Original Article

Pattern of Obstructed Labour at a Public Sector University Hospital of Sindh, Pakistan

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ABSTRACT

OBJECTIVE: To determine the frequency, risk factors, complications and outcome of obstructed labour in our setup.

STUDY DESIGN: A retrospective study.

SETTING: Obstetrics and Gynaecology Unit IV, Liaquat University Hospital, Jamshoro – Pakistan from January 2004 to December 2006 (three years).

Methods: Patients' records, labour room registers, operation theatre books and perinatal records were reviewed retrospectively to gather information about patients admitted with obstructed labour.

RESULTS: Out of 2126 hospital deliveries during the study period, 44 (2.1%) were admitted with obstructed labour as an emergency. Only 13 (29.5%) had received antenatal care at some stage of pregnancy. Thirty-two (72.2%) patients belonged to rural areas. Mean duration of labour was 15.9±11.6 hours. Cephalo-pelvic disproportion in 22 (49.3%) cases was the most common risk factor of obstruction, followed by malposition/malpresentation in 19 (43.3%) cases. Caesarean section was the most common mode of delivery (81.1%). Three (6.8%) patients had ruptured uterus. Still birth rate was very high i.e. 14 (31%) and neonatal deaths were 4 (9%), while 26 (49%) babies survived with minor problems.

CONCLUSION: Obstructed labour still poses a great maternal and foetal problem in our setup. Malpractice by untrained persons is a major factor. Most of these cases are preventable by proper antenatal care provided by properly trained persons.

KEY WORDS: Obstructed labour, antenatal care, caesarean section, perinatal mortality, complications.

INTRODUCTION

Obstructed labour (OL) results from failure of descent of the foetal presenting part in the birth canal for mechanical reasons, in spite of good uterine contractions.[1-3] Obstruction could be because of faults in maternal pelvis (abnormal shape or size) or the foetus (abnormally large, presenting abnormally, malpositioned or congenitally abnormal).[3-6] Obstructed labour is a life threatening obstetric complication associated with significant maternal and foetal morbidity and mortality.[1,3-5] Advances in obstetric care have made OL near obsolete in the developed world. However, this problem continues to plague thousands of women each year in developing countries.[2,7] Incidence of OL in developing countries ranges from 2% to 8% of all hospital deliveries.[6-10] It is an indicator of the inadequacy and poor quality of obstetric care. The problems related to this condition are still very common in our country where the level of antenatal care is unsatisfactory as compared to Western countries where antenatal care is very satisfactory. For this reason a significant proportion of patients present with a full blown picture of OL and its sequelae in our country.[5,11] Obstructed labour comprises one of the five major causes of maternal mortality and morbidity in developing countries.[1,12] The immediate causes of maternal death resulting from OL include ruptured uterus, complications of caesarean section and anaesthesia, postpartum haemorrhage and puerperal sepsis.[4,6,12,13] In the infant, neglected OL may cause asphyxia leading to still birth, brain damage and neonatal death.[4,8,12,15] The management of such cases requires a balanced decision by the obstetrician regarding the best method of relieving the obstruction with least hazard to the mother and foetus (if alive).[1,2] Different modes of management are practiced like total or sub-total hysterectomy, caesarean section, vacuum or forceps delivery, evisceration and symphisiotomy.[1] This study was carried out to determine the frequency of risk factors, complications and foetomaternal outcome of obstructed labour, so that the problem related to this condition could be looked in and preventive strategies can be formulated.

PATIENTS AND METHODS

This retrospective study was carried out at Obstetrics and Gynaecology Unit IV, Liaquat University Hospital,

Jamshoro – Pakistan from January 2004 to December 2006. This unit is a 36 bedded ward, which was established in 2002, and received a limited number of patients from Jamshoro and its surrounding districts like Dadu and Hyderabad. All the patients admitted with OL or those developing this condition in this hospital were included in the study. Patient records, delivery room registers, operating theatre books and perinatal records were reviewed retrospectively to retrieve information about risk factor including CPD, malposition, malpresentation, deep transverse arrest, etc. A predesigned proforma was used to collect information about age, parity, antenatal and intrapartum events. Condition of the patient at the time of admission was noted along with cause of obstruction, mode of delivery, associated complication, maternal outcomes (like haemorrhage, rupture, pyrexia, peritonitis, vesicovaginal fistula) and foetal/neonatal outcome (still birth, apgar scores, neonatal death). Classification was according to standard definitions. Mothers were said to have antenatal care when they visited a health care facility at least once during the pregnancy. A patient with at least one previous delivery past 24 completed weeks of pregnancy was classified as multigravida, and grandmultipara when the number of previous similar deliveries were at least five. Perinatal mortality refers to a still birth or neonatal death within one week of life. All data were analysed using SPSS version 11.0.

RESULTS

During the study period, 2126 hospital deliveries occurred, out of which 44 (2.1%) ended up with OL. The majority of cases i.e. 32 (72.2%) came from rural areas and only 13 (29.5%) had received antenatal care at least once. The age ranged from 16-years to 40-years (mean 26.7±5.9 years), while most of them belonged to age group 20-29 years. OL was more common in primigravidae i.e. 21 (47.7%) followed by grandmultipara i.e. 19 (43.2%) as detailed in **Table I**. Nearly all patients were admitted through the emergency department and most of them, i.e. 31 (70.4%), had history of labour for 12-24 hours. The mean duration of labour was 15.9±11.6 hours **(Table II)**. Forty-one (93.2%) of the patients in the study had received oxytocin injection either by traditional birth attendant (TBA) at home or by doctor at private clinic. Once the diagnosis of OL was made the patient required urgent and active resuscitative measures followed by immediate delivery. Twenty-three (52.3%) patients were presented with moderate level of obstruction, and 20 (45.4%) belonged to District Jamshoro. Cephlo-pelvic disproportion was identified as a common cause in 22 (49.9%) patients, followed by foetal malposition and malpresentation in 19 (43.3%) cases **(Table III)**. Caesarean section was found as the commonest mode of delivery (81.8%). In 3 (6.8) cases ruptured uterus was diagnosed at the time of caesarean section and was repaired **(Table IV)**. All the deliveries were conducted by senior registrars and consultant (where needed), followed by close surveillance in the postoperative ward or intensive care unit (ICU). Many patients had more than one complication. The most common complication was puerperal pyrexia (22), followed by extension of uterine tears and haemorrhage (6), peritonitis (6) and postpartum haemorrhage (5). Two patients had developed vesicovaginal fistula that had to be repaired later on. Wound dehiscence in one patient needed secondary suturing **(Table V)**. The mean weight of the neonates was 3000±388 grams. Five minutes Apgar score at birth was 0 (still birth) in 14 (31.8%) neonates, 10 (22.7%) needed admission to special baby care unit (SBCU) due to complications. Neonatal deaths were 4 (9%) while 26 (59%) babies survived with minor problems. Perinatal mortality was 40.9% **(Table IV)**.

TABLE I:
DISTRIBUTION OF CASES BY AGE AND PARITY (n=44)

Age	Frequency	Percentage
<20 years	12	27.3
20-29 years	23	52.2
30-39	8	18.2
>39 years	1	2.3
Parity		
Primigravida	21	47.7
Para1-4	4	9.1
Para 5 and above	19	43.2

TABLE II:
DURATION OF LABOUR IN WOMEN WITH OBSTRUCTED LABOUR (n=44)

Duration	Frequency	Percentage
Up to 12 hours	9	20.5
12-18 hours	25	56.8
18-24 hours	6	13.6
> 24 hours	4	9.1

TABLE III:
RISK FACTORS FOR OBSTRUCTED LABOUR (n=44)

Risk Factor	Frequency	Percentage
CPD	33	49.9
Malposition/ malpresentation	19	43.3
Deep transverse arrest	7	15.9
Persistent occiput posterior position	5	11.4
Breeh presentation	6	13.7
Face presentation	1	2.3
Foetal congenital abnormality	3	6.8

TABLE IV:
MODE OF DELIVERY IN PATIENTS WITH OBSTRUCTED LABOUR (n=44)

Mode of Delivery	Frequency	Percentage
Caesarean section	36	81.8
Craniotomy	5	11.4
Assisted vaginal delivery	3	6.8

TABLE V:
SEVERITY OF OBSTRUCTION IN MATERNAL MORBIDITIES

Maternal Morbidity	Severity of Obstruction			Total
	Mild	Moderate	Severe	
Pyrexia	4	8	10	22
Peritonitis	0	1	5	6
Extension of tears & haemorrhage	0	1	5	6
Postpartum haemorrhage	1	2	2	5
Ruptured uterus	0	0	3	3
Ruptured bladder	0	0	2	2
Vesicovaginal fistula	0	0	2	2
Wound dehiscence	0	0	1	1

TABLE VI:
FOETAL OUTCOME (n=44)

Outcome	Severity of Obstruction			Total
	Mild	Moderate	Severe	
Stillbirth	1	4	9	14
Apgar score >6	4	7	1	12
Apgar score 4-6	2	10	3	15
Apgar score <4	1	2	0	3
Admission to SCBU	1	7	2	10
Neonatal death	1	3	0	4

DISCUSSION

Obstructed labour is a dangerous complication of pregnancy, which has almost disappeared from the western world, but is still one of the leading causes of maternal and foetal morbidity and mortality in developing countries.[1,3,7,11] In this study, OL accounted for 2.1% hospital deliveries, within the range reported for other countries,[16,17] but lower than a recent study in Khyber Teaching Hospital, Peshawar-Pakistan, which was 4.52%[5] and Dow Medical College, Karachi-Pakistan, where it was 4.42%.[3] The hospital-based data in our study may underestimate the actual incidence because it was a newly established unit and received a limited number of patients from the surrounding areas, and many rural communities have limited access to care. The risk factors of OL in all patients taken together in this study are consistent with earlier reports, which found cephalo-pelvic disproportion to be the commonest cause followed by malposition and malpresentation.[1,5] CPD in multigravidae is not always easy to recognize since both the patient and the birth attendant tend to relax due to previous uncomplicated deliveries. However, malposition and malpresentation is also very common cause of OL in grandmultiparous women because of the lax abdomen following repeated pregnancies. Various authors have reported that OL is one of the major causes of perinatal and maternal mortality.[1-3,5] This study similarly shows high perinatal mortality rates (40.9%), however, there was no maternal death in the our study. In addition to death, injury to the mother and foetus has been reported by different authers,[1-3,5,11] and the findings of this analysis are consistent with these studies. Major complications of OL in this study are ruptured uterus, puerperal pyrexia, ruptured bladder, peritonitis, postpartum haemorrhage, vesicovaginal fistula, birth as-

phyxia and neonatal complications like jaundice, convulsions and septicaemia. Earlier reports show the incidence of this problem to be high in developing countries, where mother had low antenatal coverage, came from remote areas, and had a prolonged history of labour. Most of our patients (72.7%) came from rural areas, had very low antenatal coverage and spent much time in labour (15.9 hours). Antenatal care in our country is far from satisfactory. The reason being that majority of the population lives in rural areas, with a high illiteracy rate, restricted health care facilities with an underlying synergistic background of anaemia, malnutrition, infection and unregulated fertility.[18] Consequently, a large number of patients reach hospital too late with features of OL with grave consequences.[11] An important potential intervention for prevention of OL in our area is antenatal care. In this study, overall antenatal coverage during the three years study was only 29.5%, which is lower than in Tigray region, Ethiopia which is 35%.[19] The number of cases is too low for a sub-group analysis by year, but it is reasonable to assume that early recognition and referral of high risk mothers could lead to fewer complications. Even in a population, where feto-pelvic disproportion is common. OL can be prevented if there is optimal obstetric care.[20,21] Prevention of this catastrophic obstetric health problem is a key factor in the overall effort to reduce maternal and perinatal morbidity and mortality. Good nutrition is essential for the development of normal pelvis (the passage), but it takes long time to attain this goal.[9,12] However at the short term by providing optimal obstetric care to the community, the incidence of OL can be reduced. In addition, its prompt management is also important to minimize the associated maternal and perinatal morbidity.

CONCLUSION

In our study, the frequency of obstructed labour is high. Majority of patients were referred from small clinics or came from home where they were considerably mishandled by Dai or untrained doctors. Finally they ended up in serious maternal and perinatal morbidity and mortality. Most of these cases are preventable by proper antenatal care provided by properly trained persons, together with early referral of high-risk patients.

RECOMMENDATIONS

Health education of the patients and their families should be the first step. Early motherhood should be discouraged, and efforts are needed to improve nutrition during infancy, childhood, early adulthood, and pregnancy.

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