

Obstructed labor in a teaching hospital in Sudan

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ABSTRACT

Objectives: This study was aimed to deal with a serious obstetrical problem in Wad Medani Teaching Hospital, Medani, Sudan. The study reviewed the incidence of obstructed labor, its clinical presentation and methods of diagnosis. The study also includes the methods of treatment and its complications.

Methods: A prospective and descriptive study was carried out in Wad Medani Teaching Hospital, Medani, Sudan. Case notes were studied for all cases with obstructed labor received during the period 1 January 1997 to 31 December 1999. The data was analyzed. The literature was reviewed for similar studies.

Results: During the period 207 cases of obstructed labor

were diagnosed. The total number of deliveries during the same period was 16221, giving an incidence of 1.27%. The most striking symptoms are tachycardia and low blood pressure, while the common sign is the non-engagement of the presenting part. The most common complication is septicemia.

Conclusion: Obstructed labor remains a major obstetrical problem. Adequate antenatal care and proper care at delivery could prevent it. The obstructed labor should always be anticipated and the attendant should not wait for the advanced classical signs to make the diagnosis. Early intervention is associated with an excellent outcome.

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Labor is said to be obstructed when there is no progress despite strong uterine contractions. This may be shown by failure of the cervix to dilate or failure of the presenting part to descend.¹ Neglected obstructed labor is usually associated with high incidence of maternal and fetal mortality and morbidity. It is also associated with high incidence of cesarean section (CS). It is still a major obstetrical problem in our department where a significant number of patients still present with the full blown picture of the disease. Obstructed labor can easily be prevented.

Methods. This prospective, observational, non-experimental study was conducted in Wad Medani Teaching Hospital, Medani, Sudan from the 1st January

1997 to 31 of December 1999. The study was designed to include any patient who presented with obstructed labor. All patients were admitted after full history and examination for urgent treatment. The history includes the name, age, residence, obstetrical history, the first day of the last menstrual cycle. Detailed history on the symptoms of obstructed labor is always included.

The clinical examination includes the height and the weight of patients, the pulse, the blood pressure and the pallor. It also includes examination of the cardiovascular and the respiratory systems. The abdomen is inspected for the size, shape and the presence of Bandl's pathological ring. It is also inspected for scars. The abdomen is palpated for tenderness and rigidity, for organomegaly and proper obstetric examination is

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performed. The external genitalia is inspected for edema of the valva, vaginal bleeding and offensive vaginal discharge. Then digital examination is performed to assess the condition of the vagina, degree of cervical dilatation, the integrity of the membranes and the level and position of the presenting part. Pelvic assessment was carried out for all primiparae.

An indwelling Foley's catheter is then inserted and fixed and a sample of urine is obtained for the presence of glucose, protein and ketones. Blood was taken for hemoglobin estimation, blood grouping and cross matching. Then all patients were treated according to their situations. All patients were followed meticulously until they were discharged. All babies received the maximum neonatal care.

Results. The study shows that out of 207 cases studied 93/207 (44.9%) were living in urban areas, while 114/207 (55.1%) were rural residents. The distribution is not greatly different. The study shows that 75/207 (36.2%) of patients had antenatal care while 132/207 (63.8%) did not attend any. The study shows that 74/207 (84.1%) had no past history of CS or forcep delivery. Thirty-two hundred and seven (14.5%) had a past history of CS and 3/207 (1.4%) had past history of forcep delivery. The perinatal death is 56/207 (27.1%) and it is clear from the analysis that the perinatal deaths increase as the duration of labor before admission is prolonged. **Table 1** shows that almost 2 thirds 132/207 (63.8%) of patients studied were between 20-29 years of age, and approximately one quarter 48/207 (23.2%) were between 30-39 years age; 24/207 (11.6%) were <20 years; while 3/207 (1.4%) were ≥40 years. **Table 1** also shows that 52.2% (108/207) of patients were primigravidae, 75/207 (36.2%) were multiparae and only 24/207 (11.6%) were grand multiparae. **Table 2** summarizes the clinical features. Clinical features one-5 are found in all patient thus constituting significant features of obstructed labor. Those from 6-10 were approximately found in 2-thirds of patients. Fetal distress was discovered in 54/207 (26.1%) of cases. Bandl's ring and hypotension are equally found in 48/207 (23.2%) of patients. Vulval edema is found in 36/207 (17.4%) of cases. **Table 3** shows that the main cause of obstructed labor in the study is cephalopelvic disproportion (C.P.D) (diagnosed clinically) is found in 118/207 (57%) of cases. This is followed by cephalopelvic disproportion + a previous CS 21/207 (10.2%). Occipitoposterior has the same percentage. Breech presentation is found in 13/207 (4.8%) of patients. Shoulder presentation, face presentation together accounted for 20/207 (9.6%). Big babies (weighing 4 kg or more) are found in 4/207 (2%) of babies. **Table 4** shows that 42/207 (20.3%) of patients developed septicemia before delivery and one patient died undelivered. Septicemia followed CS in (18) cases (42.8%), but none after destructive operations. Out of 207 patients 27 (13.2%) had uterine tears, of whom 18/207 (8.69%) developed hemorrhage. Ruptured of the uterus was found in 6/207 (2.89%) of cases.

Discussion. The incidence of obstructed labor in this study was 207/16221 (1.27%). Khan and Roohi² found an incidence of 4.0%. This could be explained by the fact that in our study 132/207 (63.8%) of patients attended antenatal care, while in the study of Khan and Roohi² 83.5% did not attend any antenatal care. Most of the cases of obstructed labor can be prevented by intelligent anticipation.³ Those at risk can be referred to the hospital early for delivery.

In the study 108/207 (52.2%) of patients were primigravidae, this is comparable to the study of Ozumba and Uchengbu.⁴ Khan and Roohi² demonstrated that 58.1% of patients were para IV or more.¹ Obstructed labor though known to be a feature of multiparity due to fetal causes (Cunningham et al⁵), in our study the high incidence in primigravidae could be attributed to high prevalence of contracted pelvis in our country. The fetuses presented by the vertex in the study were 173/207 (84%), this comparable to the study of Ozumba and Uchengbu⁴ where similar results 79.7% were found. Bandl's ring was found in 36/207 (17.4%). This is a late feature of obstructed labor, this happens when the upper segment becomes thicker and shorter while the lower segment gets thinner and longer and eventually, ruptured of the uterus superinvolve.⁶ In 174/207 (84.1%) of patients studied, the presenting part is not engaged. Lister⁷ showed that most of his patients had the presenting part still above the pelvic brim at the time of delivery.⁸ Traditionally the most common cause of obstructed labor is cephalo-pelvic disproportion.⁶ In our study 118/207 (57%) of cases suffered from cephalo-pelvic disproportion. This is comparable to 67% in the study of Ozumba and Uchengbu.⁴ In the study, 21/207 (10.15%) of patients had cephalo-pelvic disproportion + previous CS and this is comparable with the results of Ozumba and Uchengbu⁴ which gave 6.1%. Cesarean hysterectomy was performed in 6/207 of patients, this is comparable with what Khan and Roohi found⁴ In 4.8% of their cases. Septicemia was the leading complication in the study affecting 39/207 (18.8%) of cases. This far less than 57% reported by Ozumba and Uchengbu⁴ and also far less than the 67% found in the study of Khan and Roohi.² In the study 24/207 (11.8%) of patients developed hemorrhage. This is comparable with a result of 9.6% reported by Khan and Roohi.² Rupture of the uterus occurred in 6/207 (2.9%) of our patients. This figure is small compared with 8.1% of Khan and Roohi² and 14% reported by Ozumba and Uchengbu.⁴ The perinatal death in our study is 56/207 (27.1%). This comparable with 29.4% reported by Ozumba and Uchengbu.⁴ In Royal Women's Hospital Melbourne, Australia, Ran⁸ reported an incidence of 12.2%. Obstructed labor remains a nightmare to obstetricians. It is attributed to the fact that the antenatal facilities and care at delivery do not cover all pregnant women and even the available facilities are not properly utilized by the population. Delayed referral system adds more to the problem.

Table 1 - Distribution of patients according to the age and parity.

Age in year	Parity	Cases n (%)
<20		24 (11.6)
20-29		132 (63.8)
30-39		48 (23.2)
≥40		3 (1.5)
Total		207 (100)
	Primigravida	108 (52.2)
	1-4	75 (36.2)
	≥5	24 (11.6)
Total		207 (100)

Table 3 - Distribution of patients by the causes of obstructed.

Causes	Cases n (%)
Cephalopelvic disproportion	118 (57)
Previous cesarean section + cephalopelvic disproportion	21 (10.2)
Occipitoposterior	21 (10.2)
Breech presentation	13 (6.4)
Hydrocephalus	10 (4.8)
Shoulder presentation	9 (4.3)
Face presentation	8 (3.9)
Big baby	4 (2)
Brow presentation	3 (1.4)
Total	207 (100)

Table 2 - Distribution of patients according to the clinical features.

Clinical features	Cases n (%)
Dry tongue	207 (100)
Sweating	207 (100)
Severe continuous pain	207 (100)
Irregularly shaped abdomen	207 (100)
Full bladder	207 (100)
Rapid pulse	186 (8.9)
Pyrexia	180 (87)
Non-engagement of the presenting part	174 (84.1)
Caput	128 (62.3)
Molding	128 (62.3)
Offensive vaginal discharge	102 (49.3)
Fetal distress	54 (26.1)
Bandl's ring	48 (23.2)
Hypotension	48 (23.2)
Vulval edema	36 (17.4)

Table 4 - Distribution of patients according to the maternal complications.

Maternal complication	Cases n (%)
Septicemia	42 (20.3)
Uterine tear	27 (13.2)
Hemorrhage	18 (8.7)
Rupture of uterus	6 (2.9)
Pulmonary embolism	3 (1.5)
Vesico-vaginal fistula	3 (1.5)

The incidence of obstructed labor together with its complications could be reduced to the minimum by improving the antenatal care and care at delivery. We have to build up a proper referral system. It is a national issue since the improvement of transportation availability of blood, well-equipped theatres and enough personals and advanced midwifery services can help very much.

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