

Midwifery Management of Postpartum Hemorrhage Due to Uterine Atony Using Helen Varney's Framework: A Case Report

Saskia Anandita¹, Asnita Sinaga², Siti Fadillah³, Fitri Arrahmi⁴, Dewi Fatimatuazzahro⁵, Ronilda⁶
Program Studi Kebidanan Program Sarjana, STIKes Mitra Husada Medan, Indonesia

Article History

Received : June 30, 2026
Revised : July 14, 2026
Accepted : September 15, 2026
Published : September 16, 2026

Corresponding author*:

2419201060@mitrahusada.ac.id

Cite This Article [APA Style]

Anandita, S., Sinaga, A., Fadillah, S., Arrahmi, F., Fatimatuazzahro, D., & Ronilda, R. (2026). Midwifery Management of Postpartum Hemorrhage Due to Uterine Atony Using Helen Varney's Framework: A Case Report. *Jurnal Kesehatan Dan Kedokteran*, 5(3), 876–889.

DOI:

<https://doi.org/10.56127/jukeke.v5i3.2890>

Abstract: Uterine atony is the leading cause of postpartum hemorrhage and remains a major contributor to maternal morbidity and mortality worldwide. Although evidence-based guidelines for postpartum hemorrhage management are well established, reports describing the systematic implementation of comprehensive midwifery care in primary maternity settings remain limited.

Objective: This study aimed to describe the implementation of Helen Varney's seven-step midwifery management framework in managing postpartum hemorrhage caused by uterine atony in a primary maternity clinic and to demonstrate its role in supporting timely clinical decision-making and maternal stabilization. **Methods:** This study employed a qualitative descriptive case report design involving a 35-year-old woman (G3P1A1) at 39 weeks of gestation who developed uterine atony during the fourth stage of labor at Pratama Kasih Bunda Clinic, Deli Serdang Regency, Indonesia. Data were collected through anamnesis, physical and obstetric examinations, direct clinical observation, labor monitoring, and documentation review. Data were analyzed narratively using Helen Varney's seven-step midwifery management framework. **Findings:** The patient developed postpartum hemorrhage characterized by continuous vaginal bleeding, a soft uterus, fundal height at the level of the umbilicus, decreased blood pressure, and increased pulse rate shortly after placental delivery. Immediate interventions, including uterine fundal massage, uterotonic administration, bladder emptying, external uterine compression, and continuous monitoring, successfully restored uterine contraction, controlled bleeding, stabilized maternal vital signs, and prevented hypovolemic shock. **Implications:** The findings reinforce the importance of structured postpartum monitoring and rapid evidence-based midwifery interventions in improving maternal outcomes at primary healthcare facilities. **Originality/Value:** Unlike previous studies that primarily focus on risk factors or treatment recommendations, this case report integrates clinical assessment, diagnostic reasoning, emergency management, and evaluation within Helen Varney's seven-step framework, providing a practical model for evidence-based midwifery management of uterine atony in primary maternity care.

Keywords: uterine atony; postpartum hemorrhage; midwifery management; Helen Varney; case report.

INTRODUCTION

Postpartum hemorrhage remains a major maternal health problem because it can occur suddenly after childbirth and rapidly progress into a life-threatening condition. Globally, hemorrhage is still recognized as one of the leading direct causes of maternal death,

particularly in settings where early recognition and emergency obstetric response are limited ([Say et al., 2014](#)). Uterine atony is the most frequent cause of primary postpartum hemorrhage and occurs when the uterus fails to contract adequately after delivery of the fetus and placenta ([Escobar et al., 2022](#)). When uterine contraction is inadequate, the uterine muscle cannot compress the blood vessels at the placental implantation site, resulting in continuous bleeding and increasing the risk of hypovolemic shock, severe anemia, organ dysfunction, and maternal death ([Sentilhes et al., 2016](#)).

In primary maternity care settings, uterine atony is particularly important because it may occur even when labor appears to progress physiologically. The case of Mrs. L at Pratama Kasih Bunda Clinic, Deli Serdang Regency, illustrates that spontaneous delivery and complete placental expulsion do not eliminate the risk of postpartum hemorrhage. During the fourth stage of labor, Mrs. L experienced continuous vaginal bleeding, a soft uterus, inadequate uterine contraction, decreased blood pressure, and increased pulse rate, which are consistent with the clinical features of uterine atony. This condition demonstrates the importance of strict monitoring during the early postpartum period, including assessment of uterine tone, fundal height, amount of bleeding, blood pressure, pulse rate, and maternal general condition. Early recognition and immediate intervention by midwives are essential to prevent maternal deterioration and reduce the risk of delayed referral in obstetric emergencies ([Mavrides et al., 2017](#)).

Previous studies on uterine atony and postpartum hemorrhage can be grouped into several categories. The first category focuses on maternal and obstetric risk factors. A systematic review found that previous postpartum hemorrhage, multiple pregnancy, placenta previa, placental abruption, prolonged labor, chorioamnionitis, induction of labor, and hypertensive disorders are associated with an increased risk of atonic postpartum hemorrhage ([Ende et al., 2021](#)). Other clinical studies also report that uterine atony may be related to prolonged labor, macrosomia, induction or augmentation of labor, and maternal anemia, which can reduce the ability of the uterus to contract effectively after childbirth ([Wetta et al., 2013](#)). However, postpartum hemorrhage may still occur in women without obvious major risk factors, indicating that risk assessment alone is insufficient and should be combined with continuous intrapartum and postpartum monitoring ([Liu et al., 2021](#)).

The second category of literature discusses prevention of postpartum hemorrhage, particularly through active management of the third stage of labor and prophylactic uterotonic administration. Active management of the third stage of labor has been shown

to reduce the risk of severe maternal bleeding compared with expectant management (Begley et al., 2019). Oxytocin remains widely recommended as the first-line uterotonic agent for postpartum hemorrhage prevention because of its effectiveness in stimulating uterine contraction (Tuncalp et al., 2013). A network meta-analysis also showed that several uterotonic agents, including oxytocin, carbetocin, and misoprostol combinations, can reduce the risk of postpartum hemorrhage, although selection should consider clinical context, safety, and availability (Gallos et al., 2018). In settings where cold-chain storage is a challenge, heat-stable carbetocin has been studied as an alternative for preventing postpartum hemorrhage after vaginal birth (Widmer et al., 2018).

The third category of literature emphasizes emergency management when postpartum hemorrhage due to uterine atony has occurred. Recommended initial management includes uterine massage, uterotonic administration, bladder emptying, fluid resuscitation, and close hemodynamic monitoring (Escobar et al., 2022). Tranexamic acid is also recommended as an adjunct treatment for postpartum hemorrhage when administered early after bleeding onset (Shakur et al., 2017). If bleeding continues despite initial management, conservative mechanical measures such as bimanual uterine compression and balloon tamponade may be used before surgical intervention is considered (Sentilhes et al., 2016). Recent evidence also supports uterine compression techniques as rapid conservative measures to reduce bleeding and maintain maternal stability while further management is prepared (Ali et al., 2024). However, many previous studies focus mainly on general guidelines, pharmacological treatment, or risk-factor analysis, while case-based descriptions of structured midwifery decision-making in primary clinic settings remain limited.

This study aims to describe the management of midwifery care during labor in Mrs. L with uterine atony at Pratama Kasih Bunda Clinic, Deli Serdang Regency, in 2026. Specifically, this case report explains the process of data assessment, diagnosis formulation, identification of potential complications, immediate actions, care planning, implementation, and evaluation using Helen Varney's seven-step midwifery management approach. By presenting a real clinical case, this study is expected to provide practical insight into how midwives identify and manage postpartum hemorrhage caused by uterine atony in a primary maternity care setting.

This study argues that structured and rapid midwifery management can help prevent severe complications in postpartum hemorrhage caused by uterine atony. Early identification of abnormal bleeding, assessment of uterine tone, close monitoring of vital

signs, uterine massage, uterotonic administration, bladder emptying, and external bimanual compression are expected to improve uterine contraction and stabilize the mother's condition. Therefore, the application of Helen Varney's seven-step midwifery management approach is assumed to support effective clinical decision-making and reduce the risk of hypovolemic shock in cases of uterine atony.

RESEARCH METHOD

The unit of analysis in this study was a single clinical case of maternal care during labor involving Mrs. L, a 35-year-old woman with G3P1A1 obstetric status and 39 weeks of gestation who experienced uterine atony during the fourth stage of labor at Pratama Kasih Bunda Clinic, Deli Serdang Regency, in 2026. The focus of this study was the process of midwifery care management provided to the patient, including assessment, diagnosis, identification of potential complications, immediate intervention, care planning, implementation, and evaluation. The main clinical event analyzed was postpartum hemorrhage caused by inadequate uterine contraction after spontaneous delivery and complete placental expulsion.

This study used a qualitative descriptive design with a case report approach. This design was selected because the study aimed to describe a real clinical event in detail rather than to test statistical relationships between variables. A case report approach is appropriate for documenting clinical findings, management decisions, and patient responses in a specific obstetric emergency. Through this approach, the study provides a structured explanation of how uterine atony was identified and managed by midwives in a primary maternity care setting. The qualitative descriptive design also allows the clinical process to be presented chronologically and contextually based on the actual care provided. The flow of the research process is presented in Figure 1.

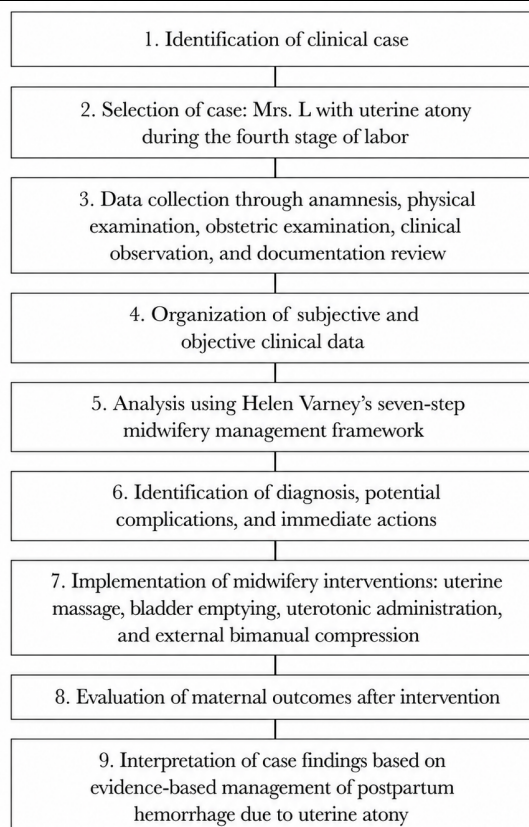


Figure 1. Research Flow of the Case Report

The data sources in this study consisted of primary and secondary clinical information. Primary data were obtained from the patient's subjective complaints, obstetric history, physical condition, and clinical responses during the labor and postpartum period. Secondary data were obtained from midwifery documentation, observation records, vital sign monitoring, labor progress notes, and records of actions performed during the management of postpartum hemorrhage. The case documentation included maternal identity, obstetric history, labor progress, fetal heart rate, uterine contractions, cervical dilation, fetal head descent, placental delivery, signs of uterine atony, interventions, and evaluation of maternal outcomes. During labor monitoring, fetal heart rate, uterine contractions, and maternal pulse were recorded periodically as shown in Table 1.

Table 1. Monitoring of fetal heart rate, uterine contractions, and maternal pulse during labor

Time	Fetal Heart Rate	Uterine Contractions	Maternal Pulse
01.00 WIB	144 beats/minute	3 times in 10 minutes, duration 20 seconds	88 beats/minute
01.30 WIB	144 beats/minute	3 times in 10 minutes, duration 30 seconds	84 beats/minute

Time	Fetal Heart Rate	Uterine Contractions	Maternal Pulse
02.00 WIB	140 beats/minute	4 times in 10 minutes, duration 30 seconds	88 beats/minute
02.30 WIB	140 beats/minute	5 times in 10 minutes, duration 40 seconds	84 beats/minute
03.00 WIB	136 beats/minute	5 times in 10 minutes, duration 45 seconds	88 beats/minute

Data were collected through anamnesis, physical examination, obstetric examination, direct clinical observation, and documentation review. Anamnesis was used to obtain information about the patient's complaints, obstetric history, nutritional intake, previous pregnancy history, and psychosocial condition. Physical and obstetric examinations were conducted to assess vital signs, fetal heart rate, uterine contractions, cervical dilation, fetal head descent, uterine tone, fundal height, and vaginal bleeding. Direct observation was carried out during labor and the fourth stage of labor to monitor maternal and fetal conditions. Documentation review was used to confirm the sequence of care, including uterine massage, bladder emptying, uterotonic administration, external bimanual compression, and maternal condition after intervention.

Data analysis was conducted using narrative clinical analysis based on Helen Varney's seven-step midwifery management framework. The analysis began by organizing subjective and objective data, followed by identifying the midwifery diagnosis and the main clinical problem. The next stage involved identifying potential complications, determining immediate actions, developing a care plan, describing the implementation of interventions, and evaluating maternal outcomes after treatment. The analysis emphasized the relationship between clinical findings, midwifery decisions, and patient responses. The final interpretation was made by comparing the care provided with the principles of evidence-based management for postpartum hemorrhage due to uterine atony.

RESULT

The results of this case report describe the implementation of midwifery care management using Helen Varney's seven-step framework in a patient with postpartum hemorrhage due to uterine atony. The patient was Mrs. L, 35 years old, G3P1A1, at 39 weeks of gestation, who was admitted to Pratama Kasih Bunda Clinic, Deli Serdang Regency, with regular uterine contractions that had started at 22:00 WIB. The contractions became stronger and were accompanied by lower back pain radiating to the lower abdomen. On admission, the patient was conscious, cooperative, and in good general

condition. Initial vital signs showed blood pressure of 117/80 mmHg, pulse rate of 88 beats/minute, respiratory rate of 20 breaths/minute, and body temperature of 37°C. Obstetric examination showed fetal heart rate of 144 beats/minute, uterine contractions three times in 10 minutes with a duration of 20 seconds, cervical dilatation of 6 cm, intact membranes, and fetal head descent of 3/5.

The basic data identification showed that the patient had no history of hypertension, diabetes mellitus, heart disease, or previous cesarean section. Family history did not indicate hereditary or infectious diseases. The patient had a reproductive history of menarche at 13 years old, regular menstrual cycles, and previous use of three-month injectable contraception. Her obstetric history was G3P1A1, with one previous normal delivery, one abortion, and the current pregnancy. The patient's nutritional intake before admission included the last meal at 20:00 WIB and fluid intake at 20:15 WIB. Psychologically, the patient felt anxious about labor but remained cooperative. Socially, the husband accompanied the patient and supported all care procedures.

The second step of Varney's framework identified the midwifery diagnosis, main problem, and patient needs. The diagnosis was Mrs. L, P2A1, spontaneous postpartum fourth stage with uterine atony. The main problem was postpartum hemorrhage due to inadequate uterine contraction. Subjective data showed that the patient reported continuous vaginal bleeding and weakness. Objective data demonstrated continuous vaginal bleeding, soft uterine contraction, fundal height at the level of the umbilicus, blood pressure of 100/70 mmHg, pulse rate of 96 beats/minute, and complete placental delivery. Based on these findings, the patient required immediate management to stop postpartum bleeding, restore uterine tone, prevent hypovolemic shock, and maintain close monitoring of vital signs.

The third step identified potential complications that could occur if the condition was not managed promptly. The potential problems included hypovolemic shock, severe anemia, worsening hemodynamic instability, and maternal death. Therefore, immediate action and collaboration were required. The fourth step included rapid assessment of the cause of postpartum hemorrhage, fundal uterine massage, administration of uterotonic agents according to protocol, confirmation that the bladder was empty, external bimanual compression, collaboration with a physician if bleeding was not controlled, and preparation for referral if the maternal condition worsened.

The fifth step involved care planning based on the patient's clinical condition. The planned interventions included explaining the condition to the patient and family, observing vital signs, uterine contractions, fundal height, and amount of bleeding, performing uterine fundal massage, administering uterotonic medication according to procedure, ensuring an empty bladder, performing external bimanual compression, and collaborating with a physician if bleeding persisted. Each intervention was directed toward improving uterine contraction, reducing bleeding, preventing complications, and maintaining maternal hemodynamic stability.

The sixth step was implementation of the planned midwifery interventions. The midwife informed the patient and family that the patient was experiencing postpartum hemorrhage due to uterine atony. Vital signs, uterine contraction, fundal height, and vaginal bleeding were observed continuously. Uterine fundal massage was performed to stimulate contraction, uterotonic medication was administered according to protocol, the bladder was confirmed to be empty, and external bimanual compression was performed. The patient's response was monitored closely after each intervention.

The seventh step was evaluation. After the interventions were provided, the patient and family understood the maternal condition. The patient's vital signs returned to normal limits, uterine contraction became firm, postpartum bleeding was controlled, and fundal height decreased to two fingerbreadths below the umbilicus. No signs of hypovolemic shock were found. The patient's general condition was stable, and she remained under continued postpartum observation.

Table 2. Summary of midwifery care management based on Helen Varney's seven-step framework

Varney's Step	Main Findings and Actions
Step I: Basic data identification	Mrs. L, 35 years old, G3P1A1, 39 weeks of gestation, presented with regular contractions, lower back pain, stable initial vital signs, fetal heart rate 144 beats/minute, cervical dilatation 6 cm, intact membranes, and fetal head descent 3/5.
Step II: Diagnosis, problem, and needs identification	Diagnosis: spontaneous postpartum fourth stage with uterine atony. Problem: postpartum hemorrhage due to inadequate uterine contraction. Needs: bleeding control, restoration of uterine tone, prevention of shock, and close vital sign monitoring.
Step III: Potential problem identification	Potential complications included hypovolemic shock, severe anemia, hemodynamic instability, and maternal death if bleeding was not managed immediately.
Step IV: Immediate action/collaboration	Rapid assessment, uterine fundal massage, uterotonic administration, bladder emptying, external bimanual compression, physician collaboration if needed, and referral preparation.

Varney's Step	Main Findings and Actions
Step V: Care planning	Education for patient and family, monitoring of vital signs, uterine contraction, fundal height, bleeding amount, uterine massage, uterotonic administration, bladder emptying, external bimanual compression, and collaboration if bleeding persisted.
Step VI: Implementation	The planned interventions were implemented, including explanation of the condition, observation, uterine massage, uterotonic administration, bladder assessment, external bimanual compression, and monitoring of maternal response.
Step VII: Evaluation	Uterus became firm, bleeding was controlled, fundal height decreased to two fingerbreadths below the umbilicus, vital signs stabilized, no signs of shock were found, and the mother remained under postpartum observation.

Table 2 shows that Helen Varney's seven-step framework was applied systematically in managing postpartum hemorrhage caused by uterine atony. The care process began with comprehensive data identification and continued with diagnosis formulation, recognition of potential complications, immediate emergency actions, care planning, implementation, and evaluation. This structured approach helped the midwife determine clinical priorities, especially in controlling bleeding, restoring uterine contraction, and preventing hypovolemic shock. The evaluation stage showed that the interventions were effective because the uterus became firm, bleeding was controlled, and the patient remained clinically stable.

Table 3. Maternal clinical condition before and after intervention

Clinical Variable	Before Intervention	After Intervention
Blood pressure	100/70 mmHg	Within normal limits; stabilized at 110/80 mmHg
Pulse	96 beats/minute	88 beats/minute
Uterine contraction	Soft/inadequate	Firm/good contraction
Fundal height	At the level of the umbilicus	Two fingerbreadths below the umbilicus
Vaginal bleeding	Continuous	Controlled/stopped
General condition	Weak and at risk of deterioration	Stable
Signs of shock	At risk, not yet established	No signs of shock
Postpartum monitoring	Required close observation	Continued postpartum observation

Table 3 demonstrates the clinical improvement of the mother after midwifery interventions were provided. Before intervention, the patient showed signs of postpartum hemorrhage due to uterine atony, including continuous vaginal bleeding, soft uterine contraction, fundal height at the level of the umbilicus, decreased blood pressure, and increased pulse rate. After uterine massage, uterotonic administration, bladder emptying,

and external bimanual compression, the maternal condition improved. The uterus became firm, bleeding stopped, fundal height decreased, blood pressure stabilized, and no signs of shock were observed. These findings indicate that early and appropriate intervention was effective in stabilizing the mother's condition during the fourth stage of labor.

DISCUSSION

This case report demonstrates that the labor process progressed physiologically until the fourth stage of labor, when postpartum hemorrhage secondary to uterine atony occurred. The patient entered the active phase of the first stage of labor with cervical dilatation of 6 cm, accompanied by regular uterine contractions and normal fetal heart rate. Continuous monitoring showed progressive labor without signs of maternal or fetal distress. According to the World Health Organization and international obstetric guidelines, normal labor is characterized by progressive cervical dilatation, reassuring fetal heart rate, and stable maternal condition throughout labor ([Hersh et al., 2024](#); [Tuncalp et al., 2013](#)). These characteristics were observed in the present case, indicating that the patient initially experienced a normal physiological labor before developing postpartum complications.

Continuous monitoring during labor played an important role in identifying maternal and fetal well-being before the onset of postpartum hemorrhage. In this case, fetal heart rate remained within the normal range (136–144 beats/minute), while uterine contractions gradually increased in both frequency and duration as labor progressed. These findings indicate appropriate labor progression and support the recommendation that maternal pulse, blood pressure, uterine contractions, cervical dilatation, and fetal heart rate should be monitored regularly using a partograph or equivalent labor monitoring tools ([Hersh et al., 2024](#); [World Health, 2018, 2020](#)). Early recognition of any deviation from normal labor progression is essential because postpartum hemorrhage may develop even after an uncomplicated delivery.

The second stage of labor was completed successfully, resulting in spontaneous vaginal delivery of a healthy female infant weighing 3,400 g. Furthermore, active management of the third stage of labor was performed, and the placenta was delivered completely within six minutes after birth. According to international guidelines, placental delivery within 30 minutes accompanied by active management of the third stage of labor is considered normal and is associated with a reduced risk of postpartum hemorrhage

([Begley et al., 2019](#); [Escobar et al., 2022](#)). Nevertheless, despite appropriate management during the third stage, the patient subsequently developed uterine atony during the fourth stage of labor. This finding supports previous evidence that postpartum hemorrhage may still occur despite adherence to recommended preventive measures because uterine atony cannot always be predicted solely from intrapartum findings ([Ende et al., 2021](#)).

The most important clinical finding in this case was the occurrence of uterine atony approximately 15 minutes after placental delivery. The patient presented with continuous vaginal bleeding, a soft uterus, fundal height at the level of the umbilicus, decreased blood pressure, and increased pulse rate, indicating the early stage of postpartum hemorrhage. These findings are consistent with previous studies describing uterine atony as the most common cause of primary postpartum hemorrhage, characterized by failure of adequate uterine contraction after placental separation ([Escobar et al., 2022](#); [Sentilhes et al., 2016](#)). Prompt identification of these clinical signs enabled immediate intervention before the patient developed hypovolemic shock or severe hemodynamic instability.

Management of uterine atony in this case was generally consistent with current evidence-based recommendations. Initial treatment included uterine fundal massage, administration of uterotonic agents, bladder emptying, and continuous monitoring of maternal vital signs. These interventions successfully restored uterine contraction, reduced vaginal bleeding, stabilized maternal blood pressure and pulse, and prevented further deterioration. Current international guidelines recommend uterine massage and uterotonic administration as first-line management for postpartum hemorrhage caused by uterine atony ([Escobar et al., 2022](#); [Mavrides et al., 2017](#)). Therefore, the favorable clinical outcome observed in this case reflects the effectiveness of timely and systematic midwifery interventions in preventing severe maternal complications.

A difference was identified between the management described in the literature and the clinical practice implemented at Pratama Kasih Bunda Clinic. Previous literature describes bimanual uterine compression as an important conservative intervention for controlling postpartum hemorrhage due to uterine atony ([Fatwaddin et al., 2022](#)). In contrast, the patient in this case was managed using uterine massage combined with external compression and the application of an ice compress over the uterine fundus to stimulate uterine contraction. Although the techniques differed, both approaches shared the same clinical objective, namely increasing uterine tone and reducing postpartum bleeding. The patient's favorable response, demonstrated by a firm uterus, cessation of bleeding,

stabilization of vital signs, and absence of shock, suggests that the selected management was clinically effective in this setting. However, because evidence supporting cold compress application remains limited compared with established international recommendations, further clinical studies are needed to evaluate its effectiveness and safety in postpartum hemorrhage management.

Overall, this case demonstrates that Helen Varney's seven-step midwifery management framework provides a systematic approach for managing obstetric emergencies. The structured process of assessment, diagnosis, identification of potential complications, immediate intervention, implementation, and evaluation facilitated timely clinical decision-making and appropriate prioritization of emergency care. The successful maternal outcome in this case indicates that comprehensive postpartum monitoring combined with evidence-based midwifery management can effectively prevent progression to severe postpartum hemorrhage and hypovolemic shock. This finding reinforces the importance of maintaining high-quality postpartum surveillance and emergency preparedness in primary maternity care facilities.

CONCLUSION

This case report demonstrates that postpartum hemorrhage due to uterine atony may develop unexpectedly, even after an uncomplicated spontaneous vaginal delivery with complete placental expulsion. Early recognition of clinical signs, including continuous vaginal bleeding, inadequate uterine contraction, decreased blood pressure, and increased pulse rate, enabled immediate intervention before the development of hypovolemic shock. The implementation of Helen Varney's seven-step midwifery management framework facilitated systematic clinical assessment, prompt decision-making, and appropriate emergency interventions. The combination of uterine fundal massage, uterotonic administration, bladder emptying, continuous maternal monitoring, and external uterine compression successfully restored uterine contraction, controlled postpartum bleeding, and stabilized the maternal condition.

This study contributes to the field of midwifery by providing a comprehensive description of the practical application of Helen Varney's seven-step midwifery management framework in managing postpartum hemorrhage due to uterine atony at a primary maternity care facility. Unlike studies that primarily discuss risk factors or treatment recommendations, this case report integrates clinical assessment, diagnostic

reasoning, emergency management, and evaluation within a structured evidence-based midwifery care model. The findings also emphasize the importance of continuous monitoring during the fourth stage of labor and demonstrate that timely interventions performed by trained midwives can prevent severe maternal complications in primary healthcare settings.

This study has several limitations. As a single-case report, the findings cannot be generalized to all women experiencing postpartum hemorrhage due to uterine atony. In addition, the absence of comparative cases and long-term postpartum follow-up limits the evaluation of intervention effectiveness beyond the immediate clinical outcome. Future studies should include larger case series or multicenter observational studies to compare different management strategies for uterine atony, evaluate long-term maternal outcomes, and strengthen the evidence supporting midwifery interventions in the prevention and management of postpartum hemorrhage.

REFERENCES

- Ali, M. M., Maged, A. M., & El-Sayed, M. A. (2024). Mostafa Maged maneuver compared with bimanual uterine compression for management of postpartum hemorrhage. *Medicine*, 103. <https://doi.org/10.1002/med4.61>
- Begley, C. M., Gyte, G. M. L., Devane, D., McGuire, W., Weeks, A., & Biesty, L. M. (2019). Active versus expectant management for women in the third stage of labour. *Cochrane Database of Systematic Reviews*(2), CD007412. <https://doi.org/10.1002/14651858.CD007412.pub5>
- Ende, H. B., Lozada, M. J., Chestnut, D. H., Osmundson, S. S., Walden, R. L., Shotwell, M. S., & Bauchat, J. R. (2021). Risk factors for atonic postpartum hemorrhage: A systematic review and meta-analysis. *Obstetrics & Gynecology*, 137(2), 305-323. <https://doi.org/10.1097/AOG.0000000000004228>
- Escobar, M. F., Nassar, A. H., & Theron, G. (2022). FIGO recommendations on the management of postpartum hemorrhage 2022. *International Journal of Gynecology & Obstetrics*, 157(S1), 3-50. <https://doi.org/10.1002/ijgo.14116>
- Fatwaddin, M. R., Assauri, S., & Milenia, U. N. (2022). Manajemen Atonia Uteri. *KESANS: International Journal of Health and Science*, 1(5), 530-537. <https://doi.org/10.54543/kesans.v1i5.54>
- Gallos, I. D., Williams, H. M., & Price, M. J. (2018). Uterotonic agents for preventing postpartum haemorrhage: A network meta-analysis. *Cochrane Database of Systematic Reviews*(4), CD011689. <https://doi.org/10.1002/14651858.CD011689.pub2>
- Hersh, A. R., Carroli, G., & Hofmeyr, G. J. (2024). Third stage of labor: Evidence-based practice for prevention of adverse maternal and neonatal outcomes. *American*

- Journal of Obstetrics and Gynecology*, 230(3), S1046-S1060.e1041. <https://doi.org/10.1016/j.ajog.2022.11.1298>
- Liu, C.-N., Yu, F.-B., Xu, Y.-Z., Li, J.-S., Guan, Z.-H., Sun, M.-N., Liu, C.-A., He, F., & Chen, D.-J. (2021). Prevalence and risk factors of severe postpartum hemorrhage: A retrospective cohort study. *BMC Pregnancy and Childbirth*, 21, 332. <https://doi.org/10.1186/s12884-021-03818-1>
- Mavrides, E., Allard, S., Chandrachan, E., Collins, P., Green, L., Hunt, B. J., Riris, S., & Thomson, A. J. (2017). Prevention and management of postpartum haemorrhage. *BJOG: An International Journal of Obstetrics & Gynaecology*, 124(5), e106-e149. <https://doi.org/10.1111/1471-0528.14178>
- Say, L., Chou, D., Gemmill, A., Tuncalp, O., Moller, A.-B., Daniels, J., Gulmezoglu, A. M., Temmerman, M., & Alkema, L. (2014). Global causes of maternal death: A WHO systematic analysis. *The Lancet Global Health*, 2(6), e323-e333. [https://doi.org/10.1016/S2214-109X\(14\)70227-X](https://doi.org/10.1016/S2214-109X(14)70227-X)
- Sentilhes, L., Vayssiere, C., & Deneux-Tharaux, C. (2016). Postpartum haemorrhage: Prevention and treatment. *Expert Review of Hematology*, 9(11), 1043-1061. <https://doi.org/10.1080/17474086.2016.1245135>
- Shakur, H., Roberts, I., & Fawole, B. (2017). Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with postpartum haemorrhage. *The Lancet*, 389(10084), 2105-2116. [https://doi.org/10.1016/S0140-6736\(17\)30638-4](https://doi.org/10.1016/S0140-6736(17)30638-4)
- Tuncalp, O., Souza, J. P., & Gulmezoglu, A. M. (2013). New WHO recommendations on prevention and treatment of postpartum hemorrhage. *International Journal of Gynecology & Obstetrics*, 123(3), 254-256. <https://doi.org/10.1016/j.ijgo.2013.06.024>
- Wetta, L. A., Szychowski, J. M., Seals, S., Mancuso, M. S., Biggio, J. R., & Tita, A. T. N. (2013). Risk factors for uterine atony/postpartum hemorrhage requiring treatment after vaginal delivery. *American Journal of Obstetrics and Gynecology*, 209(1), 51.e51-51.e56. <https://doi.org/10.1016/j.ajog.2013.03.011>
- Widmer, M., Piaggio, G., & Nguyen, T. M. H. (2018). Heat-stable carbetocin versus oxytocin to prevent hemorrhage after vaginal birth. *The New England Journal of Medicine*, 379(8), 743-752. <https://doi.org/10.1056/NEJMoa1805489>
- World Health, O. (2018). *WHO Recommendations: Intrapartum Care for a Positive Childbirth Experience*. World Health Organization. <https://apps.who.int/iris/handle/10665/260178>
- World Health, O. (2020). *WHO Labour Care Guide: User's Manual*. World Health Organization. <https://www.who.int/publications/i/item/9789240017566>