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EFFECTIVENESS OF UTEROVAGINAL PACKING IN CONTROL OF PRIMARY POSTPARTUM HEMORRHAGE

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ABSTRACT

Objective: To determine effectiveness of uterovaginal packing in control of primary postpartum hemorrhage.

Methodology: It was a prospective interventional study conducted at department of Obstetrics and Gynecology from Nov 2019 to May 2021. Sample size was calculated by WHO sample size calculator with 95% confidence interval and 5% Margin of error of estimation 16. Consecutive non probability sampling technique was utilized and 85 cases with postpartum hemorrhage were enrolled who were admitted through emergency and outpatient department. All women of reproductive age, any gravidity or parity presenting with postpartum hemorrhage due to uterine atony, coagulopathy or placental implantation site bleeding after vaginal or abdominal delivery were included. Cases with Genital tract injuries requiring repair, retained placental tissue or membranes requiring Evacuation & Curettage, uterine rupture requiring Laparotomy and secondary postpartum hemorrhage were excluded. All information was recorded in a pre-designed proforma and data was analyzed using SPSS version 20.

Results: Our study included 85 women with 62.35% normal vaginal deliveries and 37.65% with cesarean section, uterine atony found to be the top most cause of postpartum hemorrhage (47.1%). Success rate of uterovaginal packing remained high i.e 95.3%

Conclusion: Our study concludes that Uterovaginal packing was 95.3% effective in the controls of postpartum hemorrhage. It is a quick and effective recovery to control postpartum hemorrhage conservatively.

Keywords: Postpartum Hemorrhage (PPH), Uterovaginal Packing, Uterine Atony, efficacy.

INTRODUCTION

Millennium developmental goal 8 was about improvement of maternal health and reduction of maternal mortality rate by three quarter between 1990-2015. Despite a significant reduction in maternal mortality rate, that decline was lesser than half of the target. Similarly goal 3 of the sustainable developmental goals is about the good health, well being and to reduce the maternal mortality rate to less than 70/100,000 live birth by 2030. Addressal of the main cause of maternal morbidity and mortality would be challenging but promising in achieving these targets.¹

In the developing world risk of maternal death is 1/1000 deliveries where as in developed world the risk is 1/ 100,000.² The postpartum hemorrhage is a significant contributor to maternal morbidity and mortality.³

Primary postpartum hemorrhage is defined as the blood loss in excess of 500 ml in vaginal delivery or 1000 ml in cesarean delivery within 24 hours of child-

birth. It affects 5% of all women after delivery despite acute management of third stage of labour and 1% of women experiencing massive postpartum hemorrhage.⁴

Since estimates of blood loss at delivery are subjective and not precise, thus postpartum hemorrhage should be diagnosed with any amount of blood loss that causes hypovolaemia and maternal hemodynamic instability.⁵ According to WHO analysis hemorrhage was the leading causes of maternal death worldwide and more than two third of the deaths due to hemorrhage were categorized as postpartum hemorrhage.⁶ The risk of maternal death due to hemorrhage is high in low resource countries.⁷

Pakistan demographic health survey showed that maternal deaths constitute 20% of all deaths in females of reproductive age group. Postpartum hemorrhage found to be the leading cause of maternal death accounting for 27.2% of all deaths.⁸ In Pakistan the prevalence rate of postpartum hemorrhage has been estimated as 34% by WHO.⁹

Common causes of postpartum hemorrhage include uterine atony, bleeding from the placental implantation site (placental bed) and adjacent structures.¹⁰ Unusual causes include the placenta accreta, uterine inversion and abnormalities of the haemostatic system. The most common cause of early postpartum hemorrhage is uterine atony in 80-85% cases.¹¹ Hemorrhage can occur despite active management of third stage of labour. Management of intractable postpartum hemorrhage refractory to medical treatment (uterotonic) requires prompt action.¹² Nearly all these deaths could be prevented by timely management. Recently the focus has been on decreasing morbidity associated with obstetric and gynecological hemorrhage and the aim is to decrease the need for Laparotomy and increase in the likelihood of uterine preservation.¹³ Uterine packing or tamponade may be a reasonable alternative to further surgical intervention in patients with intractable obstetric hemorrhage. It should be considered before proceeding to major surgery when conventional treatment fails to provide relief.¹⁴

These tamponade techniques have double action, firstly they work by exerting mechanical pressure on the sinuses in placental bed which results in cessation of hemorrhage and secondly intrauterine packing elevates the uterus which places the uterine vessels on stretch and decreasing the perfusion pressure hence decreasing the blood loss from genital tract. Techniques of uterine tamponade to treat atony have been attempted using sterilized Ribbon gauze, inflated intrauterine Foley's catheter, condom catheter and silicon obstetric balloons. Commercial tamponade devices including Sangstaken Blackmore tube and Bakeri balloon are also used to control postpartum hemorrhage.¹⁵

Despite the wide range of devices available, none of them are ideal in view of difficult use without anesthesia and high cost of

the commercially available catheter making its availability difficult in low resource countries. Uterovaginal packing is a cheap, easily available, reasonable alternative to control postpartum hemorrhage in low resource settings.¹⁶ This modality is useful in controlling hemorrhage from uterine atony, coagulopathy, placental implantation site bleeding caused by placenta previa or Placenta accreta. The reported efficacy of uterovaginal packing in the treatment of postpartum hemorrhage is 90.9%¹⁷, 98.6%¹⁸, 85%¹⁹ and 84.7%²⁰ in various research studies. The goal of treatment with uterovaginal packing for all causes of postpartum hemorrhage is cessation of bleeding in a timely fashion before the onset of consumptive coagulopathy and signs of end organ failure.

The aim of this study is to determine the effectiveness of uterovaginal packing which could be a plausible alternative to major surgical procedure. Uterovaginal packing is an ideal option for a woman of low parity wanting fertility preservation. In a woman of high parity with complete family size where fertility preservation is not the issue, hysterectomy should not be offered as first choice keeping in view the morbidity associated with major surgery. Thus uterovaginal packing is a prudent option in women of low parity as well as high parity. Moreover this research study would be an addition to the pool of previous research studies and will play its vital role in conservation of this "Dying Medical Art".

METHODOLOGY

It was a prospective interventional study, conducted in department of Obstetrics and gynecology at Hayatabad medical complex Peshawar from November 2019 to May 2021. Sample size was calculated by WHO sample size Calculator with 95% confidence interval and 5% margin of error of estimation.¹⁶ Non probability consecutive technique was utilized for sample collection. Patients were admitted through both emergency and

outpatient department.

During this period total of 85 women were enrolled. All women of reproductive age from 15 -45 years and any gravity/parity (primipara with one child, multipara with ≥ 2 children grand multipara with ≥ 5 children and great Grand multipara ≥ 10 children) presenting with postpartum hemorrhage due to uterine atony, coagulopathy and placental implantation site bleeding after vaginal delivery or cesarean delivery who failed to respond to medical treatment, were included in this study. Whereas patients with postpartum hemorrhage due to genital tract injuries requiring re-suturing retained placental tissue or membrane requiring evacuation and curettage, uterine rupture or perforation requiring Laparotomy and all cases of secondary postpartum hemorrhage were excluded from this study.

Patients presented with postpartum hemorrhage were subjected to detailed history and clinical examination in order to identify the definitive cause of postpartum hemorrhage. After complete evaluation, the situation and treatment plan was explained to attendants and written informed consent obtained. Side by side samples for baseline investigations including blood group, Full blood count, coagulation profile and renal functions were taken and maternal resuscitation was carried out by the team members according to set protocols for obstetrical emergencies.

Uterovaginal packing was done in all women by an expert obstetrician having minimum of 5 years experience, who is on floor 24/7 as per departmental requirement.

Under all aseptic measures a tight uniform packing of whole uterine cavity was done with the help of sponge holding forcep or fingers using sterilized roll gauge of (8 -10 m, more or less) starting from fundus up to full vagina to maintain pressure. All the women were managed with other standard

protocols set for postpartum hemorrhage like monitoring of vitals, fluid replacement, transfusion of blood and blood products if indicated. Broad spectrum antibiotics were offered. The packing was removed after 24 hours of insertion.

Most of the cases with postpartum hemorrhage were brought from outside hospital, their blood loss before packing could not be estimated precisely however their history of heavy blood loss, clinical condition and hemodynamic status was self explanatory. Whereas, in admitted patients delivered at hospital postpartum hemorrhage was diagnosed directly by observing the torrential bleeding from genital tract (one kidney tray =500 ml blood loss). As soon as the packing accomplished and volume replenishment done, their vital got stability. Hemoglobin was built up by blood transfusion as per need.

After uterovaginal packing blood loss (if any) was monitored by inspection of pad intermittently and patients were shifted to high dependency unit for vital monitoring, intake output record and further management. Blood transfusion and volume replenishment was done according to hemodynamic status and degree of fall in hemoglobin.

Effectiveness was determined in terms of absence of hemorrhage after removal of pack, stable vital signs and no need of any further intervention or hysterectomy. In case of deterioration of women, the packing was abandoned and other surgical intervention contemplated to save the women. We tried to abolish the fear of concealed hemorrhage by uniform tight uterovaginal packing with no potential space left behind and the procedure performed by a competent obstetrician. On the other hand the risk of infection was tried to overcome by utilizing aseptic measures, sterile technique, administration of broad spectrum antibiotic cover and avoiding prolong retention (>24 hours) of uterovaginal packing.

Approval of Institutional Ethical Committee and Research Committee was obtained. All patients fulfilling the inclusion criteria were included in the study. Informed consent in written form was obtained from the patient or their attendants. Confounders and bias were controlled by strictly following the selection criteria. All the information including age, period of gestation, gravidity, parity and mode of delivery was recorded in a predesigned proforma. Data was analyzed using SPSS version 20. All variables were expressed in terms of frequencies and percentages. Results were presented in tabular form.

RESULTS

Our study showed that among 85 women n=15 (17.6%) females were between 15-24 years of age, n=48 (56.5%) females were between 25-34 years of age and n=22 (25.9%) females were between 35-45 years of age. Mean age was 31 years \pm 9.23 SD (Table 1).

Status of Parity among 85 women was

analyzed as n=12 (14.1%) women were Primipara, n=21 (24.7%) were multipara, n=36 (42.4%) were Grand multipara with mean Parity of 6 ± 5 SD (Table1). Period of Gestation among 85 patients was analyzed as n=23 (27.1%) patients had (24-37) weeks of gestation, n=44 (51.8%) patients had 37-40 weeks of gestation and n=18 (21.1%) patients had 40-42 weeks of period of gestation Mean POG 37 weeks \pm SD 4.5 (Table 1).

In this study n=29 (34.1%) women belonged to urban areas and n=56 (65.9%) women came from rural areas (Table 1). As far as referral status of patients is concerned n=22 (25.9%) cases were directly admitted where as n=63 (74.1%) cases were received as referred cases (Table 1). Our study depicted n=12 (14.1%) booked cases and n=73 (85.9%) cases unbooked, out of 85 cases (Table 1). Among these 85 patients n=16 (18.8%) had previous history of postpartum hemorrhage and n=69 (81.2%) experienced postpartum hemorrhage for first time. Table 2 shows mode of delivery among 85 patients was analyzed as n=53 (62.35%) normal

Table 1: Demographic characteristics

Characteristics	Number (%)	
Maternal Age (years)	15-24	15 (17.6%)
	25-34	48 (56.5%)
	35-45	22 (25.9%)
Parity	Primipara	12 (14.1%)
	Multipara	21 (24.7%)
	Grand Multi	36 (42.4%)
	Great Grand Multi	16 (18.8%)
Locality	Urban	29 (34.1%)
	Rural	56 (65.9%)
Referral status	Direct	22 (25.9%)
	Referred	63 (74.1%)
Booking Status	Booked	12 (14.0%)
	Unbooked	73 (85.9%)
Period of Gestation	24-37 weeks	23 (27.1%)
	37-40 weeks	44 (51.8%)
	40-42 weeks	18 (21.1%)
Past History of Postpartum Hemorrhage	Present	16 (18.8%)
	Absent	69 (81.2%)

Table 2: Mode of delivery, causes, outcomes of procedures, need for blood transfusion, and success rate of postpartum haemorrhage in uterovaginal packing

Variables		Number (%)
Mode of delivery	Vaginal Delivery	53 (62.35%)
	Cesarean Section	32 (37.65%)
	Total	85 (100%)
Causes	Uterine Atony	40 (47.1%)
	Bleeding from Placental Bed	32 (37.6%)
	Deranged Coagulation profile	13 (15.3%)
Outcome	Success	81 (95.3%)
	Failure	4 (4.7%)
No. of Unit transfusion	1-2	41 (49.4 %)
	3-4	28 (32.9 %)
	5 or > 5	12 (14.1 %)
	No Transfusion	4 (4.7 %)
Causes	Uterine Atony	38 (46.9 %)
	Bleeding from Placental Bed	31 (38.3 %)
	Deranged Coagulation	12 (14.8 %)

vaginal deliveries and n=32 (37.65%) patients had Cesarean Section.

Most common cause of postpartum hemorrhage was Atonic Uterus followed by bleeding from placental bed n=32 (37.6%) and deranged coagulation profile n=13 (15.3%) (Table 2).

According to our definition of effectiveness, as absence of hemorrhage after removal of packing and control of postpartum hemorrhage not requiring any further intervention and hysterectomy, Uterovaginal tamponade was effective in 81 (95.3%) cases whereas 4 (4.7%) patients underwent hysterectomy (Table 2).

Patient suffering from postpartum hemorrhage (95.2%) required blood transfusion with maximum 1-2 units of blood required in 49.4% of patients and massive treatment was required in 15% of women (Table 2). In present study there was no maternal death due to obstetric hemorrhage.

DISCUSSION

Postpartum hemorrhage is a potential-

ly lethal event. Early diagnosis and swift management of postpartum hemorrhage are essential to reduce maternal morbidity and mortality, particularly in low resource settings where the risks to maternal health are high. Postpartum hemorrhage is a major complication of delivery; Hysterectomy is commonly performed when medical treatment of postpartum hemorrhage fails. We assessed the effectiveness of uterine tamponade by roll gauze, a conservative surgical technique in the management of postpartum hemorrhage.

In present study the intrauterine packing was successful in controlling postpartum hemorrhage in 95.3% of cases, refractory to recommended medical treatment. The success rate is strongly related to the technique and expertise and it works efficiently when opted as an early recourse before developing decompensation, coagulopathy or end organ failure.

Haq et al and Tayyab et al²¹, in their study included cases of uterine hemorrhage and success rate was 85% where as success rate of a study done by Hsu et al¹⁴ was 88.9% to control hemorrhage in patients fol-

lowing delivery and pregnancy termination. These results are comparable with efficacy of our study. Another study done by Wittch et al²² showed similar successful management of postpartum hemorrhage with uterine packing with low maternal morbidity profile.

Another study conducted by Rathore et al²³ found that the success rate of tamponade as 94% for the control of Hemorrhage which is comparable to our study. Akhter et al²⁴ carried out a study on 80 patients bearing Primary postpartum hemorrhage, Mean age, Parity; period of gestation was different from that in our study. As far as efficacy is concerned it was noted to be effective in 88.8% of women.

Success rate reported in other studies were comparable to our study 89.14% by Nizam et al²⁵, 91.8% by Malay et al²⁶ and 90.09% by Javed et al.¹⁷ Bagga et al²⁷ reported 88.9% efficacy with Uterovaginal packing. In a study conducted by Dabelea et al²⁸, postpartum hemorrhage was arrested in 90% of women with Uterovaginal packing and the result of our study stands consistent with the findings of this study in terms of efficacy. 86% efficacy was reported by Ali et al.²⁹

On the other hand, a study conducted by Jain et al¹⁶ had similar success rate as that in our study. This study showed overall efficacy of 94% in controlling postpartum hemorrhage where as it was effective in 96.96% of woman with uterine atony who didn't respond to uterotonic drugs. Other demographic characteristics analysis was also comparable to our study. Similar results were observed in other study carried out by Suarez et al³⁰, the overall success rate was 85.9%. The highest success rate corresponded to uterine atony (87.1%) and placenta previa (86.8%) while lowest in placenta accreta (66.7%) where as our study showed highest success rate (46.9%) in uterine atony, 38.3% in bleeding from pla-

cental bed 14.8% in cases of coagulopathy.

In present study most common indication for Uterine packing was postpartum hemorrhage due to uterine atony (47.1%) which is comparable to Hsu et al¹⁴, whereas Reno et al¹⁶ showed 66% of cases with uterine atony. Similar frequency of uterine atony is reported by Ali et al²⁷ 52%, Bhatti et al³¹ 74.5% and in study of Qadir et al¹⁹ 50% of uterine atony was noted.

In our study Intrauterine packing was done to control postpartum hemorrhage in 53 (62.35%) cases delivered vaginally and in 32 (37.65%) cases following cesarean section; however it is an effective method in controlling hemorrhage in women delivered either vaginally or by Cesarean section.

While discussing the age group of women undergoing uterovaginal packing, we observed that in our study the 56.5% women were in age group 25-34 years whereas Nizam et al²⁵ reported the 44.2% of women as the most frequent age group 31-40 years undergoing intra uterine packing. Another study by Qadir et al¹⁹ observed 42% of subjects falling to the age range of 31-40 years. Jain et al¹⁶ studied 52% of cases falling to age range 25-29 years followed by 20-24 years as 36%.

By regional distribution our 65.9% subjects belonged to rural areas which is comparable to the study observation by Qadir et al¹⁹ i.e 69% as rural distribution. In study of Jain et al¹⁶, this figure is 64% for rural population while a study by Marwah et al³² who reported that 68% of their study population fell into rural areas.

In our study a large number of patients were unbooked; these cases were in excess making 85.9% of the total subjects whereas Marwah et al³² observed 59% and Qadir et al¹⁹ reported that the 63.4% of patients as unbooked cases.

As far as blood transfusion is concerned, maximum blood transfusion were 1 to 2 units of blood in 49.4% of cases, Ali et al²⁹ in their study comprising 42 subjects reported transfusion rate of 4-5 units of blood in 45% of patients and another study done by Qadir et al¹⁹ this rate was 42.3%.

In our study, 14.1% primipara 24.7% multipara, 42.4% grand-multipara and 18.8% great grand multi para were offered Uterovaginal Packing where as in study of Haq et al²¹, most of the subject who underwent uterovaginal packing were multipara i.e 50%, followed by grand multi i.e: 30% and primipara i.e: 20%. Jain et al¹⁶ had 68% of multiparous women in his study who underwent uterovaginal packing followed by 32% primiparous women. Study of Shao et al¹⁵ showed 51% of women were grand multiparous, 32% primiparous and 17% grand multiparous.

Small sample size during a limited period of time in a single center, all are limitations of this study owing to which generalization of the results could be questioned. Therefore, multicentre studies with larger sample size are required to identify the best way of managing such women in low resource settings.

CONCLUSION

Our study concludes that the uterovaginal packing was 95% effective in the control of postpartum hemorrhage. Intrauterine packing is less invasive fertility preserving, simple, safe, quick and effective procedures which immediately reduces or stops the bleeding. Thus it may avoid the need for Laparotomy and Hysterectomy hence associated morbidities. Moreover this conservative approach shortens the hospital stay and all associated issues.

RECOMMENDATIONS

As observed in this study, most of the

cases were referred from periphery. So a new window/ chapter opens about training program of health care providers working at periphery in order to avail golden hour to manage the woman there and then. Timely control of postpartum hemorrhage before the onset of consumptive coagulopathy, end organ failure and prevention of maternal mortality should be the goal of this training.

REFERENCES

- Herrick T, Mvundura M, Burke TF, Abu-Haydar E. A low-cost uterine balloon tamponade for management of postpartum hemorrhage: modeling the potential impact on maternal mortality and morbidity in sub-Saharan Africa. *BMC Pregnancy Childbirth*. 2017;17(1):374-80. DOI:10.1186/s12884-017-1564-5
- Mousa HA, Walkinshaw S. Major postpartum haemorrhage. *Curr Opin Obstet Gynecol*. 2001;13(6):595-603. DOI: 10.1097/00001703-200112000-00008.
- Sheldon WR, Blum J, Vogel JP, Souza JP, Gülmezoglu AM, Winikoff B. Postpartum hemorrhage management, risks, and maternal outcomes: Findings from the world health organization multicountry survey on maternal and newborn health. *Obstet Anesth Dig*. 2015;35(1):25-6. DOI:10.1097/01.aoa.0000460395.75349.79
- WHO recommendations for the prevention and treatment of postpartum haemorrhage. Genève, Switzerland: World Health Organization; 2012. Available from URL: <https://apps.who.int/iris/bitstream/handle/10665/75411/9789241?sequence=1>
- Kerr R, Eckert LO, Winikoff B, Durocher J, Meher S, Fawcus S, et al. Postpartum haemorrhage: Case definition and guidelines for data collection, analysis, and presentation of immunization safe-

- ty data. *Vaccine*. 2016;34(49):6102-9. DOI:10.1016/j.vaccine.2016.03.039
6. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller A-B, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health*. 2014;2(6):e323-33. DOI:10.1016/S2214-109X(14)70227-X
 7. Maswime S, Buchmann E. A systematic review of maternal near miss and mortality due to postpartum hemorrhage. *Int J Gynaecol Obstet*. 2017;137(1):1-7. DOI:10.1002/ijgo.12096
 8. National Institute of population studies 2008. Pakistan Demographic and Health Survey 2007: Key findings. Calverton, Maryland, USA: NIPS and Macro International [cited 2021 Jun 3]. Available from URL: <https://res.nipsportal.com/publications/123.pdf>
 9. Attending to 136 million births, every year: make every mother and child count: the world report. Geneva, Switzerland, WHO; 2005. *Who int*. [cited 2021 Jun 3]. Available from URL: <https://apps.who.int/iris/bitstream/handle/10665/43131/9241562900.pdf?sequence=1>
 10. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Rouse DJ, Spongo CY, Williams Obstetrics. 23rd Edition. MC Graw Hill Medicine. New York. 2010;757-98.
 11. Arias F, Bhide AG, SA, Damania K, Daftary SN. Practical guide to high risk pregnancy and delivery. 3rd ed. New Delhi (India): Elsevier; 2012.
 12. Lokugamage AU, Sullivan KR, Niculescu I, Tigere P, Onyangunga F, Refaey HE, et al. A randomized study comparing rectally administered misoprostol versus Syntometrine combined with an oxytocin infusion for the cessation of primary post partum hemorrhage. *Acta Obstet Gynecol Scand*. 2001;80(9):835-9. DOI:10.1080/j.1600-0412.2001.080009835.x
 13. Pahlavan P, Nezhat C, Nezhat C. Hemorrhage in obstetrics and gynecology. *Curr Opin Obstet Gynecol*. 2001;13(4):419-24. DOI:10.1097/00001703-200108000-00008.
 14. Hsu S, Rodgers B, Lele A, Yeh J. Use of packing in obstetric hemorrhage of uterine origin. *Obstet Gynecol Surv*. 2003;58(8):515-6. DOI: 10.1097/01.ogx.0000079644.05271.30
 15. Yong S, Pradhan M. Intrauterine Gauze Packing in Primary Post Partum Hemorrhage following Caesarean section: A Clinical study. *Nepal J Obstet Gynaecol*. 2013;7(1):33-6. DOI:10.3126/njog.v7i1.8833
 16. Yasser IK. Therapeutic evaluation of the partial movement of the center of the neural bundle according to its standard components to determine the contribution rates of its standard components. *J Med Sci Clin Res*. 2018;6(8). DOI:10.18535/jmscr/v6i8.30
 17. Javed L, Munir SI, Eusaph AZ. Effectiveness of utero-vaginal packing in management of postpartum hemorrhage. *Ann King Edw Med Univ*. 2017;23(1):58-62. DOI:10.21649/akemu.v23i1.1513
 18. Bibi S, Gul K, Bukhsh FM, Gul P. Uterovaginal Packing in the Management of primary Post Partum Hemorrhage in Tertiary Care Hospital: A five year Clinical study *J. Soc. Obstet. Gynaecol. Pak*. 2018;8(3):185-8.
 19. Qadir M, Amir S. To determine the efficacy of uterine packing in management of primary postpartum haemorrhage. *J Saidu Med Coll Swat*. 2017;7(2):79-82. DOI: 10.52206/jsmc.2017.7.2.%25p
 20. Pradhan B, Rc L, Sharma P, Singh A. Uterovaginal packing as treatment in primary postpartum hemorrhage in Patan hospital. *Nepal J Obstet Gynaecol*. 2016;11(1):44-6.
 21. Haq G, Tayyab S. Control of postpartum and post abortal haemorrhage with uterine packing. *J Pak Med Assoc*. 2005;55(9):369-71.
 22. Wittich AC, Salminen ER, Hardin EL, Desantis RA. Uterine packing in the combined management of obstetrical hemorrhage. *Mil Med*. 1996;161(3):180-2. DOI:10.1093/milmed/161.3.180
 23. Rathore AM, Gupta S, Manaktala U, Gupta S, Dubey C, Khan M. Uterine tamponade using condom catheter balloon in the management of non-traumatic postpartum hemorrhage: Condom balloon tamponade in PPH. *J Obstet Gynaecol Res*. 2012;38(9):1162-7. DOI:10.1111/j.1447-0756.2011.01843.x
 24. Akhtar KT, Tabassum S, Siddique S. Efficacy of balloon tamponade in control of primary postpartum haemorrhage (PPH). *Prof Med J*. 2020;27(04):717-20. DOI:10.29309/tpmj/2020.27.04.3423
 25. Nizam K, Haider G. Role of Uterovaginal packing in postpartum hemorrhage. *JLUMHS* 2010; 9(1):27-9.
 26. Sarkar M, Jane SK, Bhar D, Mandal SK, Halder PS, Das AK. Uterovaginal packing with rolled gauze in postpartum hemorrhage: A prospective study of an Indian Medical College. *J Med Med Sci*. 2011;2(7):985-9.
 27. Bagga R, Jain V, Kalra J, Chopra S, Gopalan S. Uterovaginal packing with rolled gauze in postpartum hemorrhage. *Med Gen Med*. 2004;6(1):50.
 28. Dabelea V, Schultze PM, McDuffie RS Jr. Intrauterine balloon tamponade in the management of postpartum hemorrhage. *Am J Perinatol*. 2007;24(6):359-64. DOI:10.1055/s-2007-984402
 29. Ali T, Ghazi A, Siddique NM. Uterovaginal Packing in massive postpartum hemorrhage – A re-appraisal. *PK J Surg* 2008; 24(1): 57-9 Available from URL: http://www.pjs.com.pk/journal_pdfs/jan_march08/15.pdf
 30. Suarez S, Conde AA, Borovac PA, Suarez RD, Eckardt M, Theron G, et al. Uterine balloon tamponade for the treatment of postpartum hemorrhage: a systematic review and meta-analysis. *Am J Obstet Gynecol*. 2020;222(4):293.1-293.52. DOI:10.1016/j.ajog.2019.11.1287
 31. Bhatti K, Lashari A, Mahar T, Hafeez

R. Intrauterine packing in postpartum hemorrhage still a life saving procedure in resource settings. Rawal Medical J. 2014;39(4):432-4.

32. Marwah A, Singh P, National A. Role of intrauterine packing in primary postpartum hemorrhage. Int J Sci Res. 2016;5(7):209-18.

Author's Contribution

NK helped in the collection of the data, wrote the manuscript, and performed the statistical analysis. BR conceived the idea, contributed in data collection, and provided the final approval. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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None

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.