

Puerperal Sepsis and its Cause in Patan Hospital

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Received: February 07, 2015; Accepted: May 18, 2015

Aims: This study was done to find out morbidity related with puerperal pyrexia/sepsis and its risk factors.

Methods: This was retrospective study conducted from January 2011 to December 2012 at Department of Obstetrics and Gynaecology, Patan Hospital, Kathmandu, Nepal. All women who delivered in this hospital within 42 days of delivery with puerperal pyrexia/sepsis diagnosed on clinical examination and relevant investigations were included in the study. Women with malaria, typhoid fever and other fever were excluded. The data was recorded in predesigned proforma and analyzed.

Results: During this period, there were 122 cases of puerperal pyrexia. Puerperal pyrexia accounted for 6.28% of 1945 admissions. Most of the women were aged between 20-29 years, primiparous and booked cases with absent membranes. The causes of puerperal pyrexia in our study were urinary tract infection (47.5%), wound infection (20.5%), endometritis (19.7%) retained product of conception (8.2%), pyoperitoneum (2.5%) and septicemia (1.6%).

Conclusions: Puerperal pyrexia/sepsis is one of the causes of preventable maternal morbidity and mortality though in our study it was not proved to be very high in number. Optimal aseptic measures during labour can prevent most of the cases.

Keywords: Nepal; Patan Hospital; puerperal sepsis.

INTRODUCTION

Puerperal sepsis is defined as the infection of the genital tract occurring at labour or within 42 days of the postpartum period. It presents commonly with fever and abdominal pain, foul smelling vaginal discharge and sub involution of the uterus.¹ According to the study done in Nigeria, puerperal sepsis is second leading cause of death accounting for 26.3% of maternal deaths.² WHO reported 358,000 maternal deaths occurring during childbirth and 15% are associated with puerperal sepsis.³ Puerperal pyrexia and sepsis are among the preventable conditions in both developing as well as developed countries.⁴ It usually occurs after discharge within 24 hours of delivery. The predisposing factors are anemia, low socioeconomic condition, prolonged labour, frequent vaginal examinations in labour, premature rupture of membranes for prolonged period.⁵ Puerperal sepsis remains the common cause of maternal morbidity

and mortality in developing countries and delay in detection and treatment may lead to obstetric shock and even death. Oliver Holmes, in 1843, was the first to establish that puerperal fever was contagious. Proper drug and better technology needs to be combined with effective health system intervention to reduce infection.⁶ The main focus is on infection control measures and hand hygiene, and staff to bed ratios. These have been the product of work done which targeted hand hygiene as a flagship campaign.⁷ The main aim of this study was to know the causes of puerperal pyrexia/sepsis and its morbidities so as to take the necessary action for its prevention.

METHODS

This was a retrospective study done after reviewing the charts between January 2011 and December 2012. These women were diagnosed on basis of clinical examination and relevant investigations. Women having medical diseases like malaria, typhoid fever were excluded from the study. The data were kept in predesigned proforma. The variables included were age, parity, booking status, onset of labour, status of the membranes, mode of delivery, duration of labour, haemoglobin level and the morbidity. The data entry

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and analysis was done in SPSS and the result was presented in terms of percentage/proportions. Ethical approval was taken from the hospital.

RESULTS

Over the study period 122 patients presented with puerperal pyrexia representing 6.27% of 1945 admissions in Gynaecology ward of Patan Hospital. About three out of five patients with puerperal pyrexia were aged 20-29 years whereas around one out of five was below 20 years (Table 1).

Table 1. Sociodemographic characteristics of the patients (n=122).

Variables	Frequency	Percentage
Age in years		
< 20	23	18.9
20-29	74	60.7
30+	25	20.5
Parity		
1	63	51.6
2	39	32
3+	20	16.4
Booking status		
Booked	80	65.6
Unbooked	42	34.4

Table 2. Obstetric Profile of the patients (n=122).

Variables	Frequency	%
Mode of delivery		
SVD	76	62.3
LSCS	46	37.7
Duration of labor		
<12 hours	52	42.6
>12 hours	70	57.4
Membrane status		
Present	51	41.8
Absent	71	58.2
Hemoglobin level (gm%)		
<10	66	54.1
>10	56	45.9

Table 2 illustrates the obstetric profile of the patients. Around two-third of the cases with puerperal pyrexia/sepsis delivered through vaginal delivery. Further, nearly two out of five women had less than 12 hours of labour and membrane was present. Nearly one out of two women (45.9%) developing puerperal sepsis had haemoglobin level less than 10 mg/dl.

Table 3. Morbidities of the patients (n=122).

Morbidities	Frequency	Percentage
Urinary tract infection	58	47.5
Wound infection	25	20.5
Endometritis	24	19.7
Retained poc	10	8.2
Pyoperitoneum	3	2.5
Septicemia	2	1.6

Table 3 shows that around half of the women had urinary tract infection whereas one in five had wound infection and endometritis. Further, nearly one in 10 had retained product of conception.

DISCUSSION

Puerperal pyrexia and sepsis is an important public health problem and one of the leading causes of maternal morbidity and mortality. Due to the advent of antibiotics and proper aseptic technique there has been significant reduction of these cases in both developed as well as developing countries. This study includes more of puerperal pyrexia cases and the actual puerperal sepsis was only seen in 19.7% cases. In this study the mothers with puerperal pyrexia was younger (60.7%) and with lower parity (51.6%) which was similar to the study by Shamshad.⁸ The reason behind that could be lack of education relating with unhygienic conditions. Another study showed age and parity tend to be younger 70% of less than 30 years and 30% less than parity two.⁹ Khaskheli reported puerperal sepsis more in un-booked grand multiparous patients¹⁰ but in our study booked cases were more (65.6%) which may be because booked cases were aware of seeking health care.

Our study revealed 62.3% cases of puerperal pyrexia with normal vaginal delivery that may be due to frequent vaginal examination along with neglect regarding the six 'c' (clean hands, clean delivery surface, clean cord cutting instrument, clean perineum and clean cutting surface). In developed countries the main contributing factor for puerperal sepsis is caesarean section.¹¹ There is more tissue trauma and manipulation than in vaginal delivery. There is increased rate of puerperal pyrexia with prolonged labor in our study (57.4%). Duration of labor directly contributes to development of postpartum sepsis as prolonged labor with frequent vaginal examinations lead to sepsis as a result of

prolonged state of an open cervix often with ruptured membranes impairing natural mechanical barrier to ascending infection from vagina.¹² Majority of these women (58.2%) had rupture of membrane at the time of labor. Vacca reported that operative delivery was significantly associated with sepsis especially when followed by prolonged labour.¹³ In a study at Ife Hospital Nigeria, the predisposing factor associated with sepsis was anemia in 69.2% of cases⁵ while it is 54.1% in our study. The most frequent morbidity was urinary tract infection (47.5%) and wound infection (20.5%). This may be attributed to improper asepsis during catheterization in labour. In three of the cases patient had abdominal distension along with fever. Exploratory laparotomy was performed and around 500 ml of pus was drained. The serious complication was septicemia, which was seen in two of the cases. One patient of urinary tract infection had acute renal failure needing intensive care unit admission. Shamshad reported 14.2% mortality related to sepsis but there was no mortality seen in our study.

An estimated 15% of all maternal deaths are due to sepsis.¹⁴ Mortality depends on proper management of sepsis and its complications.

CONCLUSIONS

Puerperal pyrexia is a preventable and treatable illness, however timely recognition is very important for the preventive management. The risk factors like mode of delivery, status of membranes and duration of labour leading to this condition is of prime importance as it can cause serious maternal morbidity and mortality and proper aseptic measures during labour including catheterization can prevent most of the cases.

DISCLOSURE

The authors report no conflicts of interest in this work.

No violation of human rights and safety.

Funding: Nil

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