infection which are inevitable after emergency surgery. Chhetry *et al.* also concluded that emergency procedures were more likely to develop SSI as compared to elective cesarean.²⁰

It is a well-known fact that the uncontrolled diabetes leads to glycation of end products and impair the host immune response leading to wound infection.¹⁸

Similarly, hypertension causes diffuse vasospasm with poor blood flow in

affected area causing poor wound healing. Likewise, adequacy of haemoglobin has direct effect on wound healing. The existing medical comorbidities can lead to puerperal complication and thus becoming the established risk factors for SSI.^{18,22,23}

Surgical site infection was seen in 15.4% of the women having comorbidities such as hypertension, diabetes, anemia and obesity in our study. Similarly to our study, Mpogoro J *et al*, Trans *et al* and Abdallah *et al* had concluded that hypertensive disorders of pregnancy, anemia and diabetes are greatly associated with post cesarean SSI.^{18,22,23}

Early identification of puerperal problems could reduce the incidence of disability and death of mother. Postnatal visits play crucial role to get contact with the health facilities which play substantial contribution in identifying puerperal complications. WHO has resumed the formula for post-natal visits, however it can

be scheduled according to access and severity of the complications expected.²

As in the present study major puerperal complication was of infectious morbidity, infection prevention measures should be emphasized so as to reduce maternal morbidity.

Surgical site infection was the frequent complication in postpartum period seen in this study. SSI was seen more in women who had undergone emergency cesarean section. A significant number of puerperal complications

were seen in women who had medical co morbidities.

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