



Original research article

## Postoperative management of postpartum perineal tears

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## ABSTRACT

**Background:** Postoperative care for women with perineal trauma after post birth per vias naturaeles vaginal delivery, is needed. We studied the effect of Theresienol - an natural product based on natural fats and pure herbal extracts on some of the short-term complications in cases of postpartum perineal tear. Theresienol is an all natural revolutionary skin care serum that works naturally with your body. It is a multi-purpose natural Skin Protectant serum for all skin types, all ages and all stages.

**Methods:** In a prospective, single-centre, cohort study conducted on 20 women with per vias naturales birth, with perineal trauma, we studied the effect of topical application of Theresienol surgically recovered tear. Patients were divided into two groups, Group A and Group B; Group A included birth mothers using Theresienol postnatally for treatment of surgically recovered wounds, Group B included patients not using the oil. The visual analogue scale (VAS) for pain was used on Group A, third and fifth day after birth. The primary outcome was reducing severity or lacking of some short-term complications, defined as lack of wound dehiscence and hematoma and reducing pain, swelling and redness in this area. The secondary outcome was the additional need of nonsteroidal anti-inflammatory drugs for analgesia in the early postpartum period.

**Results:** In Group A, using Theresienol natural oil, there was a reduction in pain symptoms in comparison to Group B, not using the oil. In the study group using herbal oil, Group A, no additional nonsteroidal anti-inflammatory drugs were needed compared to the group B, not using the oil.

**Conclusions:** Local therapy with Theresienol - an natural product based on natural fats and pure herbal extracts in the postoperative management of postpartum perineal tears significantly reduces the severity of clinical symptoms, and further monitoring and inclusion of new patients will show whether the risk of objective short-term and long-term complications is reduced.

### 1. Introduction

Perineal trauma is any injury to the genitals during childbirth which occurs spontaneously or intentionally through a surgical incision (episiotomy). Anterior perineal trauma includes injury to the labia, anterior vaginal wall, urethra and clitoris, and is usually associated with milder morbidity rate. Posterior perineal trauma includes injury to the posterior vaginal wall, perineal muscles and anal sphincter [1].

More than 85% of women giving a normal birth experience perineal trauma [2] - spontaneous perineal tear, episiotomy or both. The incidence of spontaneous and iatrogenic tears decreases in subsequent births, from 90.4% of first-birth women to 68.8% for multipara giving normal birth [7].

Perineal trauma occurs during spontaneous or assisted vaginal birth and is usually bigger in first vaginal birth [3]. Other associated risk factors may be divided into three groups - maternal, fetal and intrapartum risk factors [4].

Perineal trauma may lead to long-term physical, physiological, social and psychological problems immediately after birth and in the long term. The complications depend on the severity of the trauma and the effectiveness of its treatment.

Treatment of short-term complications includes identification of the injury, good surgical treatment and recovery, application of analgesics in the early postpartum period and care for the perineum. We present our experience with a new natural product based on natural fats and pure herbal extracts (Theresienol) that we used in 10 women. We compared the effect of its topical application with a group of 10 women who did not use the oil. Suturing in all women in both groups was carried out with resorbable sutures as we tried to determine the effect of medication on the symptoms and the recovery in the early postpartum period.

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## 2. Methods

From 1 January 2019 to 31 March 2019, in the clinic of obstetrics and gynecology at the UMPHAT “Dr. Georgi Stranski”, Pleven, there were 287 births, 104 of them with caesarean section and 183 births per vias naturales. The incidence of perineal trauma in normal births is 79%. In all women the tear was recovered with resorbable sutures, and they received hygiene advices. Our study included 20 women who have undergone vaginal delivery with postpartum perineal tear during this period. In eight of the patients, the tear was iatrogenic - episiotomy, and twelve had a spontaneous perineal tear of second degree. In six of the patients, the tear was recovered by single sutures, and in fourteen of them the defect was recovered through the method of continuous suturing – the vaginal tear was sutured at a single level and the perineum at two levels. Resorb able sutures were used in all patients. Immediately after birth and the recovery of the perineum, all patients experienced swelling, erythema and pain in the area of the trauma. All patients were explained how to take care their genitalia during the postpartum period. No antibiotic prophylaxis was performed.

Women were divided into two groups of 10 people. In the first group (group A), treatment with TheresienOl (natural oil) started on the second hour after birth with a frequency of three times a day. The application was by topical rubbing of the oil on the affected area slowly (over a period of 30–60 s) after the genital dressing. In the other group (group B), no topical preparations were used. Pain symptomatology was assessed with a visual analogue scale (VAS) for pain (Table 1) on the first, third and fifth day after birth. The subjective assessment of patients for relieving of the pain, redness and swelling in the area of the trauma was also taken account of. Patients were also objectively monitored for dehiscence and hematoma in the study groups. Monitoring continued until the 10th postpartum day.

## 3. Results

The primary outcome was reducing severity or lacking of some short-term complications, defined as lack of wound dehiscence and hematoma and reducing pain, swelling and redness in this area in the study groups of women over a period of 10 days. The secondary outcome was the need to use additional analgesia with non-steroidal anti-inflammatory drugs.

Using the VAS in both monitored groups, it was established that pain sensations in Group A - with TheresienOl - was reduced in comparison to pain sensations in Group B - without topical application. On day one, pain severity in Group A was between 4 and 7, and pain severity in Group B varied between 6 and 9. On the third postpartum day in Group A, pain symptoms were evaluated by VAS and were between 3 and 6, and in Group B the results were in the range of 5 to 7. On the fifth day of monitoring, VAS-evaluated results were similar - in the group

with topical application of TheresienOl from 2 to 4 and in the control group from 2 to 5. In the course of our study, we established a significant reduction of pain in the affected area in the group with topical application of TheresienOl - an natural product based on natural fats and pure herbal extracts in comparison with the control group – without topical application of medications.

The pain in all patients included in Group A of the study is affected immediately after the administration of TheresienOl - there is a topical analgesic effect. During the monitoring period, there was a reduction in swelling and erythema in the affected area. After the 2nd - 3rd postpartum day, the patients reported of a decrease in tenderness in the area of the sutures.

For the same period, there is no hematoma, infection, and dehiscence of recovered defects, and no side effects have been reported in both groups.

Monitored patients in Group A did not need additional analgesia with nonsteroidal anti-inflammatory drugs. The use of nonsteroidal anti-inflammatory drugs was necessary in 50% of Group B patients. No adverse effects as a result of the use of TheresienOl have been identified. The oil has a very good tolerance.

In addition, the maternal satisfaction, the psycho-emotional and psychological status was very good.

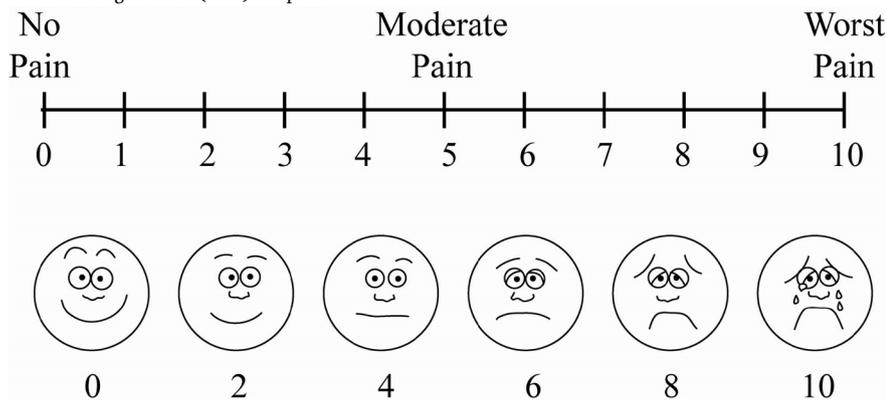
## 4. Discussion

The female perineum is a diamond-shaped structure located beneath the pelvic diaphragm, between the symphysis of the pubis and os coccyges. The perineum is divided into anterior urogenital triangle and posterior anal triangle. The vulva comprises women's external genitalia [5]. Perineal trauma includes any type of injury to female genital organs during childbirth which can occur spontaneously or iatrogenically– by a surgical incision (episiotomy) or instrumental birth [2]. During birth, the majority of the perineum traumas are on the posterior vaginal wall extending to the anus.

Genital traumas caused by tearing or episiotomy during normal birth are classified into four degrees. In the first degree, only the skin of the perineum is injured, the muscles are intact. The second degree of perineal trauma involves tearing of the muscles of the perineum without affecting the anal sphincter. The third degree of injury involves tearing of the anal sphincter and this degree is divided into: 3a – less than 50% of the thickness of the external anal sphincter is torn; 3b – more than 50% of the thickness of the external anal sphincter is torn; 3c – the internal anal sphincter is torn. In the fourth degree of perineum tear, there is a complex rupture of the anal sphincter which includes the external and the internal anal sphincter and the anal epithelium [6].

More than 85% of women giving a normal birth experience perineal trauma [2]. Fortunately, the incidence of spontaneous and iatrogenic tears decreases in subsequent births, from 90.4% of first-birth women to

**Table 1**  
Visual analogue scale (VAS) for pain.



68.8% for multipara giving normal birth [7].

In each vaginal birth, there is a risk for perineal trauma but it is particularly important to assess the presence of risk factors that contribute to the occurrence of severe perineal tears – third-and fourth-degree tear of the perineum. These factors may be divided into three groups - maternal, fetal and intrapartum factors [4]. The group of maternal factors associated with more severe tears includes nullipara, Asian ethnicity, vaginal birth after caesarean section, age of birth-giver over 25 years, shortened perineum – under 2.5 cm, abnormal collagen synthesis, high social and economic status [8,9]. The group of fetal associated factors includes large fetus - over 4000 g, shoulder dystocia, malpresentation and malposition of the fetus. Intrapartum risk factors associated with more severe birth traumas include instrumental birth (forceps, vacuum), prolonged second period of birth (over 60 min), epidural anesthesia, the use of oxytocin, medial episiotomy (perineotomy), position of the mother during childbirth (lithotomy and deep squatting position) [10].

Prevention of perineal tears involves several episodes. Episiotomy has long been preferred as a method of preserving the integrity of perineal muscles and avoiding injuries to the anal sphincter. For this reason, it has been widely used [11]. The purpose of episiotomy is to increase the diameter of the vaginal opening in order to facilitate the passage of the fetal head and to prevent extensive vaginal rupture [12]. There are seven types of episiotomy. Of these, only three are routinely used - medial, medial-lateral, and lateral. The exact orientation of the incision for episiotomy is very important with regard to perineal traumas. Lateralization of episiotomy significantly reduces cases of third-and fourth-degree tears, while medial episiotomy increases the risk of affecting the sphincters [13]. Currently, there is strong evidence that routine episiotomy is useless and should be abandoned as a practice [14]. The protective role of medial-lateral episiotomy depends on the correct identification of the risk group and the appropriate incision. The indications for application of episiotomy are a strong suggestion of a third or fourth-degree tear of the perineum, soft tissue dystocia, necessity of a quick birth because of fetal suffering, necessity to facilitate forthcoming operational vaginal birth [15,16].

The initial examination after birth should be performed with care and may be carried out immediately after birth. If genital trauma is detected as a consequence of birth giving, a systemic assessment, including rectal topical application, should be performed. The systemic assessment of trauma should include: woman's consent for effective local or regional anesthesia, visual evaluation of the area of the perineal trauma which includes visualisation of affected structures, top of the tear and assessment of bleeding. Rectal examination should be carried out to assess whether there is any injury the external or internal anal sphincter and if there is a suspected torn perineal muscle [17,18].

Regardless of the severity of the tears, it is necessary to follow several basic principles for recovery of the tears:

- It is necessary to perform a good assessment of the status under good illumination in lithotomy position
- The application of adequate anesthesia is necessary for performing the examination and for the recovery
- Each layer should be recovered independently so that its function can be adequately restored. Recovery should be done in cephalo-caudal direction
- Resorbable sutures with knots placed in each layer should be used. This reduces the risk of dyspareunia and vaginal discomfort during recovery [4]

In addition, Kettle et al found that resorbable synthetic suture materials are associated with weaker perineal pain and rare dehiscence of the wound compared to unresorbable materials. However, in most women with resorbable sutures, it is necessary to remove them [18]. Also, the continuous suturing technique compared to the single suture technique is associated with less short-term pain [19].

The application of broad-spectrum antibiotics in the immediate postoperative period is recommended to reduce the risk of infection and dehiscence of the wound [20]. The rectal administration of non-steroidal anti-inflammatory drugs (NSAIDs) should be used routinely for pain relief in the first 24 h after the intervention, if not contraindicated (NICE, 2007) [21]. The use of laxatives is recommended after recovery of perineal tear because the passage of faeces may lead to wound dehiscence. Two to three days after birth, when the patient feels ready, pelvic floor exercises should be started. Patients with third and fourth-degree tears should be directed to a physiotherapist who is a specialist in perineology [20]. A good dressing of the genitals should be provided - washing and drying. The patient should perform daily checks of the wound with a mirror for any signs of wound breakdown [4].

In the immediate postpartum period with recovered perineal trauma, the complications include pain, swelling, redness in the area of the surgical wound, dehiscence, hematoma, trauma of the urethra and the anal sphincter. Long-term effects include chronic infections, dyspareunia, anorectal dysfunction - faecal incontinence, urinary incontinence or retention [22]. 23%–43% of women continue to experience pain and discomfort in 10–12 postpartum days and 7%–10% of women have long-term pain 3–18 months after birth. 23% of women experience surface dyspareunia in the 3rd month, 3%–10% report of faecal incontinence, and 24% report of urinary problems. The complications depend on the severity of the perineal trauma and the effectiveness of subsequent treatment [22].

Our study included 20 patients with perineal trauma of the genital area during childbirth that has occurred spontaneously or intentionally through a surgical incision (episiotomy). These patients were divided into two groups – 50% in Group A with topical application of TheresienOl - an natural product based on natural fats and pure herbal extracts after recovery of the tear, and 50% in Group B - control group without topical application of medications. In all patients, the tears were second-degree, without affecting the muscles of the anus. In eight of the patients, the tear was recovered by single sutures and in twelve of them the defect was recovered through the method of continuous suturing – the vaginal tear was sutured at a single level and the perineum at two levels. Resorbable sutures were used in all patients. Immediately after birth and the recovery of the perineum, all patients experienced swelling, erythema and pain in the area of the trauma. All patients were explained how to take care of their genitalia during the postpartum period. No antibiotic prophylaxis was performed.

Treatment with TheresienOl (natural oil) in Group A began on the second hour after birth with a frequency of application - three times a day, and the monitoring in both groups continued until the 10th postpartum day.

The pain in all patients included in Group A of the study is affected immediately after the administration of TheresienOl - there is a topical analgesic effect. During the monitoring period of the two groups, the swelling and erythema in the affected area were reduced, which was better expressed in Group A. After the 2nd -3rd postpartum day, the patients from this group reported of reduction of the feeling of strain in the area of the sutures, and patients in Group B reported of unpleasant feeling of strain in the area of surgically recovered wound. During the monitoring period, there is no hematoma, infection, and dehiscence of recovered defects in both groups. No side effects of TheresienOl application in Group A were reported.

The management of perineal tears during childbirth and the early postpartum period with associated short-term complications may be divided into several successive stages -

1. Identification of the tear, 2. Proper restoration of the anatomical structure, 3. Reduction of any inflammatory complication; 4. Reduction and elimination of short-term complications.

The described medication acts by the following mechanisms: 1. Hydrates tissues; 2. Reduces bacterial invasion and inflammation; 3. Stimulates fibroblastic and endothelial cell migration and proliferation; 4. Stimulates epithelisation. Thus, it has an analgesic, antiseptic,

moisturizing and pain-relieving effect.

The weaknesses of our study are in the small number of patients. However, we believe that TheresienOl is an acceptable alternative for treatment of short-term complications of perineal trauma during childbirth and the collection of additional data will lead to even more convincing results.

## 5. Conclusion

Perineal trauma affects the physical, physiological, psychological and social wellbeing of women both in the immediate postnatal period as well as in the long term. It can also disrupt the process of breastfeeding, family life, and sexual intercourse. In order to reduce the rate and severity of the trauma, to improve the short- and long-term maternal morbidity associated with perineal injury and recovery, these women should be treated with all known methods and medications, as well as new alternatives for better management should be sought. TheresienOl therapy is effective against clinical symptoms and further monitoring and inclusion of new patients will show whether the risk of objective short-term and long-term complications is reduced.

## Patient consent

The authors, Vasileva P, Strashilov S, Yordanov A, declare that:

- 1 They have obtained written, informed consent for the publication of the details relating to the patient(s) in this report.
- 2 All possible steps have been taken to safeguard the identity of the patient(s).
- 3 This submission is compliant with the requirements of local research ethics committees.

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## Declaration of Competing Interest

The authors declare that they have no competing interests.

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