AUCTORES
Globalize your Research

Journal of Obstetrics Gynecology and Reproductive Sciences
Gabkika Bray Madoué *

Open Access

Research Article

Post-Cesarean Parietal Suppurations; Clinical, and Therapeutic Aspects

Gabkika Bray Madoué [1]*, Mahamat Alhadi Chene [2], Aché Haroune [2], Saleh Abdelsalam [2], Hawaye Cherif [1], Hissein Adanao [1], Foumsou L [1]

[1] N'Djamena Faculty of human health sciences and N'Djamena Mother and Child University Hospital, Chad.

[2] N'Djamena Faculty of human health sciences. Chad.

***Corresponding Author:** Gabkika Bray Madoué, N'Djamena Faculty of human health sciences and N'Djamena Mother and Child University Hospital, Chad.

Received date: June 27, 2024; **Accepted date:** July 10, 2024; **Published date:** July 26, 2024.

Citation: Gabkika B. Madoué, Mahamat A. Chene, Aché Haroune, Saleh Abdelsalam, Hawaye Cherif, et al, (2024), Post-Cesarean Parietal Suppurations; Clinical, and Therapeutic Aspects, *J. Obstetrics Gynecology and Reproductive Sciences*, 8(5) **DOI:**10.31579/2578-8965/226

Copyright: © 2024, Gabkika Bray Madoué. This is an open-access article distributed under the terms of The Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract:

Background: Surgical site infections are one of the infectious complications after a surgical procedure. They are Mostly it's responsible for significant morbidity and mortality in health individuals.

Objective: improve the management of post-caesarean parietal suppurations.

Method: This was a cross-sectional, prospective analytical study covering a period of 8 months from December,1st 2022 to July,31st 2023. This study was Performed in N'Djamena Mother and child about epidemiological, clinical and therapeutic aspect of past ceasarean section suppuration

Results: he frequency of parietal suppuration was 7.9%, the median age was 23.28±5.51 years with extremes from 16 to 45 years. Mains epidemiological characteristics were: housewives (47.6%), married (56%) and living in the commune of N'Djamena (45.2%). The time to rupture of the membranes was not specified (36.9%). More than around 75 %of caesarean sections were performed urgently (90.5%). Half of the parietal suppurations occurred between the 4th and 7th postoperative days with an average of 8.87±4.6 days. Proteus vulgaris was the germ most frequently found (50%). Most germs were sensitive to the combination of Amoxicillin and Clavulanic acid (32.1%). The mean length of hospital stay observed in this study was 17.40±14.3 days, with extremes ranging from 4 to 72 days.

Conclusion: Post caesarean section parietal suppuration remains frequent. Better identification of the factors favouring this condition could significantly reduce its incidence and consequently improve maternal prognosis.

Keywords: caesarean; suppuration; N'djamena mother and child university hospital; Chad

1.Introduction

Caesarean section, avoided because of its alarming mortality rate just over a century ago., However, it is now the mode of delivery for one in three women in the United States and up to four out of five women in other parts of the world [1]. The most prevalence of caesarean section in obstetric surgery can be found in ancient Egyptian and Greek legends [2]. Although Caesarean section can save lives and is generally considered to be very safe, it can nevertheless be associated with a risk of complications [3,4], in particular surgical site infections (parietal suppurations), which are one of the infectious complications that do not exist before the operation, and occur after surgery [2]. Despite the availability of various sterilization and hygiene facilities in healthcare establishments, these infections are increasingly persistent because of certain risk factors [5]. The prevalence of suppurations are different from country to country. For example, in the United States 10% in 2014 [6]. France 1.5% in 2016 [7]. Burkina Faso 3.5% in 2015 [8] were influenced from the suppurations.

In Chad, there are no data on post cesarean section suppuration, and this is way we conducted this study aiming to improve it management.

2.Method

This was a cross-sectional, analytical study covering a period of 8 months from December, 1st 2022 to July, 31st 2023. The study was Performed in N'djamena Mother and Child University hospital about post caesarean section parietal suppuration: epidemiological, clinical and therapeutical aspects. Studied population consisted of patients having undergone a caesarean section and treated for parietal suppuration in the gynecology and obstetrics department. Data were collected using individual file. For Analize we used SPSS, 22 and Epi info 7.0. statistical methods like khi2 and p value

were used to compare data's (p sensitive when≤ 5%). Could you please add the IRB approved number.

3.Results

During the study period, we recorded 1061 caesarean among 3927 giving a frequency of 27%. Among patients that have undergone caesarean section,84 from 1061 cases have developed a parietal suppuration, giving 7.9%.

The age group of 25-29 was the most represented with 51.2%. The median age was 23.28±5.51 years, with extremes ranging from 16 to 45 years.

Mains epidemiological aspects were: No schooled (54.8%), housewives (47.6%). married (56%), referred (57.1%) and had a low socio-economic status (78.6%).

Patients with pathological leucorrhea represented 39.3%. The amniotic membrana were ruptured before the beginning of labor in 36.9% In the half of case (50%) the duration of operations was between 60 and 90 mn, with an average duration of 37.78±9.10 mn and extremes of 20 and 75 mn (Table I).

Characteristics		n	%	RR	IC (95%)	p
Unruptured		16	19.0			
	< 12h	10	11.9			
	>12h	27	32.1	0.7	0.52-0.99	0,005
	No precised	31	36.9			
Duration of rupture of membranes (in hours)	6 à 8h	12	14.3			
	8 à 10h	13	15.5			
	10 à 12h	13	15.5			
	> 12h	46	54.8	0.79	0.62-1.04	0.010
Duration of labour (mn)	20 à 30mn	4	4.8			
	30 à 60mn	26	31.0			
	60 à 90mn	42	50.0	1.03	0.79-1.34	0.0001
	90mn- 120mn	10	11.9			
	> 120mn	2	2.4			

Table I: Distribution of patients according to risk factors for suppuration

In 40,5% women presented with a fever on admission (40.5%), and the majority of patients (61.9%) complained of abdominal pain. Caesarean sections (90.5%) were performed on in emergency. The number of health personal in the operating room during the operation was greater was at least than 6 in 67.9% and had and influence on the suppurations (p=0.02).

Onset of infection (days)	n	%
<3 j	6	7.1
4 - 7	42	50.0
7 -12	29	34.5
>12	7	8.3
Total	84	100

Table II: time between caesarean section and onset of infection

Half of the parietal suppurations occurred between the 4th and 7th postoperative days with an average of 8.87±4.6 days, with extremes ranging from 4 days to 30 days (Table II).

Identified Germ	n	%
E coli	6	7.1
Proteus mirabilis	2	2.4
Proteus vulgaris	18	21.4
Staphylococcus aureus	9	10.8
Streptococcus agalactie	1	1.2
Aucun test	48	57.1
Total	84	100

Table III: identified germ

Bacteriological sampling for antibiotic susceptibility testing was not performed in 48 patients (57.1%). Proteus vulgaris was the germ most frequently found (50%) (Table IV).

Most germs were sensitive to the combination of Amoxicillin and Clavulanic acid (32.1%). Antibiotic prophylaxis combining ceftriaxone and metronidazole was the most common in 81% of cases.

Type of bandage		n	%	p
Frequency of bandage	One time daily	31	36.9	
	2 times daily	47	56.0	0.021
	1 time each 2 days	6	7.1	
Type of bandage	Simple bandage	28	33.3	
	Suture of wall	54	64.3	0.009
	Suture releasing	2	2.4	

Table IV: type of bandage

The suture of wall was performed in 64.3%, and in 56% the bandage was 2 times daily.

The maternal mortality rate was 1.19%.

The average length of hospital stay was 17.40±14.3 days, with extremes of 4 and 72 days.

4. Discussion

During the study 84 cases of parietal suppuration were recorded out of a total of 1061 caesarean sections performed giving a frequency of 7.9%. Ibrahima et al. in Guinea in 2022 reported a frequency of 4.4 [9]. Several studies carried out across sub-Saharan Africa noted variable frequencies: wendmagegn et al [10] in Ethiopia (11.7%), Sawadogo etal.in Burkina Faso (3.5%) [8]. These findings showed that the incidence of post caesarean section infections is still high in developing countries.

We reported a high proportion of housewives representing (47.6%). Yobi et al. in Burkina Faso [11], and Sawadogo et al [8] noted the predominance of housewives (70%, and 74,3%),[12]. In terms of schooling, unschooled patients represented 54.8%, this is similar with the 64.3% reported by Sissokoet alin Bamako [12]. The high frequency of unschooled people women could be linked to female illiteracy in the general population on the one hand, and in the other with, it is related to cultural factors.

Married women accounted for the majority (56%) of cases of suppuration. This result is similar to that of Sawadogo et al. who reported 77% [8]. The predominance of married couples is linked to cultural and religious values, which do not allow pregnancy before marriage.

Surgical history was found in 33.4% of cases. Caesarean section was the most common, accounting for 22.6% of cases.

These results differ from those of Krieger et al, Saad et al. in Morocco and Kalibushi et al. in Rwanda, who noted a rate ranging from 26% to 52.6% of scarred uterus [15]. For Dupont J et al. in Yaoundé, prophylactic caesarean section was the most frequent indication with 41.52% [16]. The high frequency of scarred uterus could be linked to the increased indications for caesarean section among parturient nowadays. Genital infections played a significant role in this series, with 39.3% of pathological leucorrhea.

More than half of the patients were referred (57.1%). These results corroborate those of Salam [17] at Point G Hospital and Sylla [18] in Bamako, who reported 42.3% and 39.8%, respectively of referred patients.

More than 75% of caesarean sections were performed urgently (90.5%). This result corroborates those reported in the literature. Ibrahima KB et al. reported 83.33% of emergency caesarean section [9], this was same for Sawadogo et al. [8]. which is justified by the fact that emergency caesarean section is cited in the literature as a factor favoring post-caesarean section suppuration, especially as asepsis and antisepsis measures are not well combined [19].

The time of rupture of the membranes on admission was in the majority of cases unspecified (36.9%) with a p-value=0.005, statistically significant. This result is similar to that found by certain authors [13,21, 22] who state that premature rupture of the membranes is considered to be an independent risk factor for surgical site infection.

With regard to the duration of labor, it was long (more than 12 hours) in half of the patients (54.8% of cases). This result is comparable to those of Ibrahima et al who reported 64.3% [9]. This could be explained by the fact that the longer the duration of labor, the longer the time to rupture of the membranes, the greater the number of vaginal examination and the greater the rise of germs from the vagina to the uterine cavity. The average duration of the procedure was 37.78 ± 9.10 min. The duration of caesarean section more than 1 hour increases the risk of post-caesarean suppuration and exposes the fetus to anaesthetic drugs; on the other hand, a shorter operation has a protective effect against surgical site infections [4]. In this context, to minimize the risk of infection, intraoperative antibiotic prophylaxis is systematically used, and this treatment is continued post-caesarean section. However, this antibiotic therapy is more or less standard and is not adapted to the bacterial ecology of the environment.

The mean time to diagnosis of parietal suppuration was 8.87±4.6 days, with extremes ranging from 4 to 30 days. The majority of suppurations (50%) were diagnosed between the 4th and 7th postoperative day in this series. Thus, post-caesarean section suppuration in this study is essentially due to a lack of therapeutic compliance and a failure by the patient and those around her to observe basic wound hygiene rules.

Bacterial infectious complications were dominated by parietal suppurations, accounting for 72.6% of cases. These results are similar to those of Diallo MH et al. [22] in Guinea and, who reported surgical site infection as the main postoperative complication, with 71.59%. In Tunisia in 2018, Latifa and al [23] found 5% surgical site infection, for Harou and al [24] in Morocco, this result could be explained by the fact that parietal suppuration remains one of the major post-caesarean complications in developing countries. The main germs identified were Proteus vulgaris, Staphylococcus aureus (25%) and Escherichia coli (16%). Those author [25] reported a predominance of Staphylococcus aureus representing 20%, followed by Escherichia coli (18%). In all case the best way is to prescribe antibiotics covering these germs when risk factors exist.

The duration of hospitalization stay observed in this study was 17.40±14.3 days, with extremes ranging from 4 to 72 days. This was comparable to the results of Berthé and al [5] in Bamako, who recorded an average hospital stay of 17.5 days. For Yobi and al [11], the average stay was 23.8 days, with extremes of eight (8) and sixty-four (64) days. This long hospital stay leads

to complications such as infection, especially for patients and their families, and increases the risk of other types of nosocomial infection.

Management in this series was medical (two-time bandage associated with antibiotic) in 56%. This result is lower than that of Khaled G and al [26], who reported 62.9% out of 521 cases. Supplementary surgical procedure was done in 64.3%, this is higher than the 22% noted by of Khaled G et al [26]. The medical procedure involving the use of antibiotics (Amoxicillin+clavulanic acid) was similar to that used by Barry and al [27].

The majority of patients (63.9%) had no other pathology associated with parietal suppuration, and we noted a low maternal mortality rate (1.19%) in this series. Mpogoro and al [28] recorded one death due to septicemia, and Demisew and al [29] reported a case fatality rate of 9%. Factor like availability of medicine and the exemption of fees in our hospital during the study can explain our findings.

5. Conclusion

This study showed that caesarean section should not be considered as a simple procedure without morbid and even fatal maternal and fetal complications. Better identification and prevention of the factors contributing to these complications could significantly reduce post-caesarean section parietal suppuration and consequently improve maternal prognosis.

References

1. Clarel Antoine, Bruce K. Young (2021). Cesarean section one hundred years 1920-2020: the Good, the Bad and the Ugly.J. Perinat.Med,49(1), 5-16
2. Kaki BB, Biayi MJO, Musasa MP, Mpiana MP, Kakinga TB, et al. (2024). Caesarean section and surgical site infections: Epidemiological aspects and associated factors in hospitals in the city of Lubumbashi. Revue de Médecine et de Santé Publique,7(1),211 - 229.
3. Farret TCF, Dallé J, Monteiro V, Riche CVW, Antonello VS (2015). Risk Factors for surgical site infection following cesarean section in a Brazilian Women's Hospital: a case-control study. Braz J Infect Dis,19(2),13-17.
4. Zejnullahu VA, Isjanovska R, Sejfija Z, Zejnullahu VA (2019). Surgical site infections after caesarean section at the Kosovo University Clinical Centre: rates, microbiological profile and risk factors.Infect Dis,19(16),752-1186
5. Bethe B, Traoré S, Donate I, Sogoba D, Tall S, et al. (2019). Comparative study of surgical site infections: systematic versus iterative caesarean section at the reference health centre of commune V of the district of Bamako/Mali. Heth sci dis,14(2),6-1.
6. Shrestha B, Marhatha R, Giri A, Jaisi S, Maskey U (2014). Surgical wound to relationship between site infection and antibiotic prophylaxis in administered before skin incision and after cord clamping during caesarean section and delivery. Nepal Med Coll J NMCJ,16(20),148¬-151.
7. Simon L, Heriteau F, Astagneau P, Bernet C, Berger Carbonne A (2019). Surveillance of surgical site infections in French healthcare establishments. ISO-Raisin network, France. 2017. Saint-Maurice (Fra) : Santé publique France,261-78.www.santépubliquefrance.fr
8. Sawadogo YA, Komboigo E, Kiemtore S, Zamane H, Ouédrago I, et al. (2019). Post ¬parietal caesarean section suppurations at the Centre Hospitalier Universitaire Yalgado Ouédraogo, Burkina-Faso: epidemiological, clinical, therapeutic and prognostic aspects. *Pan Afr Med* J,32(35),1-7.
9. Ibrahima K B, Abdouramane D, Sekouba K, Hierro S D, Oumar D, et al (2022). Parietal suppurations int the maternity of secund level in Guinea: socio-demographics, clinics and therapeutic and prognosis. *Journal de gynécologie et d'obstétrique*,10(1) ,26-31.
10. Wendmagegn T A, Abera GB, Tse Haye WT Gebresslasie KB, Tella BG (2016). Extent and determinants of surgical site infection among women undergoing caesarean section at Ayder comprehensive speciality hospital.Mekelle town Tigray region:northern Ethiopia ,18(8),6-9.
11. Yobi SA, Komboigo E, Sibraogo K, Zamane H, Ouédrago I, et al. (2019). Post-caesarean parietal suppuration at the Centre Hospitalier Universitaire Yalgado Ouédraogo, Burkina Faso: Epidemiological, clinical therapeutic and prognostic aspects. *Pan-African Medical Journal*.32(1):32-35.
12. Sissoko A, Traoré A, Kanté I, Bocoum A, Fane S, et al. (2020). Complications of caesarean section at CHU Gabriel TOURE, Bamako/Mali. Journal d'obstétrique et *de gynécologie*,10(4),546-57.
13. Krieger Y, Walfisch A, Schierner (2017). Surgical site infection after caesarean section and childbirth: trends and risk factors *J Matam Féal Neonatal Med*,30(1),8-12.
14. Saad A,Saadi H,Mimouni A (2017).The epidemiological profile of maternal complications of caesarean section at CHR EL Farabi Oujda in Morocco. Pan african medical journal,27(10),2-6.
15. Kalibushi BJ,Ndoli J,Bayingana C,Bahuhe I,Gilson GJ, Habimana E (2016).Prevalence and risk factors of surgical site infection after caesarean delivery in a teaching hospital in rural Rwanda: a prospective cross-sectional study. Int Curr.Microbiol.Application.sci,5(6),631-637.
16. Dupont J,Ngowa K,Ngassam A,Fouogue JT,Metolo J,Medou A, and al (2015).Early maternal complications of caesarean section: about 460 cases in du and university hospitals of Yaoundé/ Cameroon. *Panafrican medical journal*,21(5),5-6.
17. Salam A (1996). The demographic and obstetric aspects of post-caesarean section infectious complications in the obstetrics and gynecology department: [thesis:med]. Bamako, Faculty of Medicine and Odontostomatology.
18. Sylla C,Traoré SO,Dembélé S,Dao S,Togola L Boucoum A, and al (2021). Free caesarean section in the health district of *Bougouni.Health science Dis* ,22(1),86-96.
19. Coulibaly D,Djenf (2021)a. Study of bacterial infections of the post-caesarean operative site in the gynecological-obstetrics department at the CSRef of commune v of the district of Bamako [Thesis:Med]. Bamako: Faculty of Medicine and Odontostomatology .
20. Bizuayew H, Abebe H, Mullu G, Bewuket L, Tsega D, Alemye T (2020). Post-cesarean section surgical site infection and associated factors in East Gojjam zone primary hospitals, Amhara region, North West Ethiopia. PLoS ONE,16(12), e0261951.
21. Assawapalanggool S,Kastpibal N,Sirichotiyaku S,Arora R, Suntornlimsir W (2016) .Risk factors for cesarean surgical site infections at aThai Myanmar border hospital. Am JInfec tControl,44(9),990-995.

22. Diallo M H,Baldé IS,Dilla AD,Baldé O,Diallo BS,Sylla I, and al(2019). Maternal complications of caesarean section in a country with limited resources: the case of the maternity ward of the regional hospital of Kankan, Guinea. Open journal of obstetrics and gynaecology,9(6),981-990
23. Latifa M,Noida M,Hadjer H,Missouri A,Olfa BE,Manssouri W, and al (2018). Incidence and risk factors of surgical site infection after caesarean section in a maternity hospital in Tunisia. Revue de santé publique,30(3),339-47.
24. Harou K,Umouloun R,El Adib AR,Soummani A (2012).Post-caesarean necrotizing.Fasciitis: a rare complication. Méd.Urgence,2(6),405-407.
25. CPias Ile-de-France (2016). Surveillance des infections du site opératoire dans les établissements de santé français. Résultats. [Consultéenaout2023].
26. Khaled G,Ahmed R,Abdelraheim A,Saad E,Eissa M,Khalifa D, and al (2021).Incidence, risk factors and management of post cesarean section surgical site infection (SSI) in a tertiary hospital in egypt. BMC Pregnancy and child birth,21(4),643-648
27. Barry MS, Diallo FB, Kondano SY, Diallo MB, Diallo MC, Fofana and al (2023). Management of post-caesarean complications at the General Surgery Department of the Ignace Deen National Hospital. International Journal of Surgical Sciences,7(3),111¬114
28. Mpogoro FJ,Mshana SE,Mirambo MM,Kidenya BR,Gumodok B,Imirzalioglu C (2018).Incidence and producers of surgical site infections following caesarean section at Bugando Medical Tanzania. Childbirth. Heath sci Dis ,18(5),489-450.
29. Amenu D,Belachev T,Araya F (2011).Surgical site infection rates and risk factors among obstetric cases at Imma southwestern ethiopia university specialized hospital.Heath sci Dis,21(10),91-100.

This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article, Click Here: **Submit Manuscript**

DOI:10.31579/2578-8965/226

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more https://www.auctoresonline.org/journals/obstetrics-gynecology-and-reproductive-sciences