Retained Placenta in a Tertiary Nigerian Centre: Incidence, Risk Factors, and Maternal Outcomes from a Five-Year Retrospective Study (2018-2022) at Esuth-Parklane

Ortuanya Kelvin Emeka[1], Okeke Miracle Chidiebere[2*], Ezenwaeze, Malachy Nwaeze[3]

[1]Department of Obstetrics and Gynaecology, Enugu State University of Science and Technology

[2]Department of Internal Medicine, Enugu State University Teaching Hospital Parklane

[3]Department of Pharmacology and Therapeutics, State University of Medical and Applied Sciences, Lgbo-Ano, Enugu State, Nigeria

DOI: https://doi.org/10.51244/IJRSI.2026.13020032

Received: 15 January 2026; Accepted: 21 January 2026; Published: 25 February 2026

ABSTRACT

Background: Retained placenta is a significant complication of the third stage of labour and an important cause of postpartum haemorrhage and maternal morbidity in low-resource settings. Despite improvements in emergency obstetric care, delayed presentation and unbooked status remain common challenges in South-East Nigeria.

Aim: To determine the incidence, risk factors, clinical presentation, management modalities, and maternal outcomes of retained placenta at Enugu State University Teaching Hospital (ESUTH), Parklane, Enugu, over a five-year period.

Methods: This was a retrospective descriptive study of women managed for retained placenta at or beyond 28 weeks of gestation between January 2018 and December 2022. Case records were retrieved from the labour ward, gynaecology emergency unit, and medical records department. Relevant socio-demographic, obstetric, clinical, and outcome variables were extracted and analyzed using SPSS version 26.0. Results were presented using descriptive statistics.

Results: A total of 112 cases of retained placenta were identified during the study period. Most affected women were aged 20–30 years (48.2%) and multiparous (58.1%). The majority were unbooked (82.1%) and delivered outside the study centre, mainly at home or with traditional birth attendants (59.8%). Active haemorrhage was present in 30.4% at presentation. Manual removal of the placenta was the predominant treatment modality (65.2%), and 43.8% required blood transfusion. Although 89.3% were discharged without complications, 10.7% experienced morbidity. No maternal mortality was recorded.

Conclusion: Retained placenta remains a clinically significant third-stage complication at ESUTH, particularly among unbooked and non-institutionally delivered women. Improved antenatal care utilization, skilled birth attendance, and strengthened referral systems are essential to reducing associated maternal morbidity.

Keywords: Retained placenta; Third stage of labour; Postpartum haemorrhage; Manual removal of placenta; Maternal morbidity; ESUTH.

INTRODUCTION

Retained placenta is a recognized complication of the third stage of labour and remains an important cause of maternal morbidity and mortality worldwide. It is generally defined as the failure to deliver the placenta within 30 minutes after delivery of the fetus following active management of the third stage of labour.[1] The condition may result from uterine atony, morbidly adherent placenta, or mechanical entrapment, and is frequently

associated with primary postpartum haemorrhage (PPH), which is a leading cause of maternal death globally and in Nigeria.[1,2] In Nigeria, obstetric haemorrhage remains a major contributor to maternal mortality. National and regional data consistently identify postpartum haemorrhage as one of the most significant direct causes of maternal death.[2] In South-East Nigeria, including Enugu State, haemorrhage has repeatedly been reported as a leading obstetric emergency. A five-year review of maternal mortality at the University of Nigeria Teaching Hospital (UNTH), Ituku-Ozalla, Enugu, identified haemorrhage as one of the most common direct causes of maternal death.[3] Similarly, a study conducted in Enugu examining maternal mortality patterns confirmed that obstetric haemorrhage continues to account for a significant proportion of maternal deaths in tertiary institutions within the state.[4]

The incidence of retained placenta globally ranges between 1% and 3% of vaginal deliveries.[1] However, variations occur across regions due to differences in case definitions, obstetric practices, referral systems, and patient characteristics. In South-East Nigeria, a study conducted in Abakaliki, Ebonyi State, reported an incidence of 0.22% over a five year period.[5] Although this provides regional insight, there remains limited published data specifically evaluating retained placenta at Enugu State University Teaching Hospital (ESUTH), Parklane, Enugu.

Risk factors associated with retained placenta include advanced maternal age, multiparity, previous uterine surgery, preterm delivery, and previous history of retained placenta.[1] In Enugu and its environs, unbooked status and delayed presentation have been identified as important contributors to adverse obstetric outcomes.[6] Obstetric complications among unbooked women managed in tertiary institutions in Enugu have been associated with increased risk of haemorrhage and emergency interventions.[6] These systemic and clinical factors may influence the pattern and outcomes of retained placenta within referral centres.

Complications of retained placenta include severe postpartum haemorrhage, hypovolaemic shock, puerperal sepsis, subinvolution of the uterus, need for blood transfusion, hysterectomy, and maternal death if not promptly managed.[1] Reviews of maternal mortality in Enugu have documented that haemorrhage-related complications frequently necessitate blood transfusion and emergency surgical intervention.[3,4] Early recognition and timely management are therefore critical in reducing associated morbidity and mortality.

Management options for retained placenta include medical and surgical interventions. Medical approaches typically involve administration of uterotonics such as oxytocin, while surgical management often requires manual removal of the placenta under appropriate anaesthesia.[1] In tertiary institutions such as ESUTH, comprehensive emergency obstetric care including blood transfusion and surgical intervention is available; however, institutional data are necessary to evaluate trends in management and outcomes over time.

Enugu State University Teaching Hospital (ESUTH), Parklane, Enugu, is a major referral centre providing specialist obstetric care to Enugu State and neighbouring states in South-East Nigeria. Despite its critical role in managing obstetric emergencies, there is a paucity of published data specifically examining retained placenta at ESUTH over an extended period.

The Most Recent Comparable Regional Study From South-East Nigeria was Published in 2019 in Abakaliki.[7] Given Evolving Obstetric Practices, Improvements in Emergency Obstetric Services, and Changing Referral Patterns within Enugu State, There is a need to Reassess the Burden, Associated Risk Factors, Management Modalities, And Maternal Outcomes Of Retained Placenta Within This Institution. this Study Therefore Sought Retained Placenta in a Tertiary Nigerian Centre: Incidence, Risk Factors, and Maternal Outcomes from a Five-Year Retrospective Study (2018-2022) at Esuth-Parklane, Enugu. The Findings Contribute to Regional Epidemiologic Data and Offer Context-Specific Insights for Maternal Health Policy and Emergency Obstetric Preparedness in Enugu State.

METHODOLOGY

This study was carried out in the Department of Obstetrics and Gynaecology of Enugu State University Teaching Hospital (ESUTH), Parklane, Enugu, Nigeria. ESUTH is a tertiary referral centre located in Enugu State, South-East Nigeria, providing comprehensive obstetric and gynaecological services, including emergency obstetric care. The hospital serves as a major referral centre for Enugu State and neighbouring states such as Anambra,

Ebonyi, Abia, and Benue. Patients are referred from maternity homes, mission hospitals, state general hospitals, and private clinics, while a significant number also present as self-referrals, particularly in emergency situations. The Department of Obstetrics and Gynaecology manages both booked and unbooked patients and conducts a substantial number of deliveries annually.

This was a five-year retrospective descriptive study of cases of retained placenta managed at the Department of Obstetrics and Gynaecology, ESUTH, Parklane, Enugu. The study covered a five-year period from January 2018 to December 2022. The study population comprised all women who were managed for retained placenta at or beyond 28 weeks of gestation within the study period.

The case files of all eligible women diagnosed and treated for retained placenta during the study period were retrieved and reviewed. Records were obtained from the Medical Records Department, Labour Ward, and Gynaecology Emergency Unit. To ensure completeness of case identification, the delivery register, labour ward register, theatre records, and obstetric emergency registers were cross-checked. Only case files with complete and retrievable clinical and outcome data were included in the final analysis. Records with substantial missing information regarding primary outcome variables were excluded. No imputation was performed due to the retrospective nature of the study. For the purpose of this study, maternal morbidity was defined as the occurrence of any clinical complication following retained placenta requiring additional medical intervention, including haemodynamic instability (hypotension or shock), need for blood transfusion, puerperal sepsis, prolonged hospital stay (>5 days), or surgical intervention beyond manual removal.

Data were extracted using a structured data collection proforma designed for the study. Information collected included socio-demographic characteristics such as age, occupation, and educational level, as well as obstetric variables including parity, booking status, and gestational age at delivery.

Additional clinical information extracted included place of delivery, mode of presentation, management modality employed, number and requirement of blood transfusion, maternal outcome, and duration of hospital stay. The collected data were coded and entered into the Statistical Package for the Social Sciences (SPSS) version 26.0 for analysis. Descriptive statistical methods were employed, and results were presented as frequency and percentage and a p-value of less than 0.05 was considered statistically significant.

RESULTS

Table 1: Socio-Demographic Characteristics

Most respondents were aged 20–30 years (48.2%), followed by those aged 30–34 years (26.8%), indicating that retained placenta occurred predominantly among women in their reproductive prime. A majority were multiparous (parity 2–4, 58.1%), while 22.3% were grand multiparous.

Regarding education, 43.7% had tertiary education, though a significant proportion had only primary or no formal education. More than half of the women were rural residents (56.2%), and most deliveries occurred at term (87.5%). Notably, 82.1% of the women were unbooked, highlighting poor antenatal care utilization among the study population.

Table 1: Socio-Demographic Characteristics

Variable	Frequency	percentage
Age		
<20	13	11.6
20 – 30	54	48.2
>30 – 34	30	26.8
≥35	15	13.4

Total	112	100
Parity		
1	22	19.6
2-4	65	58.1
≥5	25	22.3
Total	112	100
Educational Level		
No formal education	6	5.4
Primary	26	23.2
Secondary	31	27.7
Tertiary	49	43.7
Total	112	100
Occupation		
House wife	13	11. 6
Trader/POS	35	31.3
Farmer	23	20.5
Civil servants	19	17.0
Hair dresser	22	19.6
Total	112	100
Residence		
Rural	63	56.2
Urban	49	43.8
Total	112	100
Gestational Age		
Pre-term	14	12.5
Term	98	87.5
Total	112	100
Booking Status		
Booked	20	17.9
Unbooked	92	82.1
Total	112	100

Table 2: Clinical Presentation at Admission

The majority of deliveries occurred at home or with traditional birth attendants (59.8%), while only 4.5% delivered at the study center. Most deliveries were conducted by unskilled attendants (59.8%), reflecting gaps in skilled birth attendance. At presentation, 30.4% of patients had associated hemorrhage.

Although 67.9% were normotensive, a considerable proportion presented with hypotension or shock (25.0%), underscoring the severity of the condition and the delay in referral.

Table 2: Clinical Presentation at Admission

Variable	Frequency	Percentage
Place of delivery		
Home/TBA	67	59.8
Maternity/PHC	33	29.5
Hospital (others)	7	6.25
ESUT-TH	5	4. 5
Total	112	100
Attendee at delivery		
Unskilled	67	59.8
Doctor	19	17.0
Nurse midwife	36	32.0
Self	10	8.8
Total	112	100
Haemorrhage at presentation		
Yes	34	30.4
No	78	69.6
Total	112	100
Hemodynamic status at presentation		
Normotensive	76	67.9
Hypotensive	16	14.3
Shock	12	10.7
Hypertensive	8	7.1
Total	112	100

Table 3: Identified Risk Factors for Retained Placenta

Being unbooked (25.0%) was the most common risk factor identified, followed by multiparity (18.8%) and delivery by unskilled attendants (11.6%). Home delivery (9.8%) and deliveries in primary health care or maternity centers (8.0%) were also notable. Other risk factors included ergot use, preterm labor, previous cesarean section, and previous history of retained placenta, although these were less frequent. This highlights the multifactorial nature of retained placenta in the study population.

Table 3: Identified Risk Factors

Variable	Frequency	Percentage
Unbooked	28	25.0
Multiparity	21	18.8
Unskilled	13	11.6

Home delivery	11	9.8
PHC/Maternity	9	8.0
Ergot use	8	7.1
Abortion	3	2.7
Previous C/S	3	2.7
Preterm labour	7	6.25
Induction of labour	2	1.8
> 35 years	2	1.8
Previous history of retained placenta	2	1.8
Preeclampsia	1	0.9
Self-delivery	2	1.8
Total	112	100

Table 4: Treatment Modalities

The predominant treatment modality was manual removal of placenta (65.2%), followed by uterine curettage (20.5%). Oxytocin infusion and repeat controlled cord traction were used in a smaller proportion of cases. Additionally, 43.8% of patients required blood transfusion, reflecting significant blood loss, while 19.6% received oxygen therapy as part of supportive management. These findings demonstrate the resource-intensive nature of retained placenta management.

Variable	**Frequency**	**Percentage**
Oxytocin infusion	7	6.25
Manual removal of placenta	73	65.2
Curettage	23	20.5
Repeat controlled cord traction	9	8.05
Total	112	100
Blood transfusion		
Yes	49	43.8
No	63	56.2
Total	112	100
Oxygen use		
Yes	22	19.6
No	90	80.4
Total	112	100

Table 4: Treatment Modalities

Most women were alive and well at discharge (89.3%), while 10.7% survived with morbidity. The majority of patients stayed in the hospital for 3 days (56.3%), indicating relatively prompt recovery following intervention. However, 21.3% required hospitalization for five days or more, likely reflecting complications such as hemorrhage, anemia, or infection. Overall, maternal outcome was favorable, though preventable morbidity remained significant.

Table 5: Maternal Outcome

Variable	Frequency	percentage
Alive and well	100	89.3
Alive with morbidity	12	10.7
Total	112	100
Duration of hospital stay		
2 days	20	17.9
3 days	63	56.3
4 days	5	4.5
5 days	15	13.4
> 5 days	9	7.9
Total	112	100

DISCUSSION

This five-year retrospective review at Enugu State University Teaching Hospital (ESUTH), Parklane, Enugu, demonstrated that retained placenta, although relatively infrequent, remains a clinically significant complication of the third stage of labour. The incidence observed in this study is comparable to findings from other Nigerian tertiary institutions, including reports from Port Harcourt and Ibadan, which documented similarly low institutional rates below the global estimate of 1–3%.[8,9] These lower figures in tertiary settings may reflect differences in documentation, referral patterns, and active management of the third stage of labour.

The high proportion of unbooked patients in this study is consistent with earlier Nigerian studies that identified lack of antenatal care as a major contributor to obstetric emergencies.[10,11] Unbooked women are more likely to present late with complications, including retained placenta and associated haemorrhage. Eze et al.[10] reported increased obstetric morbidity among unbooked women managed in Enugu, underscoring the relationship between poor antenatal utilization and adverse outcomes. The predominance of home deliveries and deliveries conducted by unskilled birth attendants further reinforces the systemic gaps in skilled birth attendance within the region. Similar findings were reported in Ibadan, where retained placenta was more common among women of lower socioeconomic status who delivered outside tertiary facilities.[9]

Multiparity was identified as a prominent risk factor in this study, consistent with findings from Southwest Nigeria and other low-resource settings.[11,12] Owolabi et al.[11] demonstrated that multiparity significantly increases the risk of retained placenta, possibly due to uterine muscle fatigue and abnormalities in placental separation. Advanced maternal age and previous uterine interventions, though less frequent in this study, are also recognized risk factors in the literature.[12]

Manual removal of the placenta was the most frequently employed treatment modality in this study. This aligns with established obstetric practice, as manual removal remains the definitive intervention when conservative measures fail.[13,14] Tandberg et al.[15] demonstrated that manual removal is associated with significant blood loss and increased transfusion requirement compared to uncomplicated third stage of labour. The relatively high rate of blood transfusion observed in this study reflects the haemorrhagic burden associated with retained placenta and underscores its importance as a major indication for transfusion in the third stage of labour, as previously reported in Nigerian tertiary hospitals.[9,11]

Although no maternal mortality was recorded during the study period, a proportion of patients experienced morbidity, including haemodynamic instability and prolonged hospital stay. Similar observations were reported in a systematic review evaluating complications of retained placenta, which emphasized that morbidity remains substantial even when mortality is prevented through timely intervention.[16] The absence of maternal death in this

study likely reflects the availability of comprehensive emergency obstetric care at ESUTH, including access to blood transfusion, theatre services, and skilled personnel.

The findings of this study also highlight broader health systems challenges, including inequitable access to skilled birth attendance, delayed referral pathways, and limited emergency preparedness at primary care levels. Strengthening referral linkages between community birth attendants and tertiary centres, ensuring blood bank readiness, and expanding community antenatal engagement are critical interventions. In line with global maternal health strategies aimed at reducing preventable postpartum haemorrhage, active management of the third stage of labour remains essential, particularly in low-resource settings.

This study has several limitations. The retrospective design limits causal inference and is subject to documentation bias. Some case records were incomplete and excluded, which may introduce selection bias. Being a single-centre study, the findings may not be generalizable to all healthcare settings in Nigeria. Additionally, the absence of advanced statistical modelling limits the strength of predictive conclusions.

CONCLUSION

Retained placenta remains an important obstetric complication at Enugu State University Teaching Hospital despite its relatively low incidence. The condition was predominantly observed among unbooked, multiparous women and those delivered outside tertiary healthcare facilities. Manual removal of the placenta was the mainstay of management, and a significant proportion of patients required blood transfusion due to associated haemorrhage.

Although no maternal mortality occurred during the study period, morbidity was evident, particularly among women who presented late. The findings emphasize the need for improved antenatal care uptake, increased skilled birth attendance, and strengthened referral systems to reduce preventable complications associated with the third stage of labour.

RECOMMENDATIONS

There is a need for intensified public health education in Enugu State to promote early antenatal booking and delivery in health facilities with skilled birth attendants. Community-based awareness programs should emphasize the risks associated with home delivery and unskilled birth attendance. Institutional protocols should reinforce routine active management of the third stage of labour (AMTSL), including prophylactic oxytocin administration. Standardized referral protocols between primary, secondary, and tertiary facilities should be implemented to minimize delays. Strengthening blood bank capacity and emergency transfusion services is essential to improve outcomes in cases complicated by haemorrhage. Future prospective multicentre studies in South-East Nigeria are recommended to further explore predictors and long-term outcomes of retained placenta. Integration with maternal near-miss frameworks and development of predictive risk models for transfusion and morbidity would provide valuable tools for resource-limited settings.

REFERENCES

1. World Health Organization. WHO recommendations for the prevention and treatment of postpartum haemorrhage. Geneva: World Health Organization; 2012.
2. Okonofua F, Ntoimo LFC, Ogu R, Galadanci H, Gana M, Adetoye D, et al. Prevalence and determinants of maternal mortality in Nigeria: A systematic review. Afr J Reprod Health. 2018;22(3):132–144.
3. Umeora OUJ, Egwuatu VE. Maternal mortality in a Nigerian tertiary hospital: A 5-year review. Niger J Clin Pract. 2008;11(3):266–270.
4. Ezugwu FO, Onah HE, Ezugwu EC, Okafor II. Maternal mortality in a transitional hospital in Enugu, South East Nigeria. Afr J Reprod Health. 2009;13(4):67–72.
5. Eze JN, Obuna JA, Umeora OUJ. Retained placenta in a tertiary hospital in South East Nigeria. Niger J Clin Pract. 2008;11(3):276–279.
6. Eze JN, Umeora OUJ, Obuna JA, Egwuatu VE. Obstetric complications in unbooked women at a tertiary hospital in Enugu, Nigeria. Niger J Clin Pract. 2010;13(3):336–340.

7. Ugoji D, Egbuji C, Asiegbu O, Maryrose U, Agwu U, Njoku C, Umeora O. An Appraisal of Retained Placenta As A Complication of Third Stage of Labour At Alex Ekwueme Federal University Teaching Hospital Abakaliki Over A Four Year Period. Age.;20(6):14-3.
8. John CO, Orazulike NC, Alegbeleye JO. An appraisal of retained placenta at the University of Port Harcourt Teaching Hospital: A five-year review. Niger J Med. 2015;24(2):99-102.
9. Obajimi GO, Roberts AO, Aimakhu CO, Bello FA, Olayemi O. An appraisal of retained placentae in Ibadan: A five-year review. Ann Ib Postgrad Med. 2009;7(1):21-25.
10. Eze JN, Umeora OUJ, Obuna JA, Egwuatu VE. Obstetric complications in unbooked women at a tertiary hospital in Enugu, Nigeria. Niger J Clin Pract. 2010;13(3):336-340.
11. Owolabi AT, Dare FO, Fasubaa OB, Ogunlola IO, Kuti O. Risk factors for retained placenta in Southwest Nigeria. Singapore Med J. 2008;49(7):532-537.
12. Combs CA, Laros RK. Prolonged third stage of labor: Morbidity and risk factors. Obstet Gynecol. 1991;77(6):863-867.
13. Weeks AD. Umbilical vein oxytocin for the treatment of retained placenta (RELEASE study): A double-blind randomised controlled trial. Lancet. 2010;375(9709):141-147.
14. Urner F, Zimmermann R, Krafft A. Manual removal of the placenta after vaginal delivery: An unsolved problem in obstetrics. J Pregnancy. 2014;2014:274651.
15. Tandberg A, Albrechtsen S, Iversen OE. Manual removal of the placenta: Incidence and clinical significance. Acta Obstet Gynecol Scand. 1999;78(1):33-36.
16. Grillo-Ardila CF, Ruiz-Parra AI, Gaitán HG, Rodríguez-Malagón N. Prostaglandins for management of retained placenta. Cochrane Database Syst Rev. 2014;(5):CD010312.