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Original Research Article

Study of Macrosomic Deliveries in the Gynaecology and Obstetrics Department of the "Major Moussa Diakite" Reference Health Center in Kati, Koulikoro, Republic of Mali

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Abstract: The delivery of a macrosomic baby remains a concern for obstetricians and neonatologists, especially when the delivery is vaginal, because of the risk of maternal and perinatal complications. The aim of this article is to study macrosomic deliveries in the gynaecology and obstetrics department of the Kati reference health center. ***Method:*** This was a prospective, cross-sectional study which ran from 1 November 2020 to 31 October 2022, a period of 24 months. It concerned all deliveries in which the birth weight of the newborn was greater than or equal to 4000 grams, excluding cases of foetal malformations. ***Results***: Out of a total of 4676 deliveries, we recorded 127 cases of macrosomia, a frequency of 2.7%. The average age of the women was 28.5 years, ranging from 16 to 47 years. The main risk factors identified were high multiparity (29.1%), maternal obesity (28.4%), overdue delivery (19.7%), previous delivery with the presentation was cephalic in 93.7% of cases, and delivery was by vaginal route in 63.8% of cases, compared with caesarean section in 36.2%. Maternal complications were dominated by perineal tears in thirteen cases (10.2%), cervical tears in two cases (1.6%), endometritis in two cases (1.6%), vaginal tears in one case (0.8) and haemorrhage during delivery in one case (0.8%). However, no complications were found in 108 out of 127 deliveries (85%). The Apgar score was less than eight at 1 minute in 12.6% of newborns. We observed serosanguineous hump (8.7%), brachial plexus paralysis (4.7%), clavicle fracture (1.6%) and early neonatal death (2.4%) due to neonatal distress. ***Conclusion***: Macrosomic delivery carries very real risks, and the indications for vaginal delivery must be restricted in order to improve maternal and foetal prognosis.

Keywords: Macrosomic delivery, risk factor, maternal and foetal prognosis, Kati referral health centre.

INTRODUCTION

Macrosomia is defined as a birth weight at term greater than or equal to 4,000 grams, where the birth weight covers the whole body and not an isolated part [1]. A newborn is macrosomic when its birth weight is greater than the 90th percentile according to the reference curves [2]. This presents the gynaecologist-obstetrician with two difficulties: finding the cause and what to do during delivery, because of the possible risk of dystocia due to excess foetal volume [1]. The delivery of a macrosomic baby has always preoccupied obstetricians, neonatologists, diabetologists and other specialists, because of the aetiological problems and the risks of obstetric and perinatal complications posed by macrosomia. It is in fact a heterogeneous condition, with macrosomic newborns showing anthropometric and body composition differences. In addition, the factors that may be involved in the onset of macrosomia are

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numerous and often interrelated, and their relative influence is poorly understood. Compared with the delivery of a normal-weight newborn, maternal and foetal morbidity and mortality in macrosomia are increased [3]. The frequency of macrosomia varies throughout the world. In France, Touzet S [4] reported a frequency of 7.80% in 2002, whereas it was 9.20% in the USA according to Sunneet P [5] in the same year. In Morocco, its frequency was 5.60% and 6.87% in 2014 according to Meryem F and Hanan AA [6;7]. The frequency of macrosomia in Mali was 5.02% at the commune II reference health centre in 2009 according to Cissé AS[8] and 1.58% at the commune IV reference health centre in 2014 according to Keïta M [9]. The predisposing factors may be constitutional or acquired. Screening for fetal macrosomia should be considered for any risk factor in order to prevent complications in childbirth.

In Mali, a number of studies [8, 9] have been carried out on the delivery of babies with macrosomia, but the extent of the phenomenon was still unknown at the maternity unit of the Kati referral health centre, hence this study, the objectives of which were as follows: to determine the frequency of macrosomia, the sociodemographic characteristics of babies with macrosomia, to determine the risk factors associated with macrosomia and to establish the maternal and neonatal prognosis.

MATERIALS AND METHODS

Our study took place in the maternity ward of the "Major Moussa Diakité" referral health centre in Kati. This is a second-level referral facility in Mali's health pyramid. It is one of the largest health districts in Mali's 2nd administrative region (Koulikoro).

This was a prospective descriptive cross-sectional study, conducted from 1 November 2020 to 31 October 2022, a period of 24 months. It covered all cases of childbirth in the maternity ward of the Kati Reference Health Centre during the study period. We proceeded with an exhaustive recruitment of all cases of delivery in which the birth weight of the newborn was greater than or equal to 4000 grams without any malformation. Data were collected from the following sources: antenatal consultation booklet, delivery register, operative report register and obstetric records, which were used to fill in our pre-established survey forms. The data were entered using Microsoft Word 2010 and analysed using SPSS 20. The statistical test used was Fisher's exact probability, with a significant threshold if $P \leq 0.05$.

RESULTS

Frequency

We recorded 127 cases of macrosomia out of a total of 4676 deliveries, representing a frequency of 2.7%.

Socio-demographic aspects:

Table I: Socio-demographic characteristics of women giving birth

Socio-demographic characteristics	Numbers (N=127)	Percentage (%)
Age		
≤19 years	11	08,7
[20-34]	86	67,7
≥35 years	30	23,6
Level of education		
Out of school	87	68,5
Primary	22	17,3
Secondary	9	7,1
Higher education	6	4,7
Koranic school	3	2,4
Profession		
housewife	109	85,9
Civil servant	6	4,7
Pupils and students	6	4,7
Merchants / Saleswomen	4	3,1
Hairdresser	2	1,6
Parity		
Primipare	17	13,4
Paucipare	45	35,4
Multiparous	28	22,1
Large multiparous	37	29,1

The mean age was 28.5 years, with extremes ranging from 16 to 47 years

In our study, the risk factors for macrosomia were high multiparity (29.1%), maternal obesity (28.4%), late term (19.7%), previous delivery with macrosomia (16.6%), maternal diabetes (3.1%) and advanced maternal age (3.1%).

Table II: Relationship between foetal weight and body mass index

Weight	body mass index (BMI)									
	Normal		overweight		moderate obesity		severe obesity		morbid obesity	
	N	%	N	%	N	%	N	%	N	%
4000-4499g	39	(33,33)	46	(39,31)	24	(20,51)	7	(05,98)	1	(0,85)
4500-4999g	0	(00)	6	(66,66)	2	(22,22)	1	(11,11)	0	(0,00)
≥5000g	0	(00)	0	(00)	0	(00)	0	(00)	1	(100)
Total	39		52		26		8		2	

Fisher's exact probability P= 0.030

Table III: Relationship between foetal weight and sex

weight	Sex			
	Male		Female	
	N	%	N	%
4000-4499g	71	(60,7)	46	(39,3)
4500-4999g	8	(88,9)	1	(11,1)
≥ 5000g	1	(100)	0	(00)
Total	80		47	

Fisher's exact probability P= 0.086

Average weight = 4557.5 grams [4000 and 5800] grams

Maternal and foetal prognosis

- The presentations were: cephalic (93.7%), breech (4.7%) and transverse (1.6%).
- Delivery was by vaginal route in 63.8% of cases and by caesarean section in 36.2%.
- Emergency caesarean section was performed in 29.9% of deliveries, compared with 6.3% for prophylactic caesarean section

Table IV: Distribution of parturients according to indication for caesarean section

indication for caesarean section	Number (N=46)	Percentage %
Acute fœtal distress	6	13,1
breech presentation of the foetus	6	13,1
scarred uterus	11	24,0
Fetal weight > 4500g	1	2,2
Presentation of the shoulder	2	1,6
stationary labour dilation	3	4,4
Fetal-pelvic disproportion	13	28,3
Asymmetrical pelvis	2	1,6
Immature basin	1	2,2
Pre-rupture syndrome	1	2,2

Maternal complications were dominated by perineal tears in thirteen cases (10.2%), cervical tears in two cases (1.6%), endometritis in two cases (1.6%), vaginal tears (0.8), delivery haemorrhage in one case (0.8%), but no complications were found in 108 out of 127 cases (85%).

The Apgar score at the 1st minute was normal (greater than or equal to eight) in 85% of cases, however 12.6% of newborns had an Apgar score at the 1st minute less than or equal to eight. Among newborns, we observed serosanguineous hump (8.7%), brachial plexus paralysis (4.7%), clavicle fracture (1.6%) and early neonatal death.

Table VI: Relationship between mode of delivery and pelvis type

Childbirth mode	type of basin							
	Normal Pelvis		Basin limit		Asymmetrical pelvis		Immature basin	
	N	%	N	%	N	%	N	%
Low track	80	(100)	0	(00)	0	(00)	1	(1,23)
Caesarean	31	(67,39)	13	(28,26)	2	(4,35)	0	(00)
Total	111		13		2		1	

Fisher exact probability P=0.000000339

Table VII: The relationship between mode of delivery and perinatal complications

Childbirth mode	Perinatal complications											
	serosanguineous hump		Fracture of the clavicle		Brachial plexus paralysis		Hypoglycaemia		Deaths		None	
	N	%	N	%	N	%	N	%	N	%	N	%
Low track	11	(13,6)	2	(2,47)	6	(7,41)	0	(00)	1	(1,23)	61	(75,3)
Caesarean	0	(00)	0	(00)	0	(00)	2	(4,35)	2	(4,35)	42	(91,30)
Total	11		2		6		2		3		103	

Fisher's exact probability P: 0.00086

DISCUSSION

From 1 November 2020 to 31 October 2022, we recorded 127 cases of macrosomia out of 4676 deliveries at the maternity unit of the Kati referral health centre, a frequency of 2.7%. This result is much lower than those reported by Saleh [10]: 5.6% in 2008 in Saudi Arabia, by Valmori J [11]: 6.6% in 2017 in France and by Prosper K. L [12]: 5.7% in 2016 in Lubumbashi. These differences between the series could be explained by the recruitment method, the setting and type of studies and above all the size of the sample. Most of these studies involved several maternity units, whereas ours took place only in the maternity unit of the Kati referral health center.

Our frequency is similar to certain Malian and African series, Kamaté M.N [13]: 1.92% in commune V in Bamako in 2018; Dolo O [14]: 2.72% at the CHU point G in Bamako in 2001; and that of Thieba B [15]: 2.4% in Burkina Faso in 2004. This similarity is due to the conditions and types of study and the study populations.

In our study, the average age of women giving birth was 28.5 years, with extremes ranging from 16 to 47 years. Keita M [9] and Meryem F [6] reported an average age of 28 and 29 respectively. The 20-34 age group was the most represented with 67.7%, which could be explained by the fact that this group includes women of childbearing age.

Nearly seven out of ten of our deliveries (68.5%) had no schooling and only 4.7% had a higher level of education. Keita M [9] reported that 25.69% of her parturients had no more than primary education and 53.32% had no schooling. These figures attest to the low school enrolment rate for girls in our country.

This predominance of non-enrolment in our countries can be explained by the low level of literacy among girls in general.

Housewives were the most represented in our study with 85.8%, Cissé AS [8] found a frequency of 71.90% and Keita M [9] with 67.68%. These figures can be explained by the low level of literacy among girls in our countries.

Multiparous women accounted for 22% and very multiparous women for 29.1%, while Keita M [9] found 12.71% for multiparous women and 14.09% for very multiparous women. Most studies (Meryem F [6], Touzet S [4], Sunnet P [5]) agree with the predominance of multiparous women as a risk factor for macrosomia.

A history of macrosomic delivery was found in 16.5% of our women. This rate is higher than that found by Meryem F [6] (3%) and lower than those reported by Keita M [9] and Keita A [16] (31.49% and 30.00% respectively). Gestational diabetes was found in 3.1% of our deliveries, a rate comparable to those found by Keita M [9]; Meryem F [6]; and Traoré AKZ [17] who reported respectively 2.49%, 5.87% and 31.60% of cases of gestational diabetes. Diabetes can affect pregnancy by causing several complications, including foetal macrosomia. Macrosomia is classically attributed to foetal hyperinsulinism in response to maternal hyperglycaemia, due to the anabolic effect of insulin [18]. Generally speaking, foetal macrosomia is very often linked to diabetes regulation disorders. Obesity measured by body mass index is found in 28.4% of our babies. Keita M [9] and Keita A [16] reported respectively 44.75% and 25% maternal obesity. In our study, there was a statistically significant association between obesity and the occurrence of macrosomia P= : 0.030. The risk of macrosomia is multiplied by four in obese subjects [19]. Maternal obesity is considered to be an important and determining aetiological factor in the genesis of macrosomia [20-22]. For Ducarme [23], the frequency of macrosomia in a population of obese women was 14.60% compared with 6.60% in a control population of normal weight patients. We found that 19.7% of deliveries were overdue, a higher rate than Keita M [9], Badji CA [24] and Hanan AA [7], who found 9.70%, 9.50% and 12.20% overdue respectively. This difference between the authors could be explained by the lack of precise dating of the pregnancy by an early ultrasound scan, or a precise date of the last menstrual period on the one hand, and by the number and quality of antenatal follow-ups on the other.

The choice of delivery route is a major concern for the obstetrician. In our study, vaginal delivery was obtained in 63.8% of cases, compared with 36.2% by caesarean section. There was a significant relationship between route of delivery and maternal pelvis (P=0.000000339) and between route of delivery and perinatal complications (P=0.00086). This

predominance of vaginal delivery in our series was found by most authors: Bish A [25], Gbaguidi A [26], Modanlou H [27] who reported 60.30%, 59.67% and 65.20% respectively. The caesarean section rate, which was 36.2% in our study, varies according to the study: Gbaguidi A [16] in Dakar; Panel P [28]; Turner M J [29]; Spellacy WN [30] and Badji CA [24] in Dakar who reported respectively 7%; 9.09%; 10%; 34% and 41.90% of the caesarean section rate.

In our study 92.1% of newborns weighed between 4000 and 4499 grams and the average weight of newborns was 4557.5 grams with extremes between 4000 and 5800 grams. Traoré AKZ [17] found 83.20% of newborns weighing between 4000 and 4500 grams and an average weight of 4500 grams. Meryem F [6] and Badji CA [24] found 75.96% and 91.5% respectively of newborns weighing between 4000 and 4500g. The historical record is reported by Bish A [25] in Lyon, France in 1955 with 11500 grams; Keita A. [16] in 2006 reported that 2% of newborns reached 7000 grams. In our study, 85% of newborns had an APGAR score at the first minute greater than seven, for Coulibaly E. Y [31], the APGAR score at the first minute was greater than seven in 81.10%, Keita M [9] found an APGAR score at the first minute greater than seven in 90.30% of cases. Our rate is comparable to that of Coulibaly E.Y [31] and lower than that of Keita A [16] most authors agreed that the Apgar score was greater than seven in the majority of cases, but this does not prevent this score from being further improved. Newborn mortality in our study was 2.4%, and these perinatal deaths were related to neonatal distress. This rate is comparable to that of Meryem F [6] who found 11 cases of perinatal death, i.e. 3.10%, distributed as follows: 6 macerated stillbirths in the context of maternal diabetes, one case related to uterine rupture and five cases of stillbirth following acute foetal distress. This neonatal mortality seems to be linked either to poor monitoring of high-risk pregnancies, such as those with diabetes, or to delays in evacuation from peripheral health facilities. The rate of perinatal complications was 19% and concerned 24 newborns, including eleven cases of serosanguineous hump, six cases of brachial plexus paralysis following shoulder dystocia, two cases of neonatal hypoglycaemia and two cases of clavicle fractures. This rate is comparable to that of Coulibaly EY [31] (12.30%) and lower than that of Meryem F [6] (31.17%). 13.4% of maternal complications were observed. They were dominated by one case of vaginal tear (0.8%), one case of delivery haemorrhage (0.8%), thirteen cases of perineal tear (10.2%), two cases of cervical tear (1.6%), and two cases of post caesarean endometritis (1.6%). There was a significant relationship between the route of delivery and perinatal complications with P=0.00086. Contrary to Keita M [9] who reported one case of delivery haemorrhage (0.28%), one case of uterine rupture (0.28%) and one case of postoperative endometritis (0.28%). In his study, Keita A [16] showed that the failure to correctly assess the parturient carrying a large foetus and the delay in correctly managing the parturient were the cause of four cases of uterine rupture, including three cases in evacuations from peripheral centres and three cases of haemorrhage of the delivery. These two complications threatening the maternal prognosis have already been reported by other authors such as Treisser A [32] who noted a higher rate of delivery haemorrhage. We did not record any maternal deaths, which is in line with the results found in the literature [6, 20]. Keita M [9] reported a case of maternal death due to delivery haemorrhage following uterine atony, and Coulibaly E.Y [31] also recorded a case of maternal death due to cardiac arrest during a caesarean section in a known hypertensive and obese patient.

CONCLUSION

Macrosomic delivery carries very real risks of maternal and perinatal morbidity and mortality. In our study, the normal maternal pelvis and cephalic presentation were the determining factors for the indications and success of vaginal delivery.

Conflict of Interest: None

REFERENCES

1. Merger, R., Levy, J., & Melchior, J. (1995). Précis d'obstétrique. Paris, Masson, 6th edition, 334-516P.
2. Carlus, C., Pacault, A., Gamarra, E., & Wallet, A. (2000). Macrosomic newborns in maternity wards, *J Gynecol Obst et Biol Reprod*, *29*(1), 25-32.
3. Papiernik, E., Carbrol, D., & Pons, J. C. (1983). Paris, médecine, science, Flammarion, 1995,1584P. Paris Masson 1ere éd. 1983, 148P.
4. Touzet, S., Rocher, L., Poucet, R., Coulin, C., & Berlard, M. (2002). Observational study of gestational diabetes practices based on a cohort of 701 women. *J Gynecol Obst et Biol Reprod*, 31, 248-255.
5. Sunneet, P., William, A., Robert, A., Vidy, B., Chaug, M., & Everett, F. (2005). Suspicion and treatment of the macrocosmic fetus. *Am J Obstetric et Gynecologic*, *193*(2), 332-346.
6. Meryem, F. (2016). Fetal macrosomia at term (340 cases) Med thesis Fès, n° 165/16.
7. Hanan, A. A., Sabah, E., & Bargach Samir, R. (2016). Macrosomie fœtal à propos de 1270 cas/ FetalMacrosomia about 1270 cases. *Glob J Med Res*, *16*(1).
8. Cissé, A. S. (2009). Epidemioclinical study of foetal macrosomia at the commune II reference health centre. Thesis of Méd. Bamako, n°119.
9. Keita, M. (2014). Epidemioclinical study of foetal macrosomia at the commune IV reference health centre. Medical thesis; Bamako, n°234.
10. Saleh, A. M., Al-Sultan, S. M., Moria, A. M., Rakaf, F. I., Turkistani, Y. M., & AlOnazi, S. H. (2008). Fetal macrosomia greater than or equal to 4000 grams: comparing maternal and neonatal outcomes in diabetic and nondiabetic women. *Saudi Med J*, *29*(10), 1463- 1469.

11. Valmori, J. (2018). Study of changes in the prevalence, risk factors and maternal-fetal complications of macrosomia between 2006 and 2017 at Conception Hospital. Medical thesis. Marseille Faculty of Medicine, p 95.
12. Luhete, P. K., Mukuku, O., Kiopin, P. M., Tambwe, A. M., & Kayamb, P. K. M. (2016). Macrosomie fœtale à Lubumbashi: facteurs de risque et pronostic maternel et périnatal. *Pan African Medical Journal*, *23*(1). http://www.panafrican-medjournal.com/content/article/23/166/full/ doi:10.11604.
13. Kamaté, M. N. (2020). Obstetric and perinatal complications of childbirth due to macrosomia in the obstetric gynaecology department of the chu Gabriel Touré. Bamako Medical Thesis, N°178.
14. Dolo, O. (2001). Delivery of a large foetus in the obstetrics and gynaecology department of the Point G University Hospital. A propos de 205 cas Thesis. Med.: Bamako, N° 85: 69P.
15. Thieba, B., Akontionga, M., Ouedraogo, A., Kaba, T., Ouattara, T., Lankouande, J., & Kone, B. (2004). Large fetuses: maternal-fetal prognosis in 143 cases at the maternity ward of the university hospital of Ouagadougou. *Journal de la SAGO*, 5, 22-28.
16. Keita, A. (2006). Epidemio-clinical study of foetal macrosomia observed at the commune V referral health centre: 100 cases. Medical thesis: Bamako, N° 232: 72p.
17. Traoré, A. K. Z. (2006). Delivery of large foetuses in the maternity ward of the commune V referral health centre. A propos de 107 cas. Thesis. Med: Bamako, N° 239.
18. Prual, A., Bouvier Colle, M. H., De Bernis, L., & Bréart, G. (2000). Severe maternal morbidity due to direct obstetric causes in West Africa: incidence and case fatality. Bulletin of the World Health Organization, Collection of articles, (N°3), 129-137.
19. Elhadji, M., Berthe, J., Venditlli, F., & Tabaste J. L. (1996). Evaluation of the diagnostic value of uterine height and maternal weight gain during pregnancy on the prediction of macrosomia. *REV Fr. Gynécol Obst et*, 91, 12, 24-26.
20. Ndiaye, O., Sylla, A., Cisse, C. T., Gueye, M., & Ndabashinze, P. (2005). Influence of maternal overweight on birth weight in a population of term newborns in Senegal. *J Pédiatr*, 18, 33-37.
21. Ehrenberg, H. M., Mercer, B. M., & Catalano, P. M. (2004). The influence of obesity and diabetes on the prevalence of macrosomia. *American journal of obstetrics and gynecology*, *191*(3), 964-968.
22. Limay Rios, O., Huaman Quintana, L., & Ayala Quintanilla, B. (2009). Maternal obesity and macrosomia. *Int journal of obstetrics and gynecology*, 107, 88-91.
23. Ducarme, G., Rodrigues, A., Aissaoui, F., Davitian, C., Pharisien, I., & Uzan, M. (2007). Pregnancy in obese patients: what risks should be feared? *Gynécol Obstét Fertil*, 35, 19-24.
24. Badji, C. A., Moreau, J. C., B. A. M. G., Dillo, D., Diouf, A., Dotou, C., Tahiri, L., & DiaDhiou, F. (1999). Delivery of large children at the Dakar University Hospital - 105 cases. Epidemiology and prognosis. Médecine d'Afrique Noire, 46(7).
25. Bish, A. (1955). Large children at birth studied from the obstetrical point of view. Thesis Medicine: Lyon, N° 134.
26. Gbaguidi, A. (1994). Macrosomic newborn: aetiological factors and perinatal complications - Apropos of 100 cases collected at the maternity ward of Abass Ndao Hospital in Dakar Thesis Med : Dakar, N° 64.
27. Modanlou, H. D., Komatsu, G., Dorchester, W., Freeman, R. K., & Bosu, S. K. (1982). Large-for-gestational-age neonates: anthropometric reasons for shoulder dystocia. *Obstetrics and gynecology*, *60*(4), 417-423.
28. Panel, P., de Meeus, J. B., & Yanoulopoulos, B. (1991). Delivery of a large child - guidelines and results from 198 cases. *J Gynécol Obstét Biol Réprod Paris*, 20, 729-736.
29. Turner, M. J., Rasmussen, M. J., Turner, J. E., Boylan, P. C., MacDONALD, D. E. R. M. O. T., & Stronge, J. M. (1990). The influence of birth weight on labor in nulliparas. *Obstetrics and gynecology*, *76*(2), 159-163.
30. Spellacy, W. N., Miller, S., Winegar, A., & Peterson, P. Q. (1979). Macrosomia maternal characteristics and infants' complications. *Obstét Gynécol*, 135, 495- 498.
31. Coulibaly, E. Y. (2008). Delivery of the big foetus at the Gabriel Touré University Hospital: Risk factors and maternal-foetal prognosis. Thesis. Med; Bamako, N°156.
32. Treisser, A. (1996). La macrosomie fœtale. - Mise à jour en Gynéco. Obstétric., Strasbourg, 159- 181.

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