





ORIGINAL ARTICLE

Analysis of the Clinical Profile and Fate of Retained Placenta in Comilla Medical College Hospital, Comilla

Aysha Afroz¹, Akter Jahan², Tahmina Hoque Pinki³, Sultana Farzana Anam⁴, S M Hasinur Rahman⁵, Shahana Begum⁶

Received: 30 Mar 2026

Accepted: 3 Apr 2026

Published Online: 10 Apr 2026

Published by:

Gopalganj Medical College, Gopalganj, Bangladesh

Correspondence to:

Aysha Afroz

DOI: 10.5281/zenodo.19499116

Copyright © 2026 The Insight



This article is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

Background: Retained placenta is a potentially life-threatening condition that significantly contributes to postpartum haemorrhage (PPH) and maternal mortality, especially in women from disadvantaged socioeconomic backgrounds. Identifying predisposing factors and ensuring timely management during antenatal care and the third stage of labour are crucial to reducing morbidity and improving maternal outcomes. **Objective:** The aim of the study was to determine the clinical characteristics and outcomes of patients with retained placenta. **Methods & Materials:** This cross-sectional study at the Department of Obstetrics and Gynaecology, Comilla Medical College & Hospital (Jan–Jun 2013) included 100 vaginal deliveries with retained placenta. Cases ≥ 28 weeks' gestation were included, while caesarean deliveries and < 28 weeks were excluded. After informed consent, clinical, demographic, obstetric, management, and outcome data were collected using a structured form. Ethical approval was obtained, and data were analyzed with SPSS 15 using descriptive statistics. **Results:** Among 3,126 obstetric admissions, 107 (3.42%) had retained placenta. Of 100 patients, most were 21–30 years (62%), primarily educated (39%), housewives (92%), para 2–4 (60%), and 79% unbooked. Deliveries were mostly home (74%) by untrained dais (62%). Common complications were PPH (52%) and genital trauma (30%). Manual removal was needed in 91%, transfusion in 72%. Outcomes: recovery 72%, severe anaemia 16%, infection 6%, renal failure 2%, maternal death 4%. **Conclusion:** Retained placenta remains a serious obstetric complication, with outcomes largely dependent on timely hospital care, skilled delivery management, and appropriate interventions.

Keywords: Retained Placenta, Maternal Outcome, Clinical Profile.

(The Insight 2026; 9(1): 187-193)

1. Medical Officer, Department of Reproductive Endocrinology and Infertility, Dhaka Medical College Hospital, Dhaka, Bangladesh (ORCID: 0009-0002-5982-1586)
2. Assistant Professor, Department of Reproductive Endocrinology and Infertility, Dhaka Medical College Hospital, Dhaka, Bangladesh (ORCID: 0009-0000-1581-8102)
3. Medical Officer, Department of Reproductive Endocrinology and Infertility, Dhaka Medical College Hospital, Dhaka, Bangladesh (ORCID: 0009-0003-9579-0796)
4. Assistant Professor, Department of Obstetrics and Gynaecology, Dhaka Medical College Hospital, Dhaka, Bangladesh (ORCID: 0009-0005-8340-7272)
5. Assistant Professor, Department of Skin & VD, Dhaka Medical College Hospital, Dhaka, Bangladesh (ORCID: 0009-0009-6311-5343)
6. Assistant Professor, Department of Skin & VD, Dhaka Medical College Hospital, Dhaka, Bangladesh (ORCID: 0009-0001-3529-1835)

INTRODUCTION

Retained placenta is a potentially life-threatening condition in which the placenta is retained for more than half an hour after the birth of a child [1]. The placenta is defined as retained when it fails to be expelled within 30 minutes after delivery of the baby, although some authors have recommended a time range of 30–60 minutes for this diagnosis [2]. It contributes significantly to postpartum haemorrhage (PPH), accounting for 5–10% of all cases [3], and remains a leading cause of maternal mortality worldwide [4]. About 15–20% of PPH cases are due to retained placenta, resulting in approximately 150,000 maternal deaths annually in developing countries [5]. In Bangladesh, PPH contributes to 31% of maternal deaths [6] and retained placenta is the second major indication for blood transfusion during the third stage of labour. After uterine atony, retained placenta is recognized as the second leading indication for blood transfusion during the third stage of labor

[7]. Retained placenta increases the risk of PPH threefold compared with normal delivery [8].

The risk of maternal morbidity and mortality is further amplified in women from disadvantaged socioeconomic backgrounds, where preexisting malnutrition, anaemia, and unsupervised home deliveries are common [9–11]. Common causes of retained placenta include uterine inertia, morbid adhesion, constriction ring, and inadequate expulsive efforts, often compounded by mismanagement of the third stage of labour. Delays in the latent or contraction phases of placental separation can also lead to retention [12]. Retained products of conception (RPOC) may result from factors such as first-time pregnancy (primiparity), weakened uterine contractions (uterine atony), placenta accreta spectrum (PAS), a previous history of RPOC, preterm delivery, extended use of oxytocin, prior uterine surgeries, and structural abnormalities of the uterus [13–15]. If not treated properly, RPOC can lead to severe

PPH and endometritis [16,17], and conditions such as placenta previa, often complicated by PAS, may further increase the risk of retained placenta [14].

Several predisposing factors are recognized, including lack of antenatal care, unskilled birth attendants, advanced maternal age, high parity, preterm labour, induction of labour, use of uterotonic drugs such as syntometrine, and history of previous retained placenta or uterine surgery [7,10]. However, the significance and relative contribution of these risk factors vary across studies [18]. Women delivering at home under untrained attendants and those with severe anaemia are particularly vulnerable to poor outcomes. Timely recognition of at-risk women, active resuscitation, and early intervention are crucial to improving maternal outcomes, highlighting the importance of identifying risk factors during antenatal care and ensuring properly conducted labour [19].

Despite its significant burden, few studies have focused on retained placenta in Bangladesh. Evidence from international research suggests that appropriate management can reduce both incidence and mortality. Therefore, the present study aims to evaluate the clinical presentation, predisposing factors, management approaches, and maternal outcomes of retained placenta among patients admitted to or developing retained placenta following vaginal delivery at Comilla Medical College & Hospital. Additionally, the study seeks to assess the relationship between active management of the third stage of labour and the incidence of retained placenta, with the goal of informing improved clinical practice and policy interventions.

OBJECTIVE

To determine the clinical characteristics and outcomes of patients with retained placenta.

METHODS & MATERIALS

This cross-sectional study was conducted at the Department of Obstetrics and Gynaecology, Comilla Medical College & Hospital, from January 2013 to June 2013. A total of 100 patients with retained placenta following vaginal delivery were included using convenient sampling. Participants were selected according to predefined inclusion and exclusion criteria to evaluate the clinical profile, management, and outcomes of retained placenta.

Inclusion Criteria

- Patients who developed retained placenta after normal vaginal delivery
- Patients who developed retained placenta after induction of labour
- Patients admitted with retained placenta

- Pregnancy duration ≥ 28 weeks
- Both singleton and multiple pregnancies

Exclusion Criteria

- Patients who underwent caesarean section
- Pregnancy duration < 28 weeks

Data Collection Procedure

After obtaining informed written consent, a detailed history was taken from each patient or her legal guardian. General and systemic examinations were performed, and relevant investigation findings were recorded. Associated medical conditions and complications were documented from clinical evaluation and hospital records. Patients were re-examined at discharge, and outcomes were recorded. Data were collected using a pretested structured data collection form through interviews, observation, and clinical examination.

Variables Studied

Demographic variables included age, educational status, occupation, and socioeconomic condition. Obstetric variables included parity, antenatal care status, place of delivery, birth attendant, duration of labour, clinical presentation, predisposing factors, complications, management, and outcomes of retained placenta.

Ethical Considerations

The study protocol was approved by the Ethical Review Committee of Comilla Medical College Hospital. The study objectives, procedures, risks, and benefits were explained in the local language, and written informed consent was obtained from each participant. Confidentiality was ensured, and participants were informed of their right to withdraw at any stage.

Statistical Analysis

Data were processed and analyzed using SPSS version 15. Descriptive statistics were applied. Continuous variables were expressed as mean ± standard deviation, while categorical variables were presented as frequencies and percentages.

RESULTS

Table I shows that during the study period at Comilla Medical College Hospital, a total of 3,126 obstetric cases were admitted. Among these, 107 patients were diagnosed with retained placenta, giving an incidence of 3.42%, which is comparable to previous studies reporting rates between 0.5% and 3%.

Table I: Incidence of Retained Placenta Among Obstetric Admissions (n = 3,126)

Total Obstetric Admissions	Frequency of Retained Placenta	Percentage
3126	107	3.42%

Table II presents the demographic characteristics of the study population (n = 100). The majority of patients were aged 21–30 years (62.0%), with a mean age of 26.01 ± 4.64 years. Regarding educational status, 39.0% had primary education, while 28.0% were illiterate, 20.0% had completed SSC, 8.0% HSC, and 5.0% were graduates or above. Most participants

were housewives (92.0%), and 64.0% belonged to the low socio-economic group. Parity distribution showed that 60.0% were para 2–4, 24.0% para 1, and 16.0% para >4. Concerning antenatal care, 79.0% were unbooked and 21.0% were booked for ANC services.

Table II: Demographic Characteristics of the Study Population (n = 100)

Variable	Frequency (n)	Percentage (%)
Age	≤20 years	18
	21–30 years	62
	>30 years	20
	Mean ± SD (years)	26.01 ± 4.64
Education	Illiterate	28
	Primary	39
	SSC	20
	HSC	8
	Graduate & above	5
Occupation	Housewife	92
	Service holder	8
Socio-economic Status	Low	64
	Middle	20
	High	16
Parity	Para 1	24
	Para 2–4	60
	>4	16
ANC Status	Unbooked	79
	Booked	21

Table III shows the delivery-related characteristics of the study participants. The majority of deliveries occurred at home (74.0%), while 8.0% took place at the Upazilla Health Complex, 3.0% at MCH, 2.0% at private clinics, 5.0% at district hospitals, and 8.0% at Comilla Medical College Hospital. Among home deliveries (n = 74), most were conducted by untrained dais (62.2%), followed by midwives (13.5%),

trained dais/skilled birth attendants (10.8%), nurses (8.1%), and physicians (5.4%). Regarding the duration after delivery before admission to hospital, 52.0% were admitted within 9–24 hours, 32.0% within 3–8 hours, 10.0% within 0–2 hours, and 6.0% after more than 24 hours. History of active management of the third stage of labour was reported in 14.0% of cases, absent in 64.0%, and 22.0% were undecided.

Table III: Delivery Characteristics of the Study Population (n = 100)

Variable	Percentage (%)	
Place of Delivery	Home	74.0
	Upazilla Health Complex	8.0
	MCH	3.0
	Private Clinic	2.0
	District Hospital	5.0
	Medical College Hospital	8.0
Birth Attendant (Home Deliveries, n=74)	Untrained Dai	62.2
	Midwife	13.5
	Nurse	8.1
	Physician	5.4
	Trained Dai/SBA	10.8
Duration After Delivery	0–2 hours	10.0
	3–8 hours	32.0
	9–24 hours	52.0
	>24 hours	6.0
Active Management of 3rd Stage	Present	14.0
	Absent	64.0
	Undecided	22.0

Table IV presents the clinical presentation and predisposing factors among the study participants. Regarding clinical presentation, 48.0% of patients presented with anaemia with shock, 44.0% with anaemia without shock, 6.0% with sepsis, and 2.0% with acute renal failure. Analysis of predisposing factors revealed that 42.0% had delivery by unskilled attendants with mismanagement of the third stage of labour,

16.0% were grand multipara, 10.0% had prolonged labour, 8.0% had a history of MR or D&C, 6.0% had injudicious use of oxytocin or ergometrin, 4.0% had preterm labour, 4.0% had previous retained placenta, 2.0% had a history of LUCS or other uterine surgery, and 8.0% had no identifiable predisposing factors.

Table IV: Clinical Presentation and Predisposing Factors of the Study Population (n = 100)

Variable	Percentage (%)	
Clinical Presentation (n=100)	Anaemia without shock	44.0
	Anaemia with shock	48.0
	Sepsis	6.0
	Acute renal failure	2.0
Predisposing Factors (n=100)	Grand multiparity	16.0
	Prolonged labor	10.0

Delivery by unskilled attendant & mismanagement of 3rd stage	42.0
History of MR or D&C	8.0
Previous retained placenta	4.0
History of LUCS/other uterine surgery	2.0
Preterm labor	4.0
Injudicious use of oxytocin/ergometrin	6.0
No predisposing factors	8.0

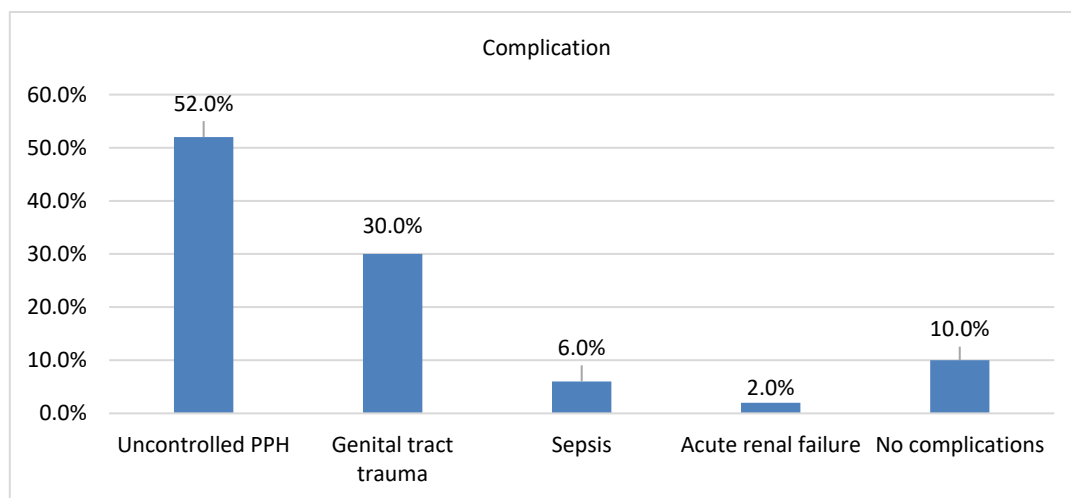


Figure 1: Complications Observed in Patients with Retained Placenta (n = 100)

Figure 1 shows the complications observed among patients with retained placenta. Uncontrolled postpartum hemorrhage (PPH) was the most common complication, occurring in 52.0% of patients, followed by genital tract trauma in 30.0%. Sepsis was seen in 6.0%, acute renal failure in 2.0%, while 10.0% of patients had no complications.

Table V describes the management approaches and blood

transfusion requirements among patients with retained placenta. Out of 100 patients, 47.0% required manual removal under general anaesthesia, 44.0% under deep sedation, 3.0% by the piecemeal method, and 6.0% experienced spontaneous expulsion after oxytocin drip. Regarding blood transfusion, 72.0% of patients required transfusion, while 28.0% did not require it.

Table V: Mode of Management and Blood Transfusion Requirement in Patients with Retained Placenta (n = 100)

Variable	Percentage (%)	
Mode of Management (n=100)	Manual removal under general anaesthesia	47.0
	Manual removal under deep sedation	44.0
	Manual removal by piecemeal method	3.0
	Spontaneous expulsion after oxytocin drip	6.0
Blood Transfusion (n=100)	Not required	28.0
	Required	72.0

Table VI presents the complications that occurred during the management of retained placenta and the measures taken to manage these complications. Among all patients, 15.0% experienced uterine atony, 8.0% had morbidly adherent placenta, 2.0% had uterine inversion, 2.0% experienced

anaesthetic hazards, and 1.0% had uterine perforation, while 72.0% experienced no complications. Of the 28 patients who developed complications, 28.6% were managed with intrauterine ballooning, 14.3% required hysterectomy, and 57.1% received other interventions.

Table VI: Complications During Management and Their Management in Patients with Retained Placenta (n = 100; n = 28 for complications)

Variable	Percentage (%)	
Complications During Management	Uterine atony	15.0
	Morbidly adherent placenta	8.0
	Uterine perforation	1.0
	Uterine inversion	2.0
	Anaesthetic hazard	2.0
	No complication	72.0
Management of Complications (n=28)	Intrauterine ballooning	28.6
	Hysterectomy	14.3
	Others	57.1

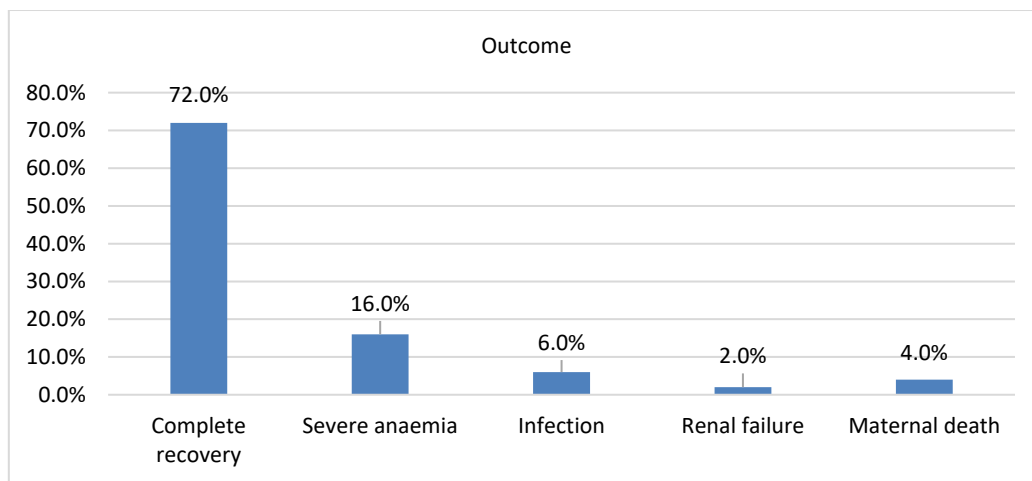


Figure 2: Clinical Outcomes of Patients with Retained Placenta (n = 100)

Figure 2 illustrates the outcomes of patients with retained placenta. Complete recovery was observed in 72.0% of cases, while 16.0% developed severe anaemia, 6.0% experienced infection, 2.0% developed renal failure, and 4.0% of patients resulted in maternal death.

DISCUSSION

PPH is a significant cause of maternal mortality in the developing world, often associated with retained placenta, a common obstetric complication. Its incidence varies globally due to differences in healthcare facilities. Maheswari et al. reported an incidence of retained placenta of 1.8% among deliveries [20], confirming that its occurrence is within a similar range globally. During the study period, 3,126 patients were admitted to Comilla Medical College and Hospital with obstetric problems, among whom 107 (3.42%) had retained placenta. Other studies reported incidences of 4.51% [21], 3.54% [9], and 1.9% [22], while a report from Bangladesh in 2007 noted 3% [23]. European data suggest retained placenta affects 0.5–3% of deliveries [12]. In developing regions, case fatality is high, but access to hospital care and transfusions reduces mortality. In the UK, no deaths occurred among over 2 million deliveries [24]. ACOG reports that retained placenta incidence has increased tenfold over the past 50 years and may occur as frequently as 1 in 2,500 deliveries [25]. Women with two or more caesareans and anterior or central placenta praevia have nearly a 40% risk of placenta accreta.

The age distribution of participants showed 62% were 21–30 years, 18% ≤20 years, and 20% >30 years, consistent with Efiedyi et al. [26], Chhabra et al. [27], Titiz et al. [28], and Ferdousy et al. [29]. Regarding education, 39% had primary education, 28% were illiterate, 20% completed SSC, 8% HSC, and 5% graduation or above. Retained placenta was most frequent among primarily educated patients, as noted in studies by Nila et al. [23] and Ferdousy et al. [29]. Education improves health awareness, decision-making, and recognition of the importance of delivery by trained personnel [23].

Socioeconomic analysis indicated that 64% of patients were from low-income families, 20% middle-income, and 16% high-income; 92% were housewives, 8% service holders. Retained placenta incidence was higher in the lower socioeconomic group, in agreement with Das et al. [19] and Ferdousy et al. [29], likely due to delays in seeking care, malnutrition, anaemia, and unsupervised home deliveries [19]. Regarding place of delivery, 74% occurred at home by untrained dais or family members, 18% in hospitals or clinics outside, and 8% at Comilla Medical College and Hospital,

aligning with Haseen et al. [30], Ferdousy et al. [29], Chhabra et al. [27], and Das et al. [19]. Home deliveries supervised by untrained attendants are associated with poor third-stage labour management, increasing retained placenta risk [22]. Among home deliveries, 62.16% were conducted by untrained dais lacking knowledge of active management, contributing to retention. Prolonged labour was observed in 52% of patients (9–24 hours), 32% (3–8 hours), 10% (0–2 hours), and 6% (>24 hours), consistent with Efiedyi et al. [26].

Parity analysis showed 60% were para 2–4, similar to Das et al. [19] (55.83%), Chhabra et al. [27], and Ferdousy et al. [29]. Repeated pregnancies may reduce uterine contractility, leading to atony and placenta retention [22]. ANC status indicated 79% unbooked and 21% booked with irregular check-ups, echoing findings by Efiedyi et al. [26].

Clinical presentation revealed that 90% had anaemia, with 48% experiencing shock, similar to Das et al. [19] and Ferdousy et al. [29] (49.07%). Parvin et al. reported that retained placenta was strongly associated with mismanagement of the third stage of labour, previous uterine surgery, preterm labour, and grand multiparity, with cases showing high rates of PPH and anaemia with shock [31], consistent with our findings. Similarly, Alam et al. found that most retained placenta cases presented with anaemia and shock, with predisposing factors including grand multiparity, prolonged labour, previous MR/D&C, preterm labour, and history of retained placenta [32]. Sepsis occurred in 6%, and 2% developed acute renal failure. Shock may be present with or without PPH, indicating retained placenta can independently cause haemorrhagic shock.

Predisposing factors included grand multiparity (16%), delivery by unskilled attendants with mismanagement of the third stage (42%), prolonged labour (10%), history of MR/D&C (8%), previous retained placenta (4%), LUCS (2%), preterm labour (4%), and injudicious oxytocin/ergometrin use (6%), with 10% having no identifiable factors. Das et al. [19] reported 37.42% with previous MR/D&C, while over-curettage and infection may predispose to retention [23]. Recurrence was reported at 32% by Van Beekhuizen et al. [33]. Complications associated with retained placenta included uncontrolled PPH (52%), genital tract trauma (30%), sepsis (6%), acute renal failure (2%), and no complications in 10%, consistent with Das et al. [19] and Chhabra et al. [27].

Management involved manual removal in 94% of cases and oxytocin infusion in 6%, similar to Das et al. [19] (96.93%) and consistent with Tandberg et al. [34] and Hyder et al. [35]. Blood

transfusion was required in 72%, correlating with Ferdousy et al. [29] but higher than Tandberg et al. [34] (10%).

Complications during management included uterine atony (15%), morbidly adherent placenta (8%), uterine perforation (1%), uterine inversion (2%), anaesthetic hazards (2%), and no complications in 72%. Among 28 patients with complications, 28.57% underwent intrauterine ballooning, 14.28% hysterectomy, and 57.14% other measures (oxytocin, uterine massage), comparable to Nila et al. [23] and Ferdousy et al. [29].

Regarding outcomes, 72% recovered completely, 16% developed severe anaemia, 6% had infection, 2% renal failure, and 4% died (1 renal failure, 3 irreversible shock), similar to Das et al. [19], Chhabra et al. [27] (5.6%), Makhseed et al. [36] (6.25% in placenta accreta), and Ferdousy et al. [29] (6%). Rizwan et al. reported that anaemia was the most common complication (48.8%), with some women developing acute renal failure (3.3%) and shock, and a few deaths occurring due to severe haemorrhagic shock [37], confirming the severe morbidity and mortality associated with retained placenta. In developed countries, mortality is rare except in placenta inversion, accreta, or treatment complications [26].

Active management of the third stage was absent in 60% of patients, present in 14%, and undecided in 22%, highlighting the need for standardized guidelines for diagnosis and management of retained placenta [38].

LIMITATIONS

This study was hospital-based rather than population-based; therefore, it may not reflect the actual situation in the general population.

The study duration was short (6 months), which may have resulted in a sample size insufficient to fully minimize potential errors.

The limited number of hospital beds, often occupied by emergency patients, led to early discharge of many cases. Additionally, some patients left the hospital against medical advice due to financial constraints, resulting in inadequate postoperative follow-up and somewhat limited outcome assessment.

CONCLUSION

Retained placenta is an important obstetric complication that can lead to significant maternal morbidity and mortality if not managed promptly. In this study at Comilla Medical College Hospital, the majority of affected patients were young, primarily educated, housewives from low socio-economic backgrounds, and largely unbooked for antenatal care. Home deliveries conducted by untrained attendants were common, and delayed admission to the hospital contributed to complications such as postpartum hemorrhage and genital tract trauma. Management primarily involved manual removal of the placenta, often requiring blood transfusion, and some patients experienced additional complications necessitating interventions such as intrauterine ballooning or hysterectomy. Clinical outcomes were generally favorable, but severe anaemia, infection, renal failure, and maternal deaths occurred in a minority of cases, highlighting the importance of skilled delivery care and timely hospital intervention.

ACKNOWLEDGMENT

I would like to express my sincere gratitude for the invaluable support and cooperation provided by the staff, participants and my co-authors/colleagues who contributed to this study.

CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCES

1. No more tears over retained placenta: new vision (Kampala), News. All Africa.com. 2001;36-41.
2. Dutta DC. Kolkata: New Central Book Agency (Pvt) Ltd. In: Textbook of Obstetrics. 2010. p. 411-22.
3. Decherney AH, Md NL. *Premature Maternal Placenta-Fetal Unit, Fetal and Early Neonatal Physiology Current Diagnosis and Treatment Obstetrics and Gynaecology*. McGraw Hill Medical Publishing Division; 2007.
4. World Health Organization. *Guidelines for the management of postpartum haemorrhage and retained placenta*. Geneva: World Health Organization; 2012.
5. Hayman RG, Arulkumaran S, Steer PJ. Uterine compression sutures: surgical management of postpartum hemorrhage. *Obstetrics & Gynecology*. 2002 Mar 1;99(3):502-6.
6. Bangladesh Maternal Mortality and Health Care Survey 2010. In: NIPORT, Mitra and Associates, and ICF International. Dhaka, Bangladesh, and Calverton, Maryland, USA; 2010.
7. Owolabi AT, Dare FO, Fasubaa OB, Ogunlola IO, Kuti O, Bisiriyu LA. Risk factors for retained placenta in southwestern Nigeria. *Singapore medical journal*. 2008 Jul 1;49(7):532.
8. HALL MH, HALLIWELL R, Carr-hill RO. Concomitant and repeated happenings of complications of the third stage of labour. *BJOG: an international journal of obstetrics & gynaecology*. 1985 Jul;92(7):732-8.
9. Arias F, Bhide AG, Damania K, Daftary SN, editors. *Practical Guide to High Risk Pregnancy and Delivery-E-Book: A South Asian Perspective*. Elsevier health sciences; 2008 Jul 15.
10. McCormick ML, Sanghvi HC, Kinzie B, McIntosh N. Preventing postpartum hemorrhage in low-resource settings. *International journal of gynecology & obstetrics*. 2002 Jun 1;77(3):267-75.
11. Tsu VD. Postpartum haemorrhage in Zimbabwe: a risk factor analysis. *BJOG: An International Journal of Obstetrics & Gynaecology*. 1993 Apr;100(4):327-33.
12. Weeks AD. The retained placenta. *African Health Sciences*. 2011;1:36-40.
13. Ganer Herman H, Kogan Z, Tairy D, Ben Zvi M, Kerner R, Ginath S, Bar J, Sagiv R. Pregnancies following hysteroscopic removal of retained products of conception after delivery versus abortion. *Gynecologic and obstetric investigation*. 2018 Jun 26;83(6):586-92.
14. Sellmyer MA, Desser TS, Maturen KE, Jeffrey Jr RB, Kamaya A. Physiologic, histologic, and imaging features of retained products of conception. *Radiographics*. 2013 May;33(3):781-96.
15. Van den Bosch T, Daemen A, Van Schoubroeck D, Pochet N, De Moor B, Timmerman D. Occurrence and outcome of residual trophoblastic tissue: a prospective study. *Journal of Ultrasound in Medicine*. 2008 Mar;27(3):357-61.
16. Iraha Y, Okada M, Toguchi M, Azama K, Mekar K, Kinjo T, Kudaka W, Aoki Y, Aoyama H, Matsuzaki A, Murayama S. Multimodality imaging in secondary postpartum or postabortion hemorrhage: retained products of conception and related conditions. *Japanese journal of radiology*. 2018 Jan;36(1):12-22.
17. Abbasi S, Jamal A, Eslamian L, Marsousi V. Role of clinical and ultrasound findings in the diagnosis of retained products of conception. *Ultrasound in Obstetrics and Gynecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology*. 2008 Oct;32(5):704-7.
18. World Health Organization. *Reproductive Health. Managing complications in pregnancy and childbirth: a guide for midwives and doctors*. World Health Organization; 2003.
19. Das SR, Sultana N, Akhter S, Khan F, Wazed F. Incidence, Causes and Management of Retained Placenta of Admitted Cases in In-Patient Department of Dhaka Medical College Hospital. *Journal of Dhaka Medical College*. 2009;18(1):20-4.
20. Maheswari GS, Shah S, Kumari R, Rachana M. Profile of women with retained placenta at a tertiary care hospital. *MRIMS Journal of Health Sciences*. 2025 Jan 1;13(1):32-4.
21. Etuk SJ, Asuquo EE. Maternal mortality following post-partum haemorrhage in Calabar a 6-year review. *West African Journal of Medicine*. 1997 Jul 1;16(3):165-9.
22. Chamberlain G.V.P. *Hydatidiform mole, choriocarcinoma and other abnormalities of the Placenta and Cord*. Ten Teachers, 15th Edition; British Library Cataloguing Publication Data, 1993; 71-73.

23. Nila TA. A Study of 100 cases of Retained Placenta in Mymensing Medical College Hospital. Dissertation). BCPS; 2007.
24. H. SOLTAN and T. KHASHOGGI M. Retained placenta and associated risk factors. *Journal of obstetrics and gynaecology*. 1997 Jan 1;17(3):245-7.
25. Committee on Obstetric Practice. ACOG committee opinion. Placenta accreta. Number 266, January 2002. *American college of obstetricians and gynecologists. International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics*. 2002 Apr;77(1):77-8.
26. Efiedyi RA, Ejgebofh JO, Isabu PA, Omorogbe FI, Ukponmwan OG, Momoh M. Retained Placenta: Still a cause of maternal morbidity and mortality in a Nigerian semi-urban population. *Sudan Journal of Medical Sciences*. 2011;6(1):33-8.
27. Chhabra S, Dhorey M. Retained placenta continues to be fatal but frequency can be reduced. *Journal of Obstetrics and Gynaecology*. 2002 Jan 1;22(6):630-3.
28. Titiz H, Wallace A, Voaklander DC. Manual removal of the placenta-a case control study. *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2001 Feb;41(1):41-4.
29. Ferdousy H. A study on risk factors and maternal outcome of retained placenta in Rangpur Medical College and Hospital, Rangpur. [dissertation]. Dhaka (Bangladesh): Bangladesh College of Physicians and Surgeons (BCPS); 2011.
30. Haseen FD. Clinical study on retained placenta (predisposing factors, clinical presentation and outcome) in Chittagong Medical College Hospital. [dissertation]. Dhaka (Bangladesh): Bangladesh College of Physicians and Surgeons (BCPS); 2008 Dec.
31. Parvin S, Shaheen M, Begum RA, Podder S. A Study on Clinical Presentation, Predisposing Factors and Outcome of Retained Placenta. *The Insight*. 2025 Dec 12;8(03):496-500.
32. Alam S, Chowdhury AH, Khan SA, Saha S. Evaluation of retained placenta: a study in a district hospital. *Sch Int J Obstet Gynecol*. 2022;5(10):455-61.
33. Van Beekhuizen H.J., Vierhout M.E., Afd. Verloskunde en Gynaecologie, Ikazia Ziekenhuis, Rotterdam. Risk of recurrence of retained placenta. Article in Dutch. PMID: 7589748 (PubMed—Indexed for MEDLINE). *Tijdschr S Geneesk* 1994 Oct 22; 138(43):2149-52.
34. Tandberg A, Albrechtsen S, Iversen O. Manual removal of the placenta, Incidence and clinical significance. *Acta obstetrica et gynecologica Scandinavica*. 1999 Jan 1;78(1):33-6.
35. Hyder Z. Retained placenta. *Medical Journal* 1995; 2(1):18-21.
36. Makhseed M., Moussa M.A. The outcome of placenta accreta in Kuwait (1981-1993). *Int J Obstet Gynaecol* 1995; 50(2):139-44.
37. Rizwan N, Abbasi RM, Jatoi N. Retained placenta still a continuing cause of maternal morbidity and mortality. *J Pak Med Assoc*. 2009 Dec;59(12):812-4.
38. Akinola OI, Fabamwo AO, Tayo AO, Bande A, Rabiou KA, Oshodi AY. Manual removal of the placenta: Evaluation of some risk factors and management outcome in a tertiary maternity unit. A case controlled study. *Open Journal of Obstetrics and Gynecology*. 2013;3:279-84.