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TABLE OF CONTENTS

BIOLOGICAL SCIENCES

1. *Гладунська А. Ю., Киричук Г. Є., Музика Л. В.* 13
ВМІСТ ЛІПІДІВ В ТКАНИНАХ І ОРГАНАХ СТАВКОВИКА
ЗВИЧАЙНОГО ЗА ДІЇ ВИСОКОЇ КОНЦЕНТРАЦІЇ СЕЧОВИНИ
2. *Кременська Л. В., Криклива С. Д.* 18
ІНТРОДУЦЕНТИ УРБАНОЗОНИ ВІННИЦІ

MEDICAL SCIENCES

3. *Beniuk V. O., Lastovetska L. D., Shcherba O. A., Kovaliuk T. V.,
Venzovka Yu. V., Thadayoose Mary Fiona* 24
EPISIOTOMY AS VAGINAL SURGERY DURING CHILDBIRTH
4. *Botsul O.* 34
INDICATORS OF PAIN AND SYMPTOMS WHEN USING
WHARTON'S JELLY STEM CELLS IN PATIENTS WITH KNEE
OSTEOARTHRITIS
5. *Haydash I. S., Patalakha O. V., Yevtushenko Yu. O.,
Kovalenko D. Yu.* 39
PHAGOCYTIC ACTIVITY OF NEUTROPHILS AND MONOCYTES
IN PATIENTS WITH CHRONIC PERIODONTITIS IN THE
EXACERBATION PHASE, DEPENDING ON THE PRESENCE OF
COMPLICATED
6. *Lytvynenko O. O., Lytvynenko O. O., Demianov V. O.* 45
BREAST CANCER AND COMORBID DISEASES OF THE
THYROID GLAND IN PATIENTS, WHO SUFFERED FROM THE
CHORNOBYL ACCIDENT
7. *Lytvynenko O. O., Lytvynenko O. O., Demianov V. O.* 52
CHEMOTHERAPY-INDUCED LIVER DAMAGE
8. *Rasbergenov A. A., Adilbekova D. B.* 58
MORPHOLOGICAL STATE OF THE SMALL INTEST IN RATS
BORN UNDER THE CONDITIONS OF EXPERIMENTAL
DIABETES MELLITUS IN THE MOTHER
9. *Vatseba B. R., Vasylechko M. M., Chovhaniuk O. S.,
Kocherzhat O. I., Haman I. O.* 61
SOMATIC ASPECTS OF POST-TRAUMATIC STRESS DISORDER
PTSD
10. *Адамів С. С., Деньга А. Е.* 66
ВПЛИВ ПРОФІЛАКТИКИ НА БІОФІЗИЧНІ ПОКАЗНИКИ
РОТОВОЇ РІДИНИ ТА ТКАНИН ПАРОДОНТУ У ПІДЛІТКІВ ІЗ
ГІНГІВІТОМ В ПРОЦЕСІ ОРТОДОНТИЧНОГО ЛІКУВАННЯ
11. *Бережна В. С., Марченко А. С., Журавльова А. К.* 73
НЕГАТИВНИЙ ВПЛИВ ГЕПАРИНОТЕРАПІЇ НА ПОКАЗНИКИ
ЗГОРТАННЯ КРОВІ

MEDICAL SCIENCES

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EPISIOTOMY AS VAGINAL SURGERY DURING CHILDBIRTH

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Abstract: Excessive use of episiotomy is still a significant problem of Ukrainian obstetrics. The article presents a literature review, meta-analyses and results of individual studies on the use of this procedure in modern conditions. The analysis showed that in modern obstetrics, episiotomy has not yet lost its relevance. However, conventional episiotomy is associated with higher rates of severe perineal injury and wound complications. Thus, for women who give birth vaginally, it is recommended to abandon the routine performance of an episiotomy. The decision to perform an episiotomy is made on an individual or limited basis.

Keywords: episiotomy, perineal injury, indications, methods, complications.

Birth trauma of the perineum is an urgent problem of modern obstetrics. It includes damage to the skin, perineal muscles, as well as the anal sphincter and anal

epithelium during childbirth, the prevalence of such injuries does not decrease and is 0.25–6%, among first births – 1.4–16%, repeat births – 0.4–2.7% [1, p. 913]. One of the methods of preventing severe birth trauma to the perineum is episiotomy. Excessive use of episiotomy is still a significant problem of Ukrainian obstetrics. The lack of consensus among medical professionals prompted us to study the state of this problem.

An episiotomy is a surgical procedure for dilating the vaginal opening by cutting the perineum during the second period of Labor to speed up and facilitate fetal delivery during vaginal delivery [2, p. 81].

The World Health Organization (WHO) recommended an episiotomy rate of 10% in 1996[2]. Since the adoption of this recommendation, the frequency of episiotomies in the world as a whole has decreased. In Canada, the frequency of episiotomy decreased in both surgical and spontaneous vaginal births (from 53% to 43% and from 13.5% to 6.5%, respectively, from 2004 to 2017), while in the United States, the frequency of episiotomy decreased from 17.3% in 2006 to 5.2% by 2020 [3, p. 197, 4, p. 1149, 5, 349].

Nowadays, there is more and more information that the routine use of episiotomy is no longer recommended due to the lack of an objective evidence base (degree of evidence 1B) that confirms the benefit or determines the criteria for its use and due to the increase in the number of complications associated with the use of this procedure [6, p. 81, 7, p. 88].

So, in a meta-analysis of 12 studies in which 5375 women were examined, compared the use of episiotomy according to indications with routine use in women waiting for vaginal delivery without the help of a doctor's surgical help, described that limited use of episiotomy reduced the number of women who experienced severe perineal or vaginal injury by 30% (odds ratio (OR) 0.70, 95% DI 0.52-0.94). In the present study, there were no differences between the groups in terms of perineal pain and postnatal day, as well as long-term (>6 months) dyspareunia, urinary incontinence, and genital prolapse [7, p. 88].

Historical data indicate that the routine use of episiotomy had several

advantages; however, current evidence for the effectiveness of this method in routine use does not support these judgments [8, p. 136, 9, p. 61, 10, p. 6, 11, p. 94, 12, p. 192, 13, p. 357, 14, p. 408], namely:

1) Reduction of intranatal injuries to the fetal head. Previously, episiotomy was recommended to reduce the risk of intraventricular bleeding during preterm labor, but to date, there is no evidence that this intervention is effective on a routine basis.

2) Speed of wound healing and recovery of the woman in labor. Historically, there have been judgments that a surgical incision is easier to control and therefore restore tissue integrity by suturing the wound, and such a repair would be anatomically correct compared to spontaneous rupture, and therefore possibly lead to a reduction in long-term complications. In the absence of dilated episiotomy, an episiotomy incision is easier to repair than most uneven spontaneous second-degree deep ruptures. However, there is insufficient data showing improvements in long-term episiotomy outcomes.

3) Protection of pelvic floor muscles and fascial fixation. Episiotomy does not guarantee protection for pelvic floor strength and can lead to weakening of the pelvic floor muscles compared to spontaneous rupture. In addition, neither median nor mediolateral epiziotomies protect against future urinary or fecal incontinence compared to spontaneous vaginal delivery.

4) Prevention of anal sphincter rupture. There is a widespread debate about whether median episiotomy is not effective for this purpose and, in fact, it is also associated with an increase in the frequency of severe perineal ruptures (Grade III and IV).

In another meta-analysis of 22 observational studies conducted in 2014, involving more than 651,000 women, 2.4% of them with severe ruptures, median epiziotomy was associated with an almost fourfold increase in the risk of third - or fourth-degree perineal ruptures (OR 3.82, 95% CI 1.96-7.42), but mediolateral epiziotomy did not increase the risk (OR 1.72, 95% CI 0.81-3,65) [15, 1688, 16, p. 1275].

A 2020 meta-analysis involving 43 studies and 716,000 women (3.1% of them

with severe perineal ruptures) reported an increased risk of anal sphincter rupture in median episiotomy (or 2.88, 95% CI 1.79-4.65), but not in mediolateral episiotomy (or 1.55, 95% CI 0.95-2.53). Mediolateral episiotomy was not protective, but in turn was not associated with an increased risk [17, p. 30].

However, the 2019 publication, which reviews data obtained on the basis of studies conducted after 2000, confirms the more free use of lateral or mediolateral episiotomy, in particular in operative vaginal delivery, to reduce anal sphincter ruptures [18, p. 351].

5) Prevention of fetal shoulder dystocia. A systematic review of 14 studies that included more than 9,700 cases of fetal shoulder dystocia shows that only one study evaluated the effect of episiotomy on preventing fetal shoulder dystocia, and its outcome was not significant. Based on this information, it follows that episiotomy does not prevent fetal shoulder dystocia [19, p. 980].

When considering using an episiotomy, you should consider the potential benefits and possible side effects, such as: spontaneous incision dilation leading to third- and fourth-degree ruptures, especially in median episiotomy; risk of unsatisfactory anatomical results (for example, skin marks, asymmetry, fistulas, narrowing of the vaginal opening); increased blood loss; increased risk of infection and degeneration; increased risk of severe perineal rupture during subsequent Labor [16, p. 1276, 17, p. 31].

Despite the fact that the use of episiotomy in modern obstetrics is limited, there are cases when it should be considered. The vast majority of modern researchers believe that the decision on the expediency of this surgical procedure should be based on the clinical picture of the woman in labor and the opinion of the obstetrician-gynecologist taking delivery. It is also indicated that there are no special circumstances that require episiotomy. If the doctor is convinced that the expansion of the birth canal will facilitate labor and be useful for the mother or child, and ensures that the indications for episiotomy outweigh the risks, then episiotomy is recommended [16, p. 1276, 17, p. 32, 18, p. 351, 19, p. 980].

Here are the main examples of the feasibility of performing this operation:

1. The need for rapid delivery. Episiotomy may be recommended in situations where accelerated delivery of the fetus is desirable during the second period of labor, for example, when the fetal heart rate shows pathological changes in Category III during cardiotocography, but the perineal tissue is an obstacle to fetal birth.

2. Vaginal delivery with the use of auxiliary means. Episiotomy is recommended to be used to facilitate the placement of forceps or a vacuum extractor in women with a narrow vaginal outlet. In contrast to historical recommendations, many modern scientific societies point to the benefits of eliminating mandatory episiotomy during operative vaginal delivery. It is indicated that the decision to perform it during vaginal delivery using auxiliary means remains at the discretion of the doctor. It is not recommended to perform a median episiotomy during operative vaginal delivery, as it triples the risk of anal sphincter injury. Also, according to observations, delivery using forceps has a higher level of damage to the anal sphincter compared to delivery using vacuum extraction of the fetus, and the benefit of mediolateral or lateral episiotomy prevails.

3. Fetal shoulder dystocia. There are claims that in some cases of fetal shoulder dystocia, episiotomy can increase the space for manipulation by the doctor's hands and, thus, facilitate the removal of the posterior shoulder, but does not prevent shoulder dystocia and does not release the anterior fetal shoulder. Current literature sources indicate that routine use of episiotomy to treat fetal shoulder dystonia is not recommended until more data are obtained from randomly distributed studies to determine the balance of benefit and harm.

4. Circumcision of the female genital organs in the anamnesis (labia majora and labia minora and clitoris). Women with female genital circumcision are more likely to need or at least doctors are considering an episiotomy during labor, especially with Type III infibulation. the degree or type of female circumcision can lead to a significant narrowing of the vaginal opening or even the formation of a tissue membrane that overlaps. This can complicate, limit, or completely eliminate the possibility of vaginal examinations during labor; lead to soft tissue dystocia

during labor. Patients after circumcision of the female genital organs have an increased risk of anterior vaginal, labial or urethral ruptures during childbirth. For these women, episiotomy can be anterior, standard posterior, or both (a combination of incisions) [16, p. 1276, 17, p. 32, 18, p. 351, 19, p. 980].

To choose the incision method, it is important to consider their risks and benefits. Such types of episiotomy as medial and mediolateral are most widely used [17, p. 32]. Other incisions are less common and include the JsN-shaped type, as well as lateral and anterior incisions [16, p. 408].

Median episiotomy begins within 3 mm of the midline of the posterior commissure and continues down from 0 to 25 degrees of the sagittal plane. Median episiotomy is more commonly performed in the United States of America [17, p. 33].

Mediolateral or medieval episiotomy begins within 3 m of the midline of the posterior commissura and is directed laterally at an angle of at least 60 degrees from the midline to the sciatic protuberance. Mediolateral episiotomy is mainly used in European countries [17, p. 33].

The J-section is less common. The incision also starts from the posterior commissura, first expanding longitudinally along the midline, and then bending from the side at an angle similar to the letter J. Anatomical structures are cut, including the vaginal epithelium, the base of the perineum and the junction of the base of the perineum with the bulbous-cavernous muscle, and the skin of the perineum. This method is actually a combination of previous methods and can combine their advantages and reduce their disadvantages, but there is no data confirming the advantage of using this method [18, p. 751].

There are various modifications to the above methods, which may be preferred by practitioners depending on personal experience [19, p. 979]:

T-episiotomy is a modification of median episiotomy in which bilateral cross-sections are made at the lower apex to create an inverted T-shaped incision. This procedure increases the area of the vaginal opening more than just a median episiotomy.

The lateral episiotomy also has a mediolateral angle as a basis, but the incision

occurs between 7-8 hours or 4-5 hours, and not in the traditional position at 6 hours. Such changes are aimed at reducing the risks associated with the intended mediolateral, in the final form, this technique becomes more similar to median episiotomy during suturing.

Anterior episiotomy is described as deinfibulation (or defibulation). It is indicated only in the case of previous female circumcision. The fused labia minora is cut along the midline towards the pubis to open the external passage of the urethra. It is not recommended to cut the remains of the clitoris.

Median episiotomy compared to mediolateral episiotomy has a number of disadvantages described in modern randomized trials. According to the World Health Organization (WHO), mediolateral episiotomy is preferred because it does not increase the risk of anal sphincter rupture (grade III and IV pathological obstetric ruptures), in contrast to median episiotomy [6, p. 82, 16, p. 1275]. To limit anal sphincter rupture, the Royal College of Obstetricians and Gynecologists (RCOG) recommends a mediolateral incision during an episiotomy, and the American College of Obstetricians and Gynecologists states that mediolateral episiotomy may be better than median episiotomy in some cases. The RCOG recommends considering a medial lateral episiotomy during instrumental labor, as this may have a protective effect [17, p. 31].

The choice of median and medial lateral episiotomy balances the risks of the two methods. Median episiotomy is associated with a higher risk of anal sphincter rupture than mediolateral episiotomy (evidence grade 2C) [16, p. 1276]. Mediolateral episiotomy is associated with increased blood loss [17, p. 28]. In addition, mediolateral episiotomy has historically been thought to lead to increased perineal pain and dyspareunia. However, despite conflicting data, there is evidence that there are no differences in pain outcomes between the two treatments. There are references in the literature to a study reporting the occurrence of more severe pain in women with a mediolateral episiotomy performed by a 60-degree incision from the median line, compared to women who had an episiotomy cut 40 degrees from the median line. This may have contributed in part to the different results of the study, as other

factors also have an impact. It should be noted that the anal sphincter injury itself was associated with increased perineal pain [16, p. 1275, 17, p. 32].

It should also be noted common complications associated with episiotomy [9, p. 7]: infection; hematoma; perineal ruptures of the third and fourth degree; cellulite; degiscence; abscess; dyspareunia; altered sexual function; postpartum pain in the perineum; incontinence: urine, feces, gases; rectovaginal fistula; genital nerve conduction disorders; necrotic fasciitis.

Therefore, delivery resolution using episiotomy may be useful in certain clinical situations. The decision on whether to perform an episiotomy largely depends on the clinical picture in the second period of Labor and the opinion of the obstetrician-gynecologist taking delivery. There are no specific situations in which an episiotomy is necessary. Cases in which this procedure may be useful include the need for accelerated vaginal delivery, surgical delivery solutions using vacuum extraction and obstetric forceps, and fetal shoulder dystocia [19, p. 980].

Conclusions

The analysis showed that episiotomy has not lost its relevance in modern obstetrics. However, conventional episiotomy is associated with higher rates of severe perineal injury and wound complications. Thus, for women who give birth vaginally, it is recommended to abandon the routine performance of an episiotomy. The decision to perform an episiotomy is made on an individual or limited basis.

LIST OF REFERENCES

1. Thubert T, Cardaillac C, Fritel X, Winer N, Dochez V. Definition, epidemiology and risk factors of obstetric anal sphincter injuries: CNGOF Perineal Prevention and Protection in Obstetrics Guidelines. *GynecolObstetFertilSenol*. 2018;46(12):913-21.
2. Carroli G, Mignini L. Episiotomy for vaginal birth. *Cochrane Database Syst Rev* 2009Jan 21:(1):CD000081. doi: 10.1002/14651858.CD000081.pub2.
3. Friedman AM, Ananth CV, Prendergast E, et al. Variation in and factors associated with use of episiotomy. *JAMA* 2015;313(2):197-9.

4. Muraca GM, Liu S, Sabr Y, et al. Episiotomy use among vaginal deliveries and the association with anal sphincter injury: a population-based retrospective cohort study. *CMAJ* 2019; 191(42): E1149–E1158.
5. National Institute for Health and Care Excellence. Intrapartum care for healthy women and babies. NICE Guidelines[CG190], National Institute for Health and Care Excellence, 2014; 349:g6886.
6. Jiang H, Qian X, Carroli G, Garner P. Selective versus routine use of episiotomy for vaginal birth. *Cochrane Database Syst Rev* 2017;2(2):CD000081. doi: 10.1002/14651858.CD000081.pub3.
7. Committee on Practice Bulletins-Obstetrics. ACOG Practice Bulletin No. 198: Prevention and Management of Obstetric Lacerations at Vaginal Delivery. *ObstetGynecol* 2018;132(3):e87-e102.
8. Okusanya BO, Oduwole O, Nwachuku N, Meremikwu MM. Deinfibulation for preventing or treating complications in women living with type III female genital mutilation: A systematic review and meta-analysis. *Int J GynaecolObstet* 2017;136 Suppl 1:13-20.
9. Klein MC, Gauthier RJ, Jorgensen SH, et al. Does episiotomy prevent perineal trauma and pelvic floor relaxation. *Online J CurrClin Trials* 1992;Doc No 10:[6019 words; 65 paragraphs].
10. Pergialiotis V, Vlachos D, Protopapas A, et al. Risk factors for severe perineal lacerations during childbirth. *Int J Gynaecol Obstet* 2014;125(1):6-14.
11. Pergialiotis V, Bellos I, Fanaki M, et al. Risk factors for severe perineal trauma during childbirth: An updated meta-analysis. *Eur J ObstetGynecol ReprodBiol* 2020; 247:94-100.
12. Sultan AH, Thakar R, Ismail KM, et al. The role of mediolateral episiotomy during operative vaginal delivery. *Eur J ObstetGynecolReprodBiol* 2019;240:192-196.
13. Sagi-Dain L, Sagi S. The role of episiotomy in prevention and management of shoulder dystocia: a systematic review. *ObstetGynecolSurv* 2015; 70(5):354-62.

14. van Bavel J, Hukkelhoven CWPM, de Vries C, et al. The effectiveness of mediolateral episiotomy in preventing obstetric anal sphincter injuries during operative vaginal delivery: a ten-year analysis of a national registry. *Int Urogynecol J* 2018; 29(3):407-413.
15. Macleod M, Strachan B, Bahl R, et al. A prospective cohort study of maternal and neonatal morbidity in relation to use of episiotomy at operative vaginal delivery. *BJOG* 2008;115(13): 1688-94.
16. Alperin M, Krohn MA, Parviainen K. Episiotomy and increase in the risk of obstetric laceration in a subsequent vaginal delivery. *ObstetGynecol* 2008; 111(6):1274-8.
17. Fitzgerald MP, Weber AM, Howden N, et al. Risk factors for anal sphincter tear during vaginal delivery. *ObstetGynecol* 2007; 109(1):29-34.
18. Kudish B, Blackwell S, Mcneeley SG, et al. Operative vaginal delivery and midline episiotomy: a bad combination for the perineum. *Am J ObstetGynecol* 2006; 195(3):749-54.
19. Gayle C, Rymer J. Female genital mutilation and pregnancy: associated risks. *Br J Nurs* 2016; 25(17):978-983.