ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at:www.ijmacr.com

Volume – 8, Issue – 2, March - 2025, Page No. : 140 – 148

Peripartum Perineal Injuries – Prospective Analyis At A Tertiary Referral Centre

[1]Dr. Itishree Jena, Junior Resident, Department of Obstetrics & Gynecology, SN Medical College, Agra

[2]Dr. Urvashi Verma, Professor, Department of Obstetrics & Gynecology, SN Medical College, Agra

[2]Dr. Ruchika Garg, Professor, Department of Obstetrics & Gynecology, SN Medical College, Agra

[3]Dr. Akanksha Verma, Assistant Professor, Department of Obstetrics & Gynecology, SN Medical College, Agra

[4]Dr. Neelam Singh, Associate Professor, Department of Obstetrics & Gynecology, SN Medical College, Agra

[1]Dr. Shaifali Singh, Junior Resident, Department of Obstetrics & Gynecology, SN Medical College, Agra

[1]Dr. Shatakshi Jaiswal, Junior Resident, Department of Obstetrics & Gynecology, SN Medical College, Agra

Corresponding Author: Dr. Itishree Jena, Junior Resident, Department of Obstetrics & Gynecology, SN Medical College, Agra

How to citation this article: Dr. Itishree Jena, Dr. Urvashi Verma, Dr. Ruchika Garg, Dr. Akanksha Verma, Dr. Neelam Singh, Dr. Shaifali Singh, Dr. Shatakshi Jaiswal, "Peripartum Perineal Injuries – Prospective Analyis At A Tertiary Referral Centre ", IJMACR- March - 2025, Volume – 8, Issue - 2, P. No. 140 – 148.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: Postpartum vulval haematoma is a rare but serious complication following vaginal delivery. It can lead to significant morbidity and, if left untreated, may result in life-threatening conditions. The identification of risk factors and the assessment of maternal outcomes are crucial for improving management and preventing adverse consequences. The aim of this study was to assess the risk factors, clinical presentation, management strategies, and maternal outcomes of postpartum vulval haematomas in a tertiary care center in Uttar Pradesh over a one-year period.

Material and Methods: This was a prospective study conducted for 1 year (from January 2024 to December 2024) at SNMC Agra, a tertiary care center in Uttar Pradesh. Out of total vaginal deliveries, 54 women were diagnosed with vulval haematoma following delivery were included in the study. Patient data including demographic details, obstetric history, clinical features, management protocols, and maternal outcomes were reviewed. Risk factors such as parity, place of delivery (home/institutional), instrumental delivery, prolonged labor, and perineal trauma and previous surgery over perineal or episiotomy were analyzed.

Results: The study found that the majority of patients presenting with vulval haematomas were primiparous (81.48%). Almost 18.52% of them had institutional delivery. The most common presenting symptoms was

pain in all cases and bleeding in 96.30% of cases. There were no cases of maternal mortality.

Conclusion: Postpartum vulval haematoma, though rare, can result in significant maternal morbidity if not promptly managed. Early recognition and intervention, including both surgical and conservative options, contribute to positive outcomes. The identified risk factors highlight the importance of vigilant monitoring during and after delivery, particularly for women with primiparous, preeclampsia and those undergoing instrumental deliveries.

Keywords: Postpartum, Vulval Haematoma, Maternal morbidity, Perineal injuries, peripartum perineal hematomas

Introduction

A vaginal, vulval, or perineal hematoma is a collection of blood that accumulates within the tissues of the vagina, vulva, or perineum, respectively, usually caused by trauma or injury to blood vessels in that area, most commonly seen in the postpartum period following childbirth. A vulval hematoma is a collection of blood in the vulva. The vulva is soft tissue mainly composed of smooth muscle and loose connective tissue and is supplied by branches of the pudendal artery.[1] Vulval hematomas are more common in the obstetric population, and usually present within 24 h of delivery.[2] In the obstetric population, a vulval hematoma most commonly results from direct or indirect injury to the soft tissue while in gynecology the incidence is in the range of 1 hematoma per 300 to 1000 deliveries. [3,4]

The major risk factors include lacerations, episiotomy, or operative delivery while extensive stretching of the birth canal during vaginal delivery, delivery of a baby > 4 kg, varicosities of the genital tract, and maternal age > 29 years [5].

Bleeding into the vulva is restricted by Colles fascia and the urogenital diaphragm therefore hematoma will be visible on physical examination.[6] Since the Colles fascia exerts less resistance, vulval hematomas can grow to become 15cm in diameter or more.[7]

Perineal, abdominal, or buttock pain is the most common symptoms that occurs with 24 hr of delivery. The intensity of the pain can be severe enough to interfere with mobility[6]. Intermittent bleeding may also occurs in some cases. Small, nonexpanding vulval hematomas will often resolve with conservative management which includes include analgesia, sitz baths, empiric antibiotics, pain medication and application of cold packs, while severe may require surgical intervention.[8]

Larger hematomas (>12 cm) hematomas, continuously expanding hematomas, or those large enough to cause either urologic or neurologic symptoms may require management with surgical exploration or vessel ablation through interventional radiology. Neglected and inappropriately managed postpartum vulval hematoma can cause significant maternal morbidity; therefore, timely surgical exploration, ligation of bleeding vessels, and obliteration of dead space can avert severe maternal complications.[9]

Postpartum vulval hematomas cause maternal morbidities such as anemia, postpartum hemorrhage, superinfection, necrotizing fasciitis, prolonged hospitalization, and need for transfusion[10-11]. Timely diagnosis and appropriate management—ranging from conservative observation to surgical intervention—are essential to preventing complications such as infection, sepsis, and hemorrhagic shock.

Globally there are only few only two case study report available online. was one or two studies published on this only case studies have been reported, therefore there

is a limited understanding of the prevalence, risk factors, and outcomes of postpartum vulval haematomas in Indian populations, particularly in rural or semi-urban settings. Given that Uttar Pradesh, with its large population and diverse healthcare settings, represents a unique demographic in India, it is crucial to assess the incidence and maternal outcomes associated with vulval, vaginal or perineal hematomas before admission during after hospitalization, with this condition in tertiary care centers in the region. Therefore we had conduct this study to assess the risk factors and clinical presentation of postpartum vulval haematomas in a tertiary care center in Uttar Pradesh over a period of one-year.

Material and Methods

This retrospective study was conducted in the department of obstetrics and gynaecology at Sarojini Naidu Medical College Agra, UP, India on cases admitted with vulval hematomas, or had sustained vülvar hematomas during their hospitalization from 1st January, 2024 to 31st December, 2024.

The data were acquired with the help of a computer file that was retrospectively filled. Detailed information was obtained from Labour room admission register, case files and operation theatre records, and reviewed.

Data collected includes parity, risk factors, history of instrumental delivery, episiotomy, baby weight. Vitals, CBC and coagulation profile were noted/recorded. Amount of blood loss, need for blood transfusion, post-operative recovery and duration of hospital stay were noted in every case.

The delivery details included gestational age at delivery, duration of labour, labour induction method, instruments used during delivery (vaccum, single blade, double blade, vaccum), episiotomy, and birth weight. The hematoma characteristics included detection time, site, type, first hematoma symptom and intervention details.

The size of a hematoma determined by measure its maximum diameter. The anatomic localization and size of hematomas were obtained from comprehensive operating notes in cases that underwent surgical treatment or from regularly recorded medical information in cases that received conservative treatment. According to the hematoma size, the cases were classified into <10 cm and >10 cm.

Method of blood collection after delivery: A calibrated delivery drape' is placed under the mother's buttocks and tied around her waist, with the calibrated funnel portion (that indicates how much blood she has lost) hanging down between her legs. PPH classify as moderate when the blood loss is between 500 mL and 1000 mL, and severe when the blood loss is over 1000 mL[12].

Shock index: The shock index (SI), calculated by dividing the heart rate (bpm) by the systolic blood pressure (mmHg)[13], which was used for to predict various intervention such as operative interventions; ICU admission, multiorgan failure, DIC, massive blood transfusion and maternal mortality.

Statistical analysis

Data collected was entered into Microsoft excel sheet and statistical analysis was performed using Statistical Package for the Social Sciences (IBM SPSS Statistics for Windows, Version 25.0, New York, NY, USA).

Results

This study included 54 cases of vulval hematoma out of them 52(96.30%) were delivered out of our hospital. Only 2 (3.70%) cases were delivered in our hospital. Most of them (81.48%) were primiparas. Preeclampsia was the major risk factor which accounts in half of the studied cases 27(50.0%) and 24 (44.44%) had no risk

factors. Episiotomy was performed in 46(85.19%) cases. Only 10 (18.52%) cases had instrumental delivery (instrumental/vaccum). In 4 (7.41%) cases the average blood loss was <100ml. while 40 (74.07%) cases the average blood loss was 100-500ml and in 10 cases had >500ml of blood loss measured. There was need of blood transfusion in 44(81.48%) cases. Majority (59.26%) of cases had 5-10 days of hospital stay and in 3 (5.56%) cases they were stay hospital for >10 days. No case of wound dehiscence was noted in 15-30 day follow-up.

Table 1: Clinical characteristics of cases

Variables	No. of cases	Percentage
Place of delivered		
Hospital (tertiary referral center)	2	3.70
Outside (PHC, Home, one the way)	52	96.30
Parity		
Primi	44	81.48
Multi	10	18.52
Risk factors		
Preeclampsia	27	50.0
Abruptio IUD	3	5.56
Diabetes mellitus	0	
None	24	44.44
Episiotomy		
Yes	46	85.19
No	9	16.67
Instrumental delivery		
Yes	10	18.52
No	44	81.48
Blood loss		
< 100 ml	4	7.41
100-500 ml	40	74.07
>500 ml	10	18.52
Blood transfusion		
Yes	44	81.48
No	10	18.52
Duration of hospital stay (days)		
< 5	19	35.19

5-10	32	59.26
>10	3	5.56
Wound dehiscence		
Yes	0	0
No	54	100

In this study, pain and bleeding was the most common symptoms present in the cases 100% and 96.30% respectively while tachycardia was presents in 27.78% of cases and only 2 (3.70%) cases had underwent shock. At episiotomy vulval hematoma was presents in 48(88.89%) remaining 6(11.11%) vulval hematoma presents at other than episiotomy site. Majority (66.67%) of cases had vulval hematoma of <10cm and in 18 (33.33%) cases size of vulval hematoma was >10cm.

Table 2: Characteristics of vulval hematoma

Parameters	No. of cases	Percentage
Symptoms		
Pain	54	100.0
Bleeding, dizziness, vertigo	52	96.30
Sign		
Shock, hypotension	2	3.70
Tachycardia, pallor	15	27.78
Site		
At episiotomy	48	88.89
Other than episiotomy	6	11.11
Size		
< 10 cm	36	66.67
> 10 cm	18	33.33

Out of total cases, 44 (81.48%) cases had >7g/dl preoperative Hb while rest 10(18.52%) cases had preoperative Hb level of <<7g/dl. Fourteen (25.93%) cases also had deranged coagulopathy.

Table 3: Hematological parameters of cases

	No. of cases	Percentage
Preop Hb (g/dl)		
<7	10	18.52
>7	44	81.48
Deranged coagulopathy		
Yes	14	25.93
No	40	74.07

In this study the 40 (74.07%) women had delivered babies of birth weight 2.5-3.0 kg followed by 8 (14.81%) cases which delivered 3.0-3.5 kg birth weight and only 6(11.11%) women delivered newborn of >3.5 kg birth weight.

Out of 54 cases 59.26% cases had shock index of 0.75-1.0, 24.07% cases had shock index of 0.5-0.75. Only 6 (11.11%) cases had shock index of 1.0-1.5 and 3(5.56%) cases had shock index of >1.5.

Table 4: Distribution of cases by Baby birth weight and shock index

	No. of cases	Percentage
Birth weight (kg)		
<2.5	0	0.0
2.5-3.0	40	74.07
3.0-3.5	8	14.81
>3.5	6	11.11
Shock index		
0.5-0.75	13	24.07
0.75-1.0	32	59.26
1.0-1.5	6	11.11
>1.5	3	5.56

Discussion

Vulval and vaginal hematomas require immediate attention and management from an obstetric and gynecologic hospitalist sometime general pactice surgeon. Hematomas can be the result of obstetricted, complications of gynecologic surgery, or the result of trauma. Vulval hematomas may cause serious morbidity and sometimes mortality too. A complete recovery is often seen. For small vulval hematomas, most resolve spontaneously under conservative management[14]

Our study analyzed the one year clinical profiles of vulval hematoma patients from a single center. During this time period only 54 cases of vulval hematoma were reported, out of them 96.30% were not delivered in our hospital but they were referred by other hospitals, only 2 (3.70%) cases were delivered institution. This study finds 81.48% of cases were primiparas and preeclampia was the major risk factor for vulval hematoma as it accounts almost 50% of cases. Episiotomy rate was very high i.e. 85.19% cases. In this study we face 88.89% of vulval hematomas at the episiotomy site. In our study 33.33% cases, size of vulval hematoma was >10cm which is comparable to the study of Kawashima M in 2021 in which 53.8% of hematomas were >5 cm in size[15]. In 40 (74.07%) cases the average blood loss was 100-500ml and few (10 cases) were blood loss > 500ml.

According to study by Denson LE et al[16] larger hematomas were more prevalent in vaginal-primiparous women. In their study macrohematomas occurred in 39% of the vaginal-primiparous women compared with 11% vaginal-multiparous women. The unadjusted odds of macrohematoma were 5.01 times greater for vaginal-primiparous women compared with vaginal-multiparous women which also observed in our study. Larger hematomas were more prevalent in vaginal-primiparous women, corresponding to most levator ani avulsions

resulting from first vaginal delivery[17]. A vulval hematoma can be considered a potential complication of preeclampsia, as the high blood pressure associated with preeclampsia can put increased stress on blood vessels, making them more prone to rupture and causing bleeding, which can manifest as a vulval hematoma. Pregnant women who underwent labor induction and episiotomy had a higher incidence of perinatal genital hematoma[18].

Episiotomy proportions were higher in patients with perinatal genital hematoma than in controls[18]. Rani et al[19] and Kawashima et al[20] reported that episiotomy is the leading hematoma risk factor, accounting for 92.3%–100% of cases.

The results of this study shows that 59.26% cases were stay in hospital for 5-10 days which aligns with the results of Guo X et al in which average hospital stay was 5.9±4.4 days[18]. Common symptom which occurred in all cases was pain (100%) and bleeding in 96.30% cases. Our result correlates with the study by Egan E et al, in which they also observed pain as the most common symptom of vulval hematoma. Patients can describe it as perineal, abdominal, or buttock pain[6].

In this study 81.48% cases had preop Hb level of >7g/dl. A large or expanding vulval hematoma can significantly decrease a person's hemoglobin level, potentially leading to anemia due to blood loss within the hematoma itself; essentially, the larger the hematoma, the greater the potential drop in hemoglobin concentration. A case presented by Hacivelioglua S et al[21] in which they found hemoglobin level 7.4 g/dL.

In this study 74.07% cases had delivered babies of birth weight 2.5-3.0 kg while 14.81% cases delivered babies of 3.0-3.5 kg birth weight. Only 11.11% babies delivered >3.5 kg birth weight. This study does not reveals that only birth weight of the baby is the key factor for vulval hematoma there has been certain other risk factors such as nulliparity, age > 29 years, birth weight > 4.5kgs, instrumental delivery, prolonged labor, pre-eclampsia, genital tract varicosities, bleeding diathesis, precipitate delivery, etc[22]. which combines to cause vulval hematoma. In this study mild to moderate shock was observed in cases while only 3 cases severe shock was observed. In this study there is no direct association with vulval hetatoma and shock. Severe shock persists with massive hemorrhage and no case in our study with massive hemorrhage.

Since the incidence of postpartum vulval hematoma is very low, there are no prospective randomized studies in the literature related to its risk factors this was an attempt to focus some likely risk factors for vulval hematoma.

Conclusion

Postpartum vulval haematoma, though rare, can result in significant maternal morbidity if not promptly managed. Primiparous, preeclampsia and episiotomy rate were the causative factors contribute to vulval hematoma. Early recognition and intervention, including both surgical and conservative options, contribute to positive outcomes. Further studies with large sample size should be warrant for identification of risk factors for postpartum vulval hematoma.

References

1. Mangwi AA, Ebasone PV, Aroke D, Ngek LT, Nji AS. Non-obstetric vulva haematomas in a low resource setting: two case reports. Pan Afr Med J. 2019;33:314.
2. Winkelman J, Murphy K, Booth C. Delayed presentation of a non-resorbing postpartum vulval

hematoma: A case report. Case Reports in Women's Health. 2023 Jun 1;38:e00518.

3. Zahn CM, Yeomans ER. Postpartum hemorrhage: placenta accreta, uterine inversion, and puerperal hematomas. Clinical obstetrics and gynecology. 1990 Sep 1;33(3):422-31.
4. Tseng JY, Lin IC, Lin JH, Chang CM, Chao WT, Wang PH. Optimal approach for management of postpartum vulva hematoma: Report of three cases. Taiwanese Journal of Obstetrics and Gynecology. 2020 Sep 1;59(5):780-3.
5. Saleem Z. and Rydhström H., Vaginal hematoma during parturition: a population-based study, Acta Obstetricia et Gynecologica Scandinavica. (2004) 83, no. 6, 560–562.
6. Egan E, Dundee P, Lawrentschuk N. Vulval hematoma secondary to spontaneous rupture of the internal iliac artery: clinical review. Am J Obstet Gynecol. 2009 Jan;200(1):e17-8.
7. Benrubi G, Neuman C, Nuss RC, Thompson RJ. Vulval and vaginal hematomas: a retrospective study of conservative versus operative management. South Med J. 1987 Aug;80(8):991-4.
8. J.Y. Tseng, I.C. Lin, J.H. Lin, C.M. Chang, W.T. Chao, P.H. Wang The optimal approach for management of postpartum vulva hematoma: report of three cases Taiwan J. Obstet. Gynecol.2020, 59(5): 780-783.
9. Tilahun T, Wakgari A, Legesse A, Oljira R. Postpartum spontaneous vulval hematoma as a cause of maternal near miss: a case report and review of the literature. Journal of Medical Case Reports. 2022 Feb 28;16(1):85.
10. Elbouti A, Smiti Y, Hniad A, Belghiti A, Tazi AS. Postpartum hemorrhagic shock following puerperal hematoma. PAMJ-Clinical Medicine. 2020 Jun 8;3(43).
11. Mangwi AA, Ebasone PV, Aroke D, Ngek LT. Non-obstetric vulva haematomas in a low resource setting: two case reports. Pan African Medical Journal. 2019 Aug 20;33(1).
12. World Health Organization. WHO Recommendations for the Prevention and Treatment of Postpartum Haemorrhage. 2012. apps.who.int/iris/bitstream/handle/10665/75411/9789241548502_eng.pdf;jsessionid=3BB762D5850A807E4FFD86BB24F05C9D?sequence=1. Geneva: WHO.
13. Rady MY, Rivers EP, Martin GB, Smithline H, Appelton T, Nowak RM. Continuous central venous oximetry and shock index in the emergency department: use in the evaluation of clinical shock. *Am J Emerg Med*. 1992; 10(6): 538–541.
14. Papoutsis D, Haefner HK. Large Vulval Haematoma of Traumatic Origin. J Clin Diagn Res. 2017 Sep;11(9):QJ01-QJ02.
15. Kawashima M, Tokushige H. Analysis of puerperal hematoma: a retrospective study. Journal of Rural Medicine. 2021;16(3):139-42.
16. Denson LE, Terrell DR, Vesely SK, Peck JD, Quiroz LH, Shobeiri SA. The Prevalence of Pelvic Floor Hematoma After Vaginal Delivery. Female Pelvic Med Reconstr Surg. 2021;27(6):393-397.
17. Kamisan Atan I, Lin S, Dietz HP, et al. It is the first birth that does the damage: a cross-sectional study 20 years after delivery. Int Urogynecol J 2018;29(11):1637–1643.
18. Guo X, Wu Y, Shao H, Zhang Y. Risk factors and management of perinatal genital hematoma: A single, tertiary medical center retrospective study in

China. International Journal of Gynecology & Obstetrics. 2024 Mar 20.

19. Rani S, Verma M, Pandher DK, Takkar N, Huria A. Risk factors and incidence of puerperal genital haematomas. J Clin Diagn Res. 2017; 11: QC01-QC03.
20. Kawashima M, Tokushige H. Analysis of puerperal hematoma: a retrospective study. J Rural Med. 2021; 16: 139-142.
21. Hacivelioglua S, Haydardedeoglub B, Simsekb E, Cokb T. Giant vulval hematoma during pregnancy after sexual intercourse: A case report. Eastern Journal of Medicine. 2012 Apr 1;17(2):94.
22. Saleem Z, Rydhström H. Vaginal hematoma during parturition: a population-based study. Acta Obstetricia et Gynecologica Scandinavica. 2004; 83(6):560–562