|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
PubMed (National Library of Medicine ID: 101738825)
Index Copernicus Value 2018: 75.71
Original Research Article
Volume 4, Issue 9; September: 2020; Page No. 116-119

STUDY TO EVALUATE THE FREQUENCY, AETIOLOGIES, MATERNAL AND PERINATAL OUTCOME AND COMPLICATIONS OF OBSTRUCTED LABOUR: AN OBSERVATIONAL STUDY

Dr. Ruby Kumari
Senior Resident, Department of Obstetrics and Gynecology, Government Medical College and Hospital, Bettiah, Bihar, India.

Article Info: Received 02 September 2020; Accepted 27 September 2020
DOI: https://doi.org/10.32553/ijmbs.v4i9.1519
Corresponding author: Dr. Ruby Kumari
Conflict of interest: No conflict of interest.

Abstract

Aim: To study the frequency, aetiologies, maternal and perinatal outcome and complications of obstructed labour.

Methods: This cross-sectional study was carried out in the Department of Obstetrics and Gynecology at Government Medical College and Hospital, Bettiah, Bihar, India from June 2018 to Jan 2020. Total 200 patients with features of obstructed labour were enrolled consecutively in this study.

Results: The total number of 4200 deliveries was occurred during this study period of which obstructed labour was accounted for 200 cases and was given an incidence of 4.76%. The highest frequency was found among the 25-30 years of age group 107(53.5%) and the least frequency among those >35 years was 6 (3%). The mean age was 25±4.38 years, 47.5% case was unbooked and 49.5% had primary education only. The highest frequency (51.5.%) was found among the primigararida while the least was among the multigravide. The commonest cause of obstructed labour was cephalopelvic disproportion (46.5%) followed by malposition (24%), malpresentation mostly shoulder presentation (11.5%) and breech presentation (10%). Fetal abnormality was found mostly severe hydrocephalous (2.5%).

Conclusions: The commonest cause of obstructed labour is the cephalopelvic disproportion, malposition and malpresentation of which shoulder presentation & breech presentation are the most common. Severe hydrocephalous is the most common fetal abnormality found in this study.

Keywords: cephalopelvic disproportion, malpresentation, obstructed labour

Introduction

Labour is considered obstructed labour when the presenting part of the foetus cannot progress into the birth canal, despite strong uterine contractions which leads to various maternal or foetal complications. [1-4] Obstructed labour accounts for about 8% of all maternal deaths in developing countries like India. [5] It is a leading cause of hospitalization, comprising up to 39% of all obstetric patients in developing countries. [6] Obstructed labour is the single most important cause of maternal death and is one of the leading causes of perinatal mortality . [7] Maternal mortality ranges between 1% and 13% and perinatal mortality between 74% and 92%. [8,9] It is one of the most common preventable cause of maternal and prenatal morbidity and mortality in developing countries.[10-12] Each year, 210 million women become pregnant of whom 20 million will experience pregnancy related illness and 500,000 will die as a result of complications of pregnancy or childbirth.[13] In 1987, the World Health Organization launched the Safe Motherhood Initiative, which aimed to reduce maternal morbidity and mortality by 50% by year 2000.This initiative did not succeed, but maternal health continues to be a major focus of WHO effort. The current WHO initiative[14] is to reduce maternal mortality to 75% of 1990 level by 2015. If this is to be successful, the problem of obstructed labour will need to be addressed effectively.

Maternal mortality from obstructed labour is largely the result of ruptured uterus or puerperal infection, whereas perinatal mortality is mainly due to asphyxia. Significant maternal morbidity is associated with prolonged labour, since both postpartum haemorrhage and infection are more common in women with prolong labour. Obstetric fistulas are long term problems. Traumatic delivery affects both mother and child.[13,14]

There are differences in the behaviour of the uterus during obstructed labour, depending upon whether the women has delivered previously. The pattern in primigravida women (typically diminishing contractility with risk of infection and fistula) may result from tissue necrosis whereas in parous women, contractility may be maintained with risk of uterine rupture. [15]

Material and methods

This cross-sectional study was carried out in the Department of Obstetrics and Gynecology at Government Medical College and Hospital Bettiah, Bihar, India from June 2018 to January 2020.

The study protocol was reviewed by the Ethical Committee of the Hospital and granted ethical clearance.

Methodology

Total 200 patients with features of obstructed labour were enrolled consecutively in this study. Both prime and multi-gravida patients admitted with obstructed labour and developing this condition after admission was included. Patients having hypertension, convulsion or other medical diseases were excluded.

A detailed history including obstetric history, socio-demographic history, any medical disease, details of intrapartum events were recorded. Demographic factors like age, socio-economic condition, educational status and obstetrical history like parity, previous mode of delivery and previous outcome of baby were recorded. Druring admission, the general condition of mothers were assessed as well as the fetal lie, presentation, position and heart sound were recorded. Pelvic examination was carried out to asses the cervical dilatation, state of liquor amni, position, presentation, pelvic assessment, degree of caput, moulding, uterine rupture. Destructive operations included craniotomy was done in dead fetus with cephalic presentation with full cervical dilation. APGAR score at 5 minutes of 7 and above was taken as normal while secores less than 7 was taken as birth asphyxia. Condition of the patient, preoperative and postoperative findings, mode of delivery, associated complication (both mother and fetus) were recorded. At post partum period data regarding maternal outcome were recorded which included abdominal distension, postpartum hemorrhage, fouel smelling discharge, fever, character of wound, burring micturiation, urinary incontinence. Fetal condition was evaluated by the nature of feeding, development of jaundice, umbilical condition, and features of neonatal infection.

Statistical Analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 19 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages.

Results

Table 1: Socio-demographic characteristics of study population

Socio-demographic characteristics	Frequency	Percentage
Age		
Below 20 year	33	16.5
20-25	107	53.5
25-30	37	18.5
30-35	17	8.5
>35	6	3
Parity		
0	103	51.5
1-4	79	39.5
5-8	18	9
Educational Status		
Illiterate	66	33
Primary	99	49.5
SSC	21	10.5
HSC	14	7
Occupation		
Service holder	47	23.5
Businessman	21	10.5
Day labourer	91	45.5
Farmer	41	20.5
Socio-economic status		
Poor	138	69
Average	47	23.5
Good	15	7.5
Area of Residence		
Rural	163	81.5
Urban	37	18.5
Antenatal check up		
Nil	95	47.5
Irregular	80	40
Regular	25	12.5
Duration Labour (Hours)		
12-24	154	77
>24	46	23
Oxytocin injection given		
Yes	71	35.5
No	129	64.5
Total	**200**	**100.0**

Table 2: Distribution of Risk factors among obstructed labour deliveries

Risk factors	Frequency	Percentage
Cephalopelvic disproportion	93	46.5
Malposition	48	24
Shoulder presentation	23	11.5
Breech presentation	20	10
Face presentation	8	4
Hydrocephalous	5	2.5
Cervical fibroid	3	1.5
Total	**200**	**100.0**

Table 3: Distribution of Mode of Delivery among the study population

Mode of delivery	Fequency	Percentage
Lower segment caesarean section	161	80.5
Craniotomy	29	14.5
Laparotomy with repaired ruptured uterus	5	2.5
Subtotal Hystrectomy	5	2.5
Total	**200**	**100**

Table 4: Distribution of Maternal complications among obstructed labour deliveries

Maternal Complications	Frequency	Percentage
Abdominal distension	49	24.5
Puerperal sepsis	30	15
Wound infection	27	13.5
Post partum hemorrhage	18	9
Urinary tract infection	11	5.5
Ruptured uterus	11	5.5
Burst abdomen	4	2
Vesico vaginal fistula	4	2
Maternal death	2	1
No Complication	44	22
Total	200	100.0

Table 5: Distribution of fetal Condition during birth (n=200)

Fetal condition	Frequency	Percentage
Live birth	166	83
Still birth	34	17
Total	**200**	**100**

Table 6: Distribution of fetal Complication among the live birth (n=166)

Fetal Complication	Frequency	Percentage
Asphyxia	71	35.5
Neonatal jaundice	20	10
Umbilical sepsis	17	8.5
Neonatal death	5	2.5
No Complications	53	26.5
Total	166	83

Discussion

In this study obstructed labour accounted for 4.76% hospital delivered within the range reported for other developed countries. In India[16] its incidence was found 2.5%. In Eastern Nigeria[17] study over a period of 5 years revealed the incidence was 4.7%. This incidence of this study is reflective of overall health system, educational status, and poverty, lake of vigilant of obstetric care, delayed referral and poor facilities for transport of patients from remote area. Mostly obstructed labour occurred in non-booked, primigravida, patient from rural area and those belonging to poor class, illiterate or having primary education. Health education is suggested. Especially for primigravida whose pelvis has not been tested. Duration of labour is the important factor that is significantly associated with maternal and perinatal mortality. In this study the most common cause of obstructed labour was cephalo-pelvic disproportion followed by malpresentation and mal-position, which was relevant to other studies.[3,4] In grand multipara however malpresentation was more common than cephalo-pelvic disproportion which was statistically significant in this study. The common mode of delivery was LUCS because of its safety. Although some still superior to LUCS in moribund cases; however studies have shown that the use of regional anaesthesia has made LUCS to be safe and its outcome to be comparable to that of destructive operation in moribund cases.[18] Among the destructive operation only craniotomy was done as it was easier to perform. The risk of developing complication with either LUCS or destructive operation was not statistically significant which showed that either method of relieving obstruction have favorable outcome in this tertiary care centre because of advent of new generation of antibiotics, better surgical method, anaesthetic facilities, good pre-operative and post operative care which has made LUCS safe. Patients before discharge were counselled to book early in subsequent pregnancies and deliver in well established health care facilities where adequate monitoring is available with facilities for caesarean section. Regarding complications of obstructed labour abdominal distension was the most common complication followed by urinary tract infection, puerperal sepsis post partum haemorrhage. Rupture uterus is the common sequallae of obstructed labour.[19] In this 5.5% cases were ruptured uterus. This was due to referral of very mismanaged patient. This study has shown that uterine rupture was uncommon among the primigravida as primigravid uterus meets obstructed labour with inertia whereas multigravid uterus meets obstruction with hypertonic uterine contraction. Urinary tract infection was due to prolonged catheterization. Maternal mortality rate was about 1% in this study which is lower than that of other developing countries[2,3,10-12] because of meticulous care. In this study maternal death occurred due to extensive rupture. Vesico-vaginal fistula is a well known late squeal of obstructed labour superscript.[20-22] In this study Vesico vaginal fistula was developed 2% cases. Obstructed labour can be prevented by providing optimal obstetric care, good nutritional support as nutrition is essential for normal pelvis[4]; however it takes long time to attain the goal. Another important potential intervention for prevention of obstructed labour was antenatal care coverage. The strength of this study is that a proper predesigned questionnaire has been made for collecting data, better surgical method, good pre-operative and post operative care. Information regarding the duration of labour was not satisfactory as labour at home and attended by untrained dais. In the absence of sophisticated fetal and maternal

monitoring devices cases were evaluated clinically. The uterine activity measurement was not possible and assessment of severity of fetal distress sometimes was not accurate.

Conclusion

In this study the commonest cause of obstructed labour is the cephalopelvic disproportion, malposition and malpresentation of which shoulder presentation & breech presentation are the most common. Severe hydrocephalous is the most common fetal abnormality found in this study. To decrease these unfortunate and mostly preventable obstetrics complications, restructuring to MCH service should be done with particular attention to increase the community awareness, decentralization to maternity service, effective health care and effective referral system.

Reference

1. Ammanuel Gessessew, Mengiste Mesfin. Obstructed labour in Adigrat Zonal Hospital, Tigray region, Ethiopia, Ethiop. Health Dev. 2003;17(3):175-80.
2. Gayam A. Obstructed labour at a district hospital. Ethiop Med J. 2002;5(2):37-40
3. Philpott RH. Obstructed labour Clinics in Obstetric and Gynecology. 1982;9(3): 625-640
4. Konje JC, Ladipo OA Nutrition and obstructed labour. Am Jclin Nutr, 2000; 72(1): 291-297
5. Cron J. Lessons from the developing world: Obstructed labor and the vesico-vaginal fistula. Med Gen Med. 2003;5:24.
6. Mekbib T, Kassaye E, Getachew A, Tadesse T, Debebe A. The FIGO save the Mothers Initiative: The Ethiopia-Sweden collaboration. Int J Gynaecol Obstet. 2003;81:93-102.
7. Weeks A, Lavender T, Nazziwa E, Mirembe F. Personal accounts of 'near-miss' maternal mortalities in Kampala, Uganda. BJOG 2005; 112:1302-7.
8. Rahman MH, Akter HH, Khan Choudhury ME, Yusuf HR, Rochat RW. Obstetric deaths in Bangladesh 1996-1997. Int J Gynaecol Obstet 2002; 77:161-9.
9. Hofmeyr GJ, Say L, Gülmezoglu AM. WHO systematic review of maternal mortality and morbidity: The prevalence of uterine rupture. BJOG 2005;112:1221-8.
10. Daffallah SE, Ambago J, E1- Agib F. Obstructed labour in a teaching hospital in sudan. Saudi Med. J. 2003; 24: 1102-1104
11. Karis A, Dasgupta M, Sanghamita M. Management of obstructed labour: a retrospective study. J Obstet Gynaecol Ind 2005; 55(1): 48-51
12. Wall LL. Dead mothers and injured wives; The social context of materral mortllity and morbidity among the Mausa of Northern Nigeria. Stud Fam Plan, 1998; 29: 341-359
13. McCarthy M. What's going on at the World Health Organization? Lancet 2002;360:1108-10.
14. McCarthy M. A brief history of the World Health Organization. Lancet 2002;360:1111-14.
15. Nelson JP, Lavinder T, S Quenby et al. obstructed labour, Reducing maternal death and disability during pregnancy. Br Med Bull. 2003;67(1):191-204
16. Kwast B. E. Obstructed labour, Its contribution to maternal mortality. Midwifery. 1992; 8CD: 3-7
17. Ozumba BC. Uchegbuth. Incidence and management of obstructed labour in Estern Nigeria, Obstet Gynanaecol. 1991;31(3):213
18. Biswas A, chak raborty ps, Das HS, etal. Rote of destructive opretation in modern day obstetrics. J Indian Med Assoc, 2001; 99(5):248
19. A boyej AP. Ijaija MD. Yahaya UR. Rupture Uterus: a study of 100 consecutive cases in Nigeria. J Obstet Gynaecol Res, 2001;27(6):341
20. Danso KA, Martey JO, Wall LL, Elkins TE. The epidemiology of genitourinary fistulae in Kumasi, Ghana, 1977-1992. International Urogynecology J 1996;7(3):117-120
21. National Clinical service protocol for obstetric and Neonatal care. FMOH Nigeria. 2006; 317
22. Naeye RL, Dozor A, Tafari N, Ross SM. Epidemiological features of perinatal death due to obstructed labour in Addis Ababa. BJOG: An International J Obstet Gynaecol 1977;84(10):747-750