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Management of Deliveries at the University Gynecology-Obstetrics Department of the institute of social hygiene hospital of Dakar

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Abstract
Objectives: Describe the epidemiological profile of patients, specify the characteristics of the delivery and evaluate the maternal and perinatal prognosis at the Maternity Hospital Institute of Social Hygiene in Dakar.
Materials and Methods: This was a retrospective and descriptive study conducted over a period of six months from January 1 to June 30, 2019, involving all women who gave birth in the Gynecology-Obstetrics Department of the Institut d'Hygiène Sociale Hospital in Dakar.
Results: During the study period, we collected 689 delivery records, i.e., 8.2% of the department's overall activities and 69% of emergency activities. The epidemiological profile of the patients was that of a woman with an average age of 27 years, married (96%), with an average parity of 2, and residing outside the Southern Health District of Dakar (58%). More than half of the patients (58.1%) had received at least 4 prenatal consultations. The majority of parturients had a single pregnancy (97%) at term (72%). Uterine height measurement and fetal heart rate assessment were normal in 59% and 95.5% of the sample respectively. The vaginal touch revealed ruptured membranes in 34.5% of the patients with amniotic fluid that was mostly clear (68.1%) and a vertex presentation (96%). Clinical pelvimetry allowed the diagnosis of 19% of moderately narrowed pelvises and 2% of surgical pelvises. Slightly more than half of the parturients (56.6%) were in the latent phase of labor. We recorded 130 labor events (18.9%), 67 uterine events (9.7%), 76 directions of labor (11%), and 45 labor inductions (6.5%). In our series, 55.4% of the patients had benefited from labor monitoring by cardiotocograph and complications were found in 25.5% of the patients. These were mainly cases of non-reassuring fetal status (71.8%). More than half of the parturients (55.3%) had given birth by vaginal delivery. Caesarean sections and instrumental extractions represented 44.6% and 0.1% of deliveries respectively. Complications recorded (6.8%) were dominated by retroplacental hematoma (4%) and eclampsia (1.1%). We recorded 98% live births. Most newborns (87.4%) had an Apgar score of 7 or more at the first minute. We recorded 82% eutrophic, 13.3% hypotrophic, and 4.7% macrosomic newborns. Among the newborns transferred to neonatology (9.8%), 17.4% died during hospitalization. Stillbirth was estimated at 20‰ live births.
Conclusion: Childbirth constitutes the main emergency activity at the Maternity Hospital of the Institute of Social Hygiene of Dakar with low maternal and perinatal morbidity and mortality.

Keywords: Delivery, caesarean section, institute of social hygiene, maternal prognosis, perinatal prognosis

Introduction

Maternal mortality is a real public health problem in the world, particularly in developing countries, which pay the highest price. Indeed, according to World Health Organization (WHO) estimates, 529,000 women die each year worldwide from complications of pregnancy and childbirth, nearly half of which occur in sub-Saharan Africa [1]. Other United Nations sources estimate that more than half a million women die every year in the world as a result of difficult pregnancies or deliveries [2, 3, 4]. In Senegal, despite the efforts made, the maternal mortality rate remains high at 236 per 100,000 live births [5]. Current strategies to combat these deaths, which are most often related to hemorrhage and dystocia, are based on family planning, assisted delivery by qualified personnel (midwife, nurse, doctor) and emergency obstetric and neonatal care (EmONC). At the Maternity Hospital of the Institute of Social Hygiene, which is a national reference, EmONC is available 24 hours a day, and

we wanted to evaluate the care of the parturients we received during the first half of 2019 through this study.

Materials and Methods

Type of study

This was a retrospective and descriptive study conducted over a period of six months from January 1 to June 30, 2019 on the management of deliveries in the Gynecology-Obstetrics Department of the Hospital Institute of Social Hygiene in Dakar.

Patient selection criteria

All patients admitted for delivery management were included in our study, regardless of the mode of admission (evacuated or from home) and regardless of the mode of delivery (vaginal delivery or cesarean section).

Data collection and analysis

The data were collected from the delivery records. The data were entered using the Sphinx version 5 software and the data were analyzed using the Epi info version 3.5 software.

Results

Frequency

During the study period, we collected 689 delivery records, i.e. 8.2% of the department's overall activities and 69% of emergency activities.

Socio-demographic characteristics

The epidemiological profile of the patients was that of a woman with an average age of 27 years, married (96%), with an average parity of 2, and residing outside the Southern Health District of Dakar (58%). The socio-demographic characteristics of the patients are summarized in Table 1.

Table 1: Socio-demographic characteristics of patients who delivered at the IHS hospital in Dakar between January 1 and June 30, 2019 (N=689)

Patient characteristics	Number (n)	Frequency (%)
Age (years)		
Less than 20	83	12
20 à 29	351	50,9
30 à 39	228	33,1
40 and older	27	3,9
Marital status		
Married	661	96
Single	21	3
Divorced	7	1
Parity		
Primipare	282	41
Paucipare	276	40
Multiparous	131	19
Residence		
Outside the South District	407	59
South District	282	41

Antenatal follow-up data

More than half of the parturients (58.1%) had received at least 4 prenatal consultations. A pathological pregnancy was found in 89 patients (12.9%). The most frequent pathologies were diabetes (3.4%), arterial hypertension (2.6%), and hepatitis B virus infection (2.5%). The data from the prenatal follow-up of the patients are summarized in Table 2.

Table 2: Antenatal follow-up data for patients Who Delivered at the IHS hospital in Dakar between January 1 and June 30, 2019 (N=689).

Prenatal follow-up data	Number (n)	Frequency (%)
Number of prenatal visits		
None	30	4,4
1	32	4,6
2	67	9,7
3	160	23,2
4 and more	400	58,1
Pathologies encountered		
None	600	87,1
Pregnant hypertension / Preeclampsia	18	2,6
Diabetes	24	3,4
Hepatitis B virus infection	17	2,5

Data at admission

Time and mode of admission

The majority of parturients had full-term pregnancies (72%). Prematurity and late term were found in (11%) and (18%) respectively.

Clinical data

The majority of parturients had a full-term pregnancy (72%). Prematurity and late term were found respectively in (11%) and (18%). Almost all patients had a single pregnancy (97%). We recorded (3%) twin pregnancies. Uterine height measurements were normal in slightly more than half of the parturients (59%). Excessive uterine height was found in 17% of them. On admission, the fetal heart rate was normal in 95.5% of parturients. The abnormalities found were tachycardia (2.3%), bradycardia (1%) or irregularity of the fetal heart rate (1.2%). The vaginal examination revealed ruptured membranes in 34.5% of the patients with amniotic fluid that was most often clear (68.1%). The apex presentation was the most common (96%), followed by the breech presentation. Clinical pelvimetry allowed the diagnosis of 19% of moderately narrowed pelvises and 2% of surgical pelvises. Slightly more than half of the parturients (56.6%) were in the latency phase of labor.

Labor and delivery data

Particularities of labor

In our series, we noted particularities in the course of labor in 46% of patients. These were 130 labor tests (18.9%), 67 uterine tests (9.7%), 76 labor directions (11%) and 45 labor inductions (6.5%) (Table 3).

Table 3: Particularities of labor in patients who gave birth at the IHS hospital in Dakar between January 1 and June 30, 2019 (N=689).

Particularities of the work	Number (n)	Frequency (%)
No particularities	371	54
Proof of labor	130	18,9
Uterine test	67	9,7
Direction of labor	76	11
Artificial induction of labor	45	6,5

Labor monitoring

In our series, 55.4% of the patients had undergone labor monitoring by cardiotocograph and complications were found in 25.5% of the patients. These were mainly cases of non-reassuring fetal status (71.8%).

Duration of labor
In our series, nearly 2/3 of our parturients (74.3%) had a duration of labor between 1 and 8 hours (Figure 1).

Mode of delivery
During the study period, more than half of the parturients had given birth by vaginal delivery (55.3%). Caesarean section and instrumental extraction represented 44.6% and 0.1% of deliveries respectively (Table 4). Regarding the indications for cesarean section, groups 1 (31.3%) and 5 (21.7%) of the Robson classification were the most represented (Figure 2).

Table 4: Distribution by mode of delivery of parturients who delivered at the IHS hospital between January 1 and June 30, 2019 (N=689).

Mode of delivery	Number (n)	Frequency (%)
Natural vaginal delivery	381	55,3
Subterranean delivery after suction cup application	1	0,1
Scheduled cesarean section	21	3,1
Emergency cesarean section	286	41,5
Total	689	100

Prognosis
Maternal prognosis
During the study period, we recorded 48 complications (6.8%) during delivery. These were cases of retroplacental hematoma (4%), eclampsia (1.1%), pre-rupture syndrome (0.6%), uterine rupture (0.6%) and chorioamniotitis (0.6%) (Table 5). No maternal deaths were noted.

Table 5: Distribution according to labor complications in patients who delivered at the IHS between January 1 and June 30, 2019 (N=689).

Labor complications	Number (n)	Frequency (%)
Aucune	658	93,2
Placenta abruptio	28	4
Eclampsia	8	1,1
Pre-uterine rupture	4	0,6
Uterine rupture	4	0,6
Chorioamnionitis	4	0,6
Total	706	100

Neonatal prognosis
In our series, we recorded 706 births of which 98% were live. Most newborns (87.4%) had an Apgar score greater than or equal to 7 at the first minute. We recorded 82% eutrophic, 13.3% hypotrophic, and 4.7% macrosomic newborns (Table 6). Sixty-nine newborns (9.8%) were admitted to the neonatology unit. The main reason for transfer was non-reassuring fetal status (59.4%), followed by prematurity (18.9%) and low birth weight (11.6%). Of the neonates transferred to the neonatology unit, 17.4% died during hospitalization. Stillbirth was estimated at 20‰ live births.

Table 6: Distribution by birth weight of newborns at the IHS hospital between January 1 and June 30, 2019 (N=706).

Birth weight (grams)	Number (n)	Frequency (%)
Less than 2500	94	13,3
Between 2500 and 3999	579	82
Greater than or equal to 4000	33	4,7
Total	706	100

Discussion
Epidemiology
Deliveries accounted for 8.2% of the department's overall activities and 69% of emergency activities. This high frequency of deliveries in our emergency activities shows that the IHS Maternity Hospital participates significantly in the national effort to increase the proportion of deliveries assisted by qualified personnel, which is estimated at 74% in 2019 in Senegal [5]. This also justifies the need to increase the service's capacity in terms of delivery tables, neonatal resuscitation tables, and hospital beds for postpartum care. It is also necessary to reinforce the number of health care personnel, in particular the midwives who are directly involved in the management of deliveries. The epidemiological profile of our parturients does not differ from those found in the literature [6, 7, 8, 9] and corresponds to that of the maximum fertility period in Senegal, which is between 20 and 29 years of age [10]. During prenatal follow-up, more than half of the parturients (58.1%) had at least 4 prenatal visits, which corresponds to WHO recommendations [11, 12, 13, 14, 15].

Time and mode of admission
During our study period, most parturients were admitted between midnight and 8 am (37.9%). This is consistent with the results of a British study conducted between 2005 and 2014 with a sample size of more than five million births. The author showed that spontaneous deliveries were more likely to occur between 1 a.m. and 6:59 a.m. with a peak at 4 a.m. He evokes an ancestral hypothesis. Indeed, our ancestors lived in active and dispersed groups during the day, and gathered to rest at night. Thus, a nighttime delivery and birth probably provided some protection for the mother and newborn [16]. Our rate of incoming evacuations (43.7%) is much higher than that reported by Mbaye (10.8%) [17]. This proves that the IHS Maternity Hospital, housed in a level I hospital, functions as a level III Maternity Hospital because a significant proportion of our obstetrical admissions come from level II or III Maternity Hospitals with sometimes severe pathologies. The IHS Maternity Hospital is therefore a reference in the Southern Health District but also at the national level. In fact, we received parturients from health facilities in other regions of the country.

Labor and delivery management
Particularities of labor
In particular situations, vaginal delivery required obstetric intervention. Thus, we performed 130 labor tests (18.9%) on moderately narrowed pelvises. In a study conducted in Dakar, Cissé [18] reported that the labor test did not induce a significantly greater risk than that associated with prophylactic cesarean section. According to Cissé [18], despite the constraints of obstetrical practice in Black Africa, proof of labor in moderately narrowed pelvises should be the rule whenever possible, even with exclusively clinical labor monitoring [18].
Artificial induction of labor was performed in 45 patients (6.5%). In our practice, it is almost exclusively done for a medical indication, in particular artificial hypertension, diabetes, intrauterine growth retardation, premature rupture of the membranes or overdue term. This would probably explain the low rate of induction of labor that we recorded compared to developed countries where this intervention

concerns at least one woman out of five, with rates that have stabilized in France since 2010 (22.1% in 2010 and 22% in 2016) [19].

Labor surveillance

In our series, 55.4% of the patients had received labor monitoring by cardiotocograph. In our structure we note an acceptable rate of use of monitoring in the labor room compared to other reference structures in the country, but which still remains low despite its considerable expansion in obstetric practice, on a daily basis. In 2002, in the United States, 85% of fetuses were monitored by electronic monitoring [20, 21]. In France, this rate was 99% [22].

Delivery data

During our study period, more than half of the parturients had a vaginal delivery (55.3%). Caesarean section and instrumental extractions accounted for 44.6% and 0.1% respectively. Our caesarean section rate of 44.6% is very high in relation to the recommendations of the World Health Organization [23] which considers that the ideal caesarean section rate should be between 10 and 15% of deliveries [24]. Other African series such as Cissé [24], Mbaye [25] and Ouédraogo [26] report lower rates than ours with respectively 25.2%, 21% and 21.6%. Concerning the indications for cesarean section, we found that group 1 (nulliparous, single pregnancy, cephalic presentation, term ≥ 37 weeks of amenorrhea, spontaneous labor) and group 5 (previous cesarean section, single pregnancy, cephalic presentation, term ≥ 37 weeks of amenorrhea) were the most represented, with 31.3% and 21.7% respectively. This same observation was made in the series of Robson [27], Mbaye [28] and Delbaere [29].

The reason for the greater frequency of group 1 in the indications for caesarean section is the large proportion of nulliparous women in our study (41%), hence the importance of a good evaluation of the prognosis of the delivery, in particular the performance of pelvimetry.

Maternal-fetal prognosis

During the study period, we did not record any maternal deaths. We obtained 692 live births (98%). Most newborns (87.4%) had an Apgar score ≥ 7 at 5 minutes. Stillbirths were estimated at 20‰ live births. These included 9 fresh stillbirths in the setting of retroplacental hematoma and uterine rupture and 5 macerated stillbirths in maternal diabetic terrain (3.4%). In-utero fetal death is a public health problem with a variable incidence worldwide: 5 ‰ births in developed countries and 10 ‰ to 50 ‰ births in developing countries [30].

The majority of newborns (82%) were of normal weight. Only 13.3% had low birth weight. This rate is comparable to that found by Sarr [31] in Guédiawaye in the suburbs of Dakar, which was about 10.7%.

Sixty-nine newborns (9.8%) were admitted to the neonatal unit. The main reason for transfer was non-reassuring fetal status (59.4%) followed by prematurity (18.9%) and low birth weight (11.6%). In a study conducted in Dakar between 2013 and 2014 the main reasons for transfer were sepsis (35.4%), respiratory distress (33.8%) and low birth weight (LBW) (33.1%) [32]. In Congo, Katamea [33] reported in 2014, a transfer rate to Neonatology was 12.9% slightly higher than ours with prematurity as the main reason for transfer. The transfer rate to Neonatology is a good reflection of the management of pregnancy and delivery.

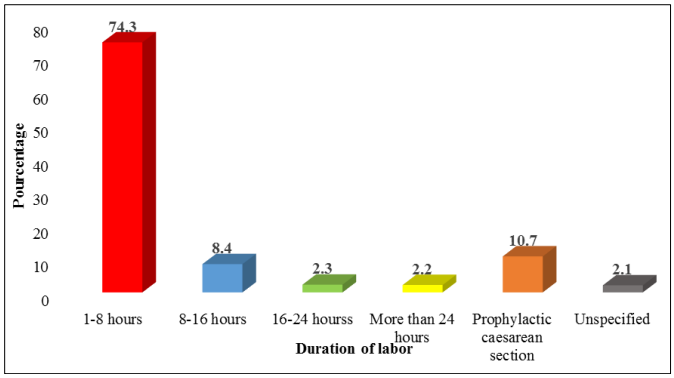

Fig 1: Distribution by duration of labor among patients who delivered at IHS between January 1 and June 30, 2019 (N=689)

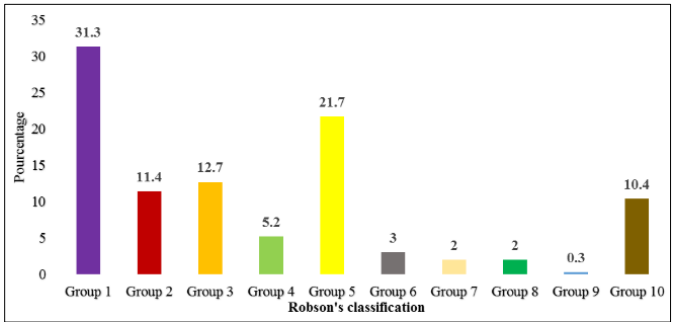

Fig 2: Indications for cesarean section according to Robson's classification in patients who delivered at IHS between January 1 and June 30, 2019 (N=307)

Conclusion

Childbirth is the main emergency activity carried out at the Maternity Hospital of the Institute of Social Hygiene with a high caesarean section rate, zero maternal mortality and a relatively low stillbirth rate. The improvement of these indicators would require an increase in the technical platform of the structure and an increase in qualified human resources.

References

1. World health organization Maternal Mortality in Sub-Saharan Africa American Journal of Obstetrics and Gynecology. 2004;192:342-349.
2. United Nations Population Fund (UNFPA) Launch of the Campaign to Accelerate Reduction of Maternal Mortality in Africa (Niamey). Available at: http://www.niger.unfpa.org/docs/Rapport in December 2011 accessed February 27, 2017.
3. World Health Organization Trends in maternal mortality 1990-2015. Geneva. Available at:www.who.int/reproductivehealth/publications/monitoring/maternalmortality.../fr in December 2015 accessed on November 10, 2016.
4. World Health Organization (WHO) Maternal mortality In 2000 estimates developpes by WHO.1993. Available at:www.who.int/maternal_child_adolescent/documents/ Accessed March 23, 2017.
5. Agence Nationale De La Statistique Et De La Demographie (ANSD) [SENEGAL], AND ICF. 2019. Continuous Demographic and Health Survey (DHS-

Continuous 2019). Rockville, Maryland, USA: ANSD and ICF.
6. Lankoandé N. Analysis of cesarean section indications at the Nabil Choucair Health Center from July 1, 2010 to June 30, 2011. Dissertation, Medicine UCAD Dakar 2011.
7. Andrianmady C, Andrianarivony M, Ranjalhy R. Indications and prognosis of caesarean surgery at the maternity hospital of Befelatanana- CHU Antananarivo: About 529 cases during 1998. Gynecol Obstet Fertil. 2001;29:900-4.
8. Bokossa M, Nguessan K, Doumbia Y, Kakou C, Boni S. Prophylactic and emergency caesarean section: A propos de 394 cas au CHU de Cocody. Med Afr Noire 2008;55(11):594-601.
9. Belinga E, Essiben F, Ndoua CCN, Yaya Fa, Tompeen I, Foumane P Epidemiological, Clinical and Therapeutic Aspects of Labor and Delivery at the Maternity Hospital of Bertoua, Cameroon. Health Sciences And Disease. 2019, 21(1).
10. Agence Nationale De La Statistique Et De La Demographie (SENEGAL). Senegal Multiple Indicator Demographic and Health Survey (EDS-MICS), 2010-2011. Calverton, Maryland, USA: ANDS and ICF International.
11. World Health Organization Trends in maternal mortality: 1990 to 2013. WHO, UNICEF, UNFPA, May 2014:25-28.
12. World Health Organization Preventing abnormalities in labor: a practical guide. The partogram. Part 2: User's manual, Geneva. 1994;35:25-27.
13. Floris L, Mermillod B, Chastonay P. Translation and validation in French of a multidimensional scale evaluating the degree of satisfaction during childbirth. Revue d'épidémiologie et de Santé Publique. 2010;58:13-22.
14. World Health Organization Management of complications of pregnancy and childbirth: a practical guide. The partogram. Part IV: Principles of operations research. Geneva. 1994;32:27-31.
15. World Health Organization Care in normal childbirth: A practical guide WHO/FRH/MSM/96.24: 61.
16. Peter M, Mario Cb, Mary N, Gill H, Rod G, Miranda D, *et al*. Timing of singleton births by onset of labour and mode of birth in NHS maternity units in England, 2005-2014: A study of linked birth registration, birth notification and hospital episode data.
17. Mbaye M, Sene N, Moreau JC. Audit of cesarean section indications at the Centre de Santé Philippe Maguilen Senghor. Mémoire Médecine, Dakar, Université Cheich Anta Diop. 2014, 947.
18. Cisse CT, Kokaina C, Ndiaye O, Moreau JC. Proof of labor in moderate osseous dystocia at the University Hospital of Dakar. Journal of obstetrics gynecology and reproductive biology. 2004;33(4):312-318.
19. Blondel B, Kermarrec M. Enquête Nationale Périnatale 2010. Les naissances en 2010 et leur évolution depuis 2003. Unité de Recherche Epidémiologique en Santé Périnatale et Santé des Femmes et des Enfants, INSERM - U. 953 [online]. May 2011. Available at: sante.gouv.fr (pages 19-30).
20. American College Of Obstetricians And Gynecologists (ACOG). Intrapartum fetal heart rate monitoring: nomenclature interpretation and general management principles. Obstet Gynecol. 2009;114:192-02.
21. Martin A. Fetal heart rate during labor: definitions and interpretation. J Gynecol Obstet Biol Reprod. 2008;37:S34-S45.
22. Anaes. Interest and indications of fetal heart rate monitoring modes during normal labor. J Gynecol Obstet Biol Reprod. 2002;32:183-86.
23. World Health Organization. Statement on cesarean section rates 2014. Available at www.whoint/reproductivehealth Page accessed 12/11/2016.
24. Dessole L, Darai E. Technical developments in cesarean section. Encyclopédie Médico-chirurgicale Gynécologie-Obstétrique; c2005. p. 110-24.
25. Mbaye M, Gueye Smk, Gueye M, Cissé M, Diadhiou M, Faye Diémé M. Emergency obstetrical and neonatal care at the Rufisque Level II Health Center: Impact of redeployment of personnel from the Maternity Ward of CHU Le Dantec. Journal de la SAGO. 2006;7(1):5-10.
26. Ouédrago C, Zoungrana T, Dao B, Dujardin B, Ouédrago A, Thiéba B. Quality Caesarean section at the Yalgado Ouédrago Hospital Center in Ouagadougou. Analysis of the determinants in 478 cases collected in the gynecology-obstetrics department. Med Afr Noire. 2001;48:443-45.
27. Robson M, Murphy M, Byrne F. Quality assurance: the 10 group classification system (Robson classification). Induction of labor and caesarean delivery. In Journal Gynecol and Obstet. 2015;131:S23-S27.
28. Mbaye M, Gueye M, Ndiaye Gueye M, Sene Niang N, Moreau J. Analysis of caesarean section rate according to Robson's classification in an urban health center in Senegal. Int J Reprod Contracept Obstet Gynecol. 2015;4(4):1100-1102.
29. Delbaere I, Cammu H, Martins E, Tency I, Martens G, Temmerman M. Limiting the cesarean section rate (in low risk pregnancies is key to lowing the trend of increased abdominal delivery. An observational Study BMC pregnancy Childbirth. 2012;12:3.
30. Gerardin P, Heisert M. Incidence, causes, and risk factors of fetal death in utero in southern Reunion. Encycl Med Chir; c2004.
31. Sarr M, Hanne K, Thiam C, Diouf L, Sow D, Fall M. Low birth weight: frequency and risk factors in the district of Guédiawaye (Suburb of Dakar-Senegal). Médecine d'Afrique Noire. 1996, 43(5).
32. Faye Pm, Dieng YJ, Diagne-Guey Nr, Gueye M, Ba A, Seck Ma, *et al*. The problem of neonatal transfers in the Dakar region (Senegal). Journal of perinatal medicine. 2016;8(2):94-102.
33. Katamea T, Mukuku O, Kamona L, Mukelenge K, Mbula O, Baledi L, *et al*. Risk factors for mortality in neonates transferred to the neonatology ward of Jason Sendwe Hospital in Lubumbashi, Democratic Republic of Congo. The Pan African Medical Journal. 2014, 19.