Nat. Volatiles & Essent. Oils, 2021; 8(5): 12348-12352

NVEO
Natural Volatiles & Essential Oils

Effect Of Albermochus Manihot Ointment In Perineal Rupture

[1]Sunaeni, [2]Adriana Egam

[1]Department of Midwifery, Health Polytechnic, Ministry of Health, Sorong, Indonesia

[2]Department of Midwifery, Health Polytechnic, Ministry of Health, Sorong, Indonesia

Abstract

Background : Perineal rupture is a complication of normal delivery that is often experienced. This is a major problem in obstetrics.
AIM: This study aims to determine the use of Leaf gedi (Albermochus Manihot) ointment during perineal massage on the incidence of perineal rupture.
Methods: This quasi-experimental study was conducted on 48 pregnant women with gestational age 35-41 weeks from April to May 2020. These pregnant women were randomly allocated into the control group (n=24) and the intervention group (n=24). Perineal massage using Leaf gedi (Albermochus Manihot) ointment is done once a day for a week. Statistical test using Mann Whitney test.
Results : The use of Albermochus Manihot extract ointment during perineal massage was effective in preventing Perineal Rupture. This is reinforced by the results of the Mann Whitney statistical test which shows a p-value of 0.021 <0.05.
Conclusions : Based on these findings, Albermochus Manihot extract ointment during perineal massage can be used effectively to reduce the risk of perineal rupture. Similar studies are recommended.
Keywords: perineal rupture, gedi leaf, post partum, antenatal, perianal massage

INTRODUCTION:

Perineal rupture is one of the causes of postpartum hemorrhage, due to maternal and fetal factors. In fact, the maternal factors that cause perineal rupture are uncontrolled and unassisted precipitous parturition, the patient is unable to push, hastily completed labor with excessive fundal thrusting, edema and fragility of the perineum, vulvar varicosities that weaken the perineal tissue, arcus Narrow pubis with a narrow pelvic inlet that presses the baby's head posteriorly and expands the episiotomy (Gundabattula and Surampudi, 2018; Huber et al., 2021; Jansson et al., 2020; Xiao et al., 2021).

The prevalence of perineal rupture varies widely in different countries. Approximately 50% of the incidence of perineal rupture in the world occurs in Asia. The prevalence of maternity mothers who experience perineal rupture in Indonesia in the 25-30 year age group is 24%, while the 32-39 year old mother is 62% (Al Ghamdi, 2020; Kokotkin et al., 2019).

Perineal rupture can cause postpartum complications after the fetus is born or is outside the uterus. Complications that occur are bleeding that often causes death if not treated immediately. In several studies, it is proven that the perineal tear causes the wound to heal longer. Therefore, intervention is needed that can prevent perineal rupture (Boushra and Rahman, 2021)

Third and fourth degree perineal rupture can occur during vaginal delivery and extend to the anal sphincter muscle and rectal mucosa or commonly known as OASIS (Obstetric Anal Sphincter InjuryS). This can lead to complications such as fecal incontinence and sexual dysfunction and may even recur in subsequent pregnancies. Some women may delay future deliveries due to fear of repeated injury(Wormer et al., 2021).

In order to prevent perineal rupture, non-medical methods such as massage is one way that can be done. The technique of massaging the perineum during pregnancy or a few weeks before giving birth to increase hormonal changes that soften the connective tissue, so that the perineal tissue is more elastic and stretches more easily. Increased elasticity of the perineum will prevent the incidence of perineal tears and episiotomy(Aquino et al., 2020).

This technique can be performed once a day during the last few weeks of pregnancy in the perineal area. Perineum massage in addition to minimizing perineal tears, can also increase blood flow, soften the tissue around the mother's perineum and make all muscles related to childbirth elastic, including the vaginal skin. When all the muscles become elastic, the mother does not need to push too hard, just slowly, even if the process is smooth, tears in the perineum do not occur and the vagina does not need to be sutured (Ramar and Grimes, 2021).

Currently there are several studies that use coconut oil, olive oil, Vitamin E, Sweet almond oil, sunflower oil and grape seed as an ointment when doing perineal massage. However, there are still some problems such as bruising, irritation, infection, vaginal infections such as yeast, urinary tract infections or genital herpes. So it is necessary to look for other plants that have anti-microbial content, skin elasticity but can strengthen muscles and skin, and are useful in the reproductive system (Asiyah et al., 2018; Geng et al., 2016; Hajhashemi et al., 2018; McAvoy, 2013).

Gedi leaf (Albermochus Manihot) is one of the plants that are often consumed in Eastern Indonesia. Gedi leaves contain Vitamin A, Vitamin C, Collagen, Tannins, Saponins, Flavonoids, Iron, Alkaloids, Serotonin and Polyvenol. In several studies it was found that tannins, saponins, flavonoids and polyvenols contain anti-microbial and anti-oxidants which are supported by vitamin C. Vitamin A helps the reproductive system, cell division and growth. Iron increases the formation of hormones and connective tissue which is supported by the content of collagen. While serotonin functions as a relaxant, and wound healing (Irwani and Candra, 2016; Papodi, 2014; Rumoroy et al., 2019; Taroreh et al., 2017).

Based on the content possessed by gedi leaves (Albermochus Manihot) and their functions, this study aims to determine the content of this plant in its application to perineal massage

MATERIALS and METHODS

This quasi-experimental one group post test was conducted on primiparous women who gave birth normally at the Teminabuan Community Health Center, South Sorong Regency. The sample size was obtained by considering an unpaired 1-tailed t test, a type I error of 0.05, statistical power of 0.80, and an effect size of d=0.80. Using G*Power3 with consideration of 15% drop out so this study requires a total of 52 respondents, 26 respondents in each group.

Gedi leaf ointment (Albermochus Manihot) is made from gedi leaf powder that has been dried at 400C. The ethanol extract of gedi leaves was made by maceration. A total of 500 grams of gedi leaf powder was soaked in 3500 ml of 70% ethanol for 5 days with stirring every 6 hours, then filtered. The filtrate is then reused for a second maceration, then the extraction results are combined. The extract was concentrated using an evaporator at a temperature of 40°C until a thick extract was obtained. The results obtained from this thick extract were then weighed. The ethanolic extract of gedi leaves was formulated in the form of an ointment using HPMC base (hydroxy propyl methyl cellulose) with a concentration of 4% used.

The study was conducted from April to May 2020. The inclusion criteria in this study were mothers who were about to give birth normally, the interpretation of fetal weight < 3500 grams and the age of pregnant women < 35 years. Perineal massage using gedi leaf ointment (Albermochus Manihot) was performed for 15 minutes every day for 1 week on mothers from 35 weeks to 41 weeks of gestation. Evaluation is carried out when the mother is in labor. Data collection includes demographic forms and the proportion of perineal rupture. Statistical analysis using the Mann Whitney test.

RESULTS

A total of 48 eligible pregnant women were recruited in this study. as many as 24 respondents in each group. A total of 2 respondents were excluded from this study because they suffered from herpes and yeast infections in the vaginal area. Most of the respondents in both groups were at a low risk of childbirth, were multiparous and had never had a history of perineal rupture. The data are presented in table 1.

Table 1. Demographic data of the sample

	Experimental Group (n=24)		Control Group (n=24)	
Variable	n	%	n	%
Gestation Age				
Low Risk (20-35 th)	19	79,16	20	83,3
High Risk (<20 th atau > 25 th)	5	20,84	4	16,7
Gravida				
Primipara	2	8,3	1	4,17
Multipara	20	83,4	23	95,83
Grandemulipara	2	8,3	0	0
Perianal Rupture History				
Yes	1	4,17	7	29,17
No	23	95,83	17	70,83

Table 2. Statistical test of the effectiveness of Albermochus Manihot on the incidence of perineal rupture

Variable	Z	p-value
Rupture Perineal	-2.299	0.021*

*Based on the Mann Whitney test.

DISCUSSION

This study is a quasi-experimental study which aims to determine the effect of Albermochus Manihot extract ointment to prevent perineal rupture. Based on the results obtained, Albermochus Manihot ointment which was implemented during perineal massage was able to prevent perineal rupture during labor. Our study differs from previous studies which focused solely on labor pain (Akhlaghi et al., 2019; Meo, 2020; Raja et al., 2019).

Previous studies suggested that antenatal perineal massage had no effect on the incidence of intact perineum at delivery, postnatal continence scores, anal manometric pressure, or endoanal ultrasound findings. Several studies also state that Kegel exercises can prevent perineal rupture compared to antenatal perineal massage (Dönmez and Kavlak, 2015; Ferreira-Couto et al., 2017; Idaman et al., 2020)

When interpreting the results of these previous studies, only use coconut oil ointment, olive oil, Vitamin E, Sweet almond oil, sunflower oil and grape seed (Asiyah et al., 2018; Bata et al., 2021; Geng et al., 2016; Hajhashemi et al., 2018; McAvoy, 2013). The content of Albermochus Manihot is very complete to make the skin more supple and elastic, regenerate skin and muscle cells and even prevent vaginal infections (Irwani and Candra, 2016; Norma and Supriatna, 2018; Papodi, 2014; Rumoroy et al., 2019; Taroreh et al., 2017). We use a 4% concentration of HPMC (hydroxy propyl methyl cellulose) ointment base so that it is quickly absorbed by the skin pores and becomes fibroblasts so that it can strengthen skin and muscle tissue.

The risks that usually occur when using perineal massage using ointment in previous studies such as infection can be prevented when we use Albermochus Manihot extract. This is because Albermochus Manihot contains Vitamin A, Vitamin C, Collagen, Tannins, Saponins, Flavonoids, Iron, Alkaloids, Serotonin and Polyvenol which can act as anti-microbial and anti-oxidant. So even if it is inserted into the vagina during perineal massage, it will not cause fungal or bacterial infections.

CONCLUSIONS

Based on the findings of this study, the use of Albermochus Manihot ointment was associated with a reduced risk of perineal rupture. Therefore, more clinical trials are needed to support our findings. The findings of this study can encourage and stimulate researchers to design and conduct similar clinical trials with the use of Albermochus Manihot ointment on a wider scale.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of interest

The authors declare that they have no competing interests.

Funding

Health Polytechnic of Health Ministry Sorong, Indonesia

REFERENCES

1. Akhlaghi, F., Sabeti Baygi, Z., Miri, M., Najaf Najafi, M., 2019. Effect of Perineal Massage on the Rate of Episiotomy. J Family Reprod Health 13, 160–166.
2. Al Ghamdi, D.S., 2020. A retrospective study of the incidence and predisposing factors of third- and fourth-degree perineal tears. Saudi Med J 41, 1241–1244. https://doi.org/10.15537/smj.2020.11.25498
3. Aquino, C.I., Guida, M., Saccone, G., Cruz, Y., Vitagliano, A., Zullo, F., Berghella, V., 2020. Perineal massage during labor: a systematic review and meta-analysis of randomized controlled trials. J Matern Fetal Neonatal Med 33, 1051–1063. https://doi.org/10.1080/14767058.2018.1512574
4. Asiyah, N., Risnawati, I., Khoirunnisa', F.N., 2018. Effectiveness of Virgin Coconut Oil and Virgin Olive Oil on Perineal Laceration. KEMAS: Jurnal Kesehatan Masyarakat 13, 396–403. https://doi.org/10.15294/kemas.v13i3.11076
5. Bata, V.A., Astuti, V.I., Mustamu, A.C., 2021. KEPUASAN SAAT PELAKSANAAN PERSALINAN. Jurnal Ilmu Keperawatan Jiwa 4, 487–494.
6. Boushra, M., Rahman, O., 2021. Postpartum Infection, in: StatPearls. StatPearls Publishing, Treasure Island (FL).

7. Dönmez, S., Kavlak, O., 2015. Effects of Prenatal Perineal Massage and Kegel Exercises on the Integrity of Postnatal Perine. Health 7, 495–505. https://doi.org/10.4236/health.2015.74059
8. Ferreira-Couto, C.M., Fernandes-Carneiro, M. do N., Ferreira-Couto, C.M., Fernandes-Carneiro, M. do N., 2017. Prevención del trauma perineal: una revisión integradora de la literatura. Enfermería Global 16, 539–575. https://doi.org/10.6018/eglobal.16.3.252131
9. Geng, H., Yu, X., Lu, A., Cao, H., Zhou, B., Zhou, L., Zhao, Z., 2016. Extraction, Chemical Composition, and Antifungal Activity of Essential Oil of Bitter Almond. Int J Mol Sci 17, E1421. https://doi.org/10.3390/ijms17091421
10. Gundabattula, S.R., Surampudi, K., 2018. Risk factors for obstetric anal sphincter injuries (OASI) at a tertiary centre in south India. Int Urogynecol J 29, 391–396. https://doi.org/10.1007/s00192-017-3398-0
11. Hajhashemi, M., Rafieian, M., Rouhi Boroujeni, H.A., Miraj, S., Memarian, S., Keivani, A., Haghollahi, F., 2018. The effect of Aloe vera gel and sweet almond oil on striae gravidarum in nulliparous women. J Matern Fetal Neonatal Med 31, 1703–1708. https://doi.org/10.1080/14767058.2017.1325865
12. Huber, M., Malers, E., Tunón, K., 2021. Pelvic floor dysfunction one year after first childbirth in relation to perineal tear severity. Sci Rep 11, 12560. https://doi.org/10.1038/s41598-021-91799-8
13. Idaman, M., Darma, I.Y., Amna, F.A., 2020. THE DIFFERENCE RESULT OF PERINEAL MASSAGE AND KEGEL EXERCISES TOWARD PREVENTING OF PERINEAL LACERATION DURING LABOR. Proceeding International Conference Syedza Saintika 1.
14. Irwani, N., Candra, A.A., 2016. Ekstrak Daun Gedi (Abelmoschus manihot) pada Ayam Broiler. Prosiding Seminar Nasional Pengembangan Teknologi Pertanian. https://doi.org/10.25181/prosemnas.v0i0.490
15. Jansson, M.H., Franzén, K., Hiyoshi, A., Tegerstedt, G., Dahlgren, H., Nilsson, K., 2020. Risk factors for perineal and vaginal tears in primiparous women - the prospective POPRACT-cohort study. BMC Pregnancy Childbirth 20, 749. https://doi.org/10.1186/s12884-020-03447-0
16. Kokotkin, I., Sedgwick, P., Nygaard, C., Doumouchtsis, S., 2019. IMPACT OF EPISIOTOMY ON THE INCIDENCE OF OBSTETRIC ANAL SPHINCTER INJURIES (OASIS): A RETROSPECTIVE STUDY. Neurourology and Urodynamics.
17. McAvoy, B.R., 2013. No evidence for topical preparations in preventing stretch marks in pregnancy. Br J Gen Pract 63, 212. https://doi.org/10.3399/bjgp13X665431
18. Meo, M.L.N., 2020. Antepartum Perineal Massages is Effective to Prevent Intrapartum Perineal Rupture: Indonesian Journal of Obstetrics and Gynecology 258–261. https://doi.org/10.32771/inajog.v8i4.1156
19. Norma, N., Supriatna, A., 2018. Pengaruh Teknik Relaksasi Otot Progresif Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi Di Puskesmas Mariat Kabupaten Sorong. Nursing Arts 12, 31–35. https://doi.org/10.36741/jna.v12i1.71
20. Papodi, N.N., 2014. PENGARUH EKSTRAK DAUN GEDI (Abelmoschus manihot L.) TERHADAP GAMBARAN HISTOPATOLOGI AORTA TIKUS WISTAR DENGAN DIET ATEROGENIK. e-Biomedik 2. https://doi.org/10.35790/ebm.v2i1.4043
21. Raja, A., P, P., Samal, R., 2019. Effect of perineal massage in the second stage of labour, on the incidence of episiotomy and perineal tears. International Journal of Reproduction, Contraception, Obstetrics and Gynecology 8, 1387–1392. https://doi.org/10.18203/2320-1770.ijrcog20191186
22. Ramar, C.N., Grimes, W.R., 2021. Perineal Lacerations, in: StatPearls. StatPearls Publishing, Treasure Island (FL).
23. Rumoroy, J.D., Sudewi, S., Siampa, J.P., 2019. ANALISIS TOTAL FENOLIK DAUN GEDI HIJAU (Abelmoschus manihot L.) DENGAN MENGGUNAKAN SPEKTROSKOPI FTIR DAN KEMOMETRIK. PHARMACON 8, 758–766. https://doi.org/10.35799/pha.8.2019.29402
24. Taroreh, M., Rahardjo, S., Hastuti, P., Murdiati, A., 2017. Ekstraksi Daun Gedi (Abelmoschus manihot L) Secara Sekuensial dan Aktivitas Antioksidannya. agriTECH 35, 280–287. https://doi.org/10.22146/agritech.9338
25. Wormer, K.C., Jamil, R.T., Bryant, S.B., 2021. Acute Postpartum Hemorrhage, in: StatPearls. StatPearls Publishing, Treasure Island (FL).

26. Xiao, L., Shi, L., Liu, S., Luo, Y., Tian, J., Zhang, L., 2021. A core outcome set for clinical trials of first- and second-degree perineal tears prevention and treatment: a study protocol for a systematic review and a Delphi survey. Trials 22, 843. https://doi.org/10.1186/s13063-021-05820-6