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GENERAL GYNECOLOGY

Retrospective case review of combined local mepivacaine and steroid injections into vaginal trigger points for the management of moderate-to-severe perineal pain after childbirth

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Abstract

Objective After an obstetric trauma, a non-negligible number of postpartum women complain of perineal pain and dyspareunia. These symptoms clearly diminish their quality of life. Many treatment options have been suggested, such as oral analgesia, local anaesthetic, or steroid injections… Regretfully, none of these have yet demonstrated their efficacy with the validated trials. The objective of this review is to retrospectively evaluate the response to vaginal infiltrations into the trigger points (where the vaginal/perineal examination sets off the maximum intensity of pain) combining local anaesthetic and corticosteroids.

Methods Our goal is to detect women who complain of sexual disfunction and perineal pain 2 and 6 months after childbirth. All reviewed cases correspond to vaginal deliveries made between June 2016 and April 2017. Trigger points were detected through a vaginal examination. Patients with moderate-to-severe perineal pain were determined using a visual analogue score (VAS 0–10). We suggested a treatment of vaginal infiltration specifically into the trigger points. Patients underwent local injections with a combination of mepivacaine hydrochloride 2% (8 ml) and betamethasone acetate (2 ml).

Results Twenty-seven women were treated with vaginal injections directly into the trigger points. Seven of them [7/27 (25.92%)] were treated 2 months after delivery and experienced complete recovery of their perineal pain 4 months after the treatment. Those who first chose conservative treatment [20/27 (74.08%)] were also assessed 6 months after giving birth. This group continued to suffer the same symptoms and they then subsequently underwent vaginal injections. As well as the first group, these women experienced complete recovery of their perineal pain after treatment. No side effects have been registered so far.

Conclusion Women treated with vaginal injection into the trigger points improved in a fast and effective way. It seems to be a well-tolerated and safe option for women with moderate-to-severe pain.

Keywords Middle- and long-term perineal pain · Postpartum women · Dyspareunia · Vaginal and perineal injections · Trigger points

Introduction

Parity consists of three processes: pregnancy, labour, and childbirth, each contributing to the development of possible pelvic floor dysfunctions. The reasons for these biological mechanisms are not yet accurately known. The available data suggest that pregnancy and childbirth contribute to the appearance of pelvic floor lesions due to compression, stretching or tearing of the nervous, muscular, and connective tissues. Such lesions are manifested as chronic perineal pain, dyspareunia, and urinary and faecal incontinence, amongst others. The correct neuromuscular function and the support of the pelvic organs are critical factors for the normal functioning of the pelvic viscera.

As noted above, the rich innervation of the perineum suffers phenomena of stretching and excessive compression which can cause damage to the nerves. Therefore,

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complicated deliveries (instrumental births, high foetal weight, or prolonged expulsion period) will be the starting points of the aforementioned manifestations [1–3].

Until recently, a little attention was given to perineal consequences after delivery. An increasing interest for perineal pain and dyspareunia treatment has opened the door to a number of possible therapies. Treatment options for perineal pain in the immediate postpartum period include oral analgesia and non-steroidal agents. Infiltration with local analgesia in the first 24 h postpartum has also been reported as an effective treatment of the acute perineal pain. Other therapeutic options include ultrasounds, antiseptics, and non-pharmacological applications such as acupuncture [3–5]. None of these have yet demonstrated their efficacy with validated trials or seem to be an alternative treatment for middle- and long-term perineal pain.

It is estimated that over 85% of women who have a vaginal delivery will sustain some degree of perineal trauma [5]. Perineal pain can impact woman's daily activities including sleep patterns, urinary and bowel function, and practical care of her infant [6]. Dyspareunia is also common in the postnatal period [5]. Both complications can be potentially devastating for mothers affecting relationships with their partner and bonding with the newborn child [3–7].

The incidences of perineal pain and dyspareunia may change depending on the source consulted. It has been reported that 42% of women with a vaginal delivery will continue with these symptoms within the first 2 week postpartum. Up to 92% of mothers will complain of perineal pain on the day after delivery. Most of them will experience a gradual recovery within a 2 month period. However, chronic lower genital tract pain has been observed in a significant number of women 1 year after delivery [3–8].

If we focus on the incidence of dyspareunia, the number of affected women increases notably. A 60% of these mothers will report coital difficulties after 3 months and 30% will continue with these issues 6 months after delivery [5, 8, 9].

Our hospital is located in the north-west of the Community of Madrid (Area 3) covering a population of approximately 250,000 people. Our own statistics showed a prevalence of perineal pain of 28% and 10% at 3 month and 6 month postpartum, respectively. Thus, dyspareunia continues in 38% of cases at 3 months and 13% at 6 months. These values have been determined using the validated pain scores (visual analogue scales for pain: VAS) in our pelvic floor unit.

The aim of this retrospective review is to show the effect of vaginal and perineal injections, into the trigger points, with a local anaesthetic + corticosteroids in a group of 27 treated women.

Materials and methods

We present a group of mothers who complained about moderate–severe perineal pain and dyspareunia and were treated with vaginal injections.

Progressively over time, there is a spontaneous recovery of perineal pain during the first weeks after obstetrical trauma. Different sources showed a decreased in the number of women who complained of perineal pain and dyspareunia 2–3 months after delivery [3–8]. This is more significant if we analyse these symptoms 6 month postpartum. Barret et al. reported a prevalence of 58% in the first 3 months and 26% 6 months after delivery [8].

In a recent study of chronic pelvic pain, 95.6% of patients complained of pain immediately after childbirth. The observed rate decreased to 9.8% at 2 months, 1.8% at 6 months, and 0.3% after a year. Those patients with chronic pain experienced a moderate-to-severe intensity [3].

We examined women who had given birth in our hospital 2 and 6 months after delivery. All were asked about symptoms such as perineal pain and dyspareunia. After the medical interview, all patients were examined to look for trigger points. We consider a trigger point to be those where the vaginal/perineal examination set off the maximum degree of pain. Through vaginal palpation, the levator ani muscle was examined thoroughly in its two fascicles (iliococcygeus and pubococcygeus) as well as the coccygeus muscle. This appraisal enabled the detection of trigger points and lesions due to partial or total avulsion of levator ani muscle, painful scar of episiotomy, or muscular tears [10–12].

An assessment of perineal pain was made by an 11-point visual analogue scale: VAS (Fig. 1). Women selected for intravaginal injections were those experiencing pain at a score of 4 or over on the VAS scale. This score is deemed moderate–severe pain. We proposed a treatment based on intravaginal injection directly into the trigger points. The combination of drugs used was Mepivacaine hydrochloride 2% (8 ml) and betamethasone acetate (2 ml) [13–18].

For those women with a moderate-to-severe perineal pain, intravaginal injection was offered at 2 month postpartum assessed as an alternative to conservative treatment with oral analgesia.

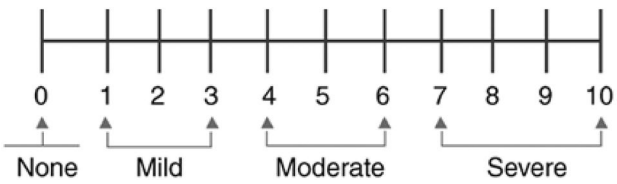

Fig. 1 11-point visual analogue scale (VAS)

To avoid false results (residual pain in the injection site), infiltrated women were re-evaluated 2 weeks after the treatment. Despite the chose treatment, all patients were examined 6 months after childbirth.

Infiltrations were carried out using an Injetak adjustable needle of 70 cm (Medical Measurement, Palex Medical Inc). This needle allows a safe and controlled injection with a maximum depth of 0.5 cm. Trigger points were detected by examiner's finger. Guided by their own finger, the examiner introduced 2 ml of medication.

Data were retrospectively collected and were introduced into an Excel Microsoft® database for its analysis. Mean, median values, and range were calculated.

Results

Seventy-four patients were evaluated during a 10-month period (from June 2016 until April 2017). The first consult in our Pelvic Floor unit was 2 months after delivery. Twenty-seven (36.48%) of these patients declared pain at a level of 4 or over on the VAS scale. This score was asked for during the medical interview and again, while gynecological examination was carried out.

The following statistics refer to the twenty-seven patients who were infiltrated. The main epidemiological data of this group ($n=27$) are shown in Tables 1 and 2.

Twenty-six (96.29%) of the twenty-seven subjects were singletons, while just one (3.71%) was a multiple gestation. All of them were full-term gestations (≥ 37 to <42 weeks of pregnancy) except the twin pregnancy whose delivery was at 35 weeks of pregnancy (late preterm newborns).

Obstetrical data such as delivery features and perineal trauma were collected and analysed. Both Thierry's Spatulas and vacuum are instruments frequently used for operative vaginal delivery in our hospital. The Thierry´s spatulas consist of two independent and symmetrical branches which include a shank, handle, and wide solid blade. The shanks do not articulate; thus, each branch acts as an independent lever and the head is not compressed between the blades. The vacuum extraction devices used consist of a soft plastic cup, a vacuum pump to provide suction between the cup and faetal scalp, and a traction system [19]. Table 3 shows all the obstetrical data of the study subjects.

The mean times of dilation and expulsion period were studied and resulted in 319 min and 77 min, respectively. Another important value was the foetal weight where a mean of 3222 g was observed. The minimum registered weight was 2645 g and the maximum reached 3980 g.

During the first clinical examination 2 months after childbirth, the 27 patients complained of perineal pain (VAS scale ≥ 4). Seven (25.92%) were infiltrated into the trigger points during this first examination and twenty (74.08%) were not initially treated. A new appointment was set 6 months after delivery for all of them. Those who were infiltrated with Mepivacaine hydrochloride 2% (8 ml) plus betamethasone acetate (2 ml) at first experienced complete recovery of their perineal pain. Meanwhile, the non-treated women continued to complain of the same symptoms 6 months after delivery.

Regardless of the time of infiltration after delivery, we re-assessed our women 2 weeks after the treatment. This medical appointment gave us the possibility of knowing the early responses to the treatment and the occurrence of side effects. All of them revealed a complete relief of their symptoms 2 weeks after the administration of the medication. An assessment of perineal pain was, once more, made using an 11-point visual analogue scale: VAS. No side effects were reported.

Table 1 Epidemiological data (quantitative data)

	Mean	Median	Range
Age (years)	30.29	31	[20–43]
Body mass index	23.97	23	[18–31]

Table 2 Epidemiological data (qualitative data)

	n (%)
Race ($n=27$)	
Caucasian	23 (85.18)
Latin	4 (14.82)
African	0 (0)
Asian	0 (0)
Number of previous delivery ($n=27$)	
First-time mothers	19 (70.37)
Multiple-birth mothers	8 (29.63)

Table 3 Obstetrical data

	n (%)
Type of delivery ($n=27$)	
Spontaneous vaginal	15 (55.55)
Vacuum	2 (7.4)
Thierry's spatulas	8 (29.63)
Caesarean section	2 (7.4)
Episiotomy	15 (55.55)
No episiotomy	12 (44.44)
Non-perineal tear	12 (44.44)
First-degree tear	6 (22.22)
Second-degree tear	8 (29.63)
Third-degree tear	1 (3.70)

Discussion

One must take into account several factors to understand the pathogenesis of perineal pain. Tissue damage does not inevitably lead to the onset of chronic pain, but there are multiple reasons to expect a high incidence of chronic pain caused by wounds associated with childbirth. Local inflammation, sensory reinnervation, and sensitisation would increase the likelihood of chronic pain due to damage in this area [2, 10, 12].

In our case review cohort, a little more than a third of the patients (27/74) presented moderate-to-severe perineal pain 2 months after delivery (VAS score ≥ 4) as well as dyspareunia. Those women with mild pain (VAS score < 4) improved over the course of time. On the other hand, those with moderate-to-severe pain continued with their symptoms over time.

Vaginal infiltrations into the trigger points could appear to be an alternative treatment in postpartum women with moderate-to-severe pain. Our 27 treated women showed a completely recovery despite the moment of the vaginal infiltration (at 2 or 6 months after childbirth medical visit). After treatment, they picked up non-painful sexual intercourses and perineal pain disappeared. This may be considered as a possible solution for women with the described symptoms. Treated women improved in a rapid and effective way.

One needs to take into consideration that the success rate may be influenced by the fact that the vaginal examinations were carried out by pelvic floor experts. Precise locating of the trigger points allows a targeted. The results may change if the injections are carried out by a non-expert doctor.

Nevertheless, this review has multiple limitations. First, the number of treated women is not enough to draw the right conclusions. It is not a randomised-controlled trial where two alternative treatments are valued.

In addition, confounders may be involved in the natural development of these symptoms. The association of dyspareunia with breastfeeding has been reported before and is most likely to be due to the hormonal influences, associated with the loss of libido and vaginal dryness [8, 15].

A lack of long-term follow-up is a further limitation. Treatment length needs to be enlighten as well as the possible reappearance of symptoms during time.

No side effects have been recorded so far, but this does not suggest that we are managing a gentle treatment. Both Mepivacaine hydrochloride and betamethasone acetate are drugs with potential side effects [11]. Hence, it is necessary to perform long-term studies.

Conclusion

Childbirth is one of the main causes of pelvic floor dysfunction in a high number of postpartum women. Natural recovery of the symptoms over time works for women suffering mild pain, while those with moderate-to-severe pain need to be treated to ensure recovery.

Mepivacaine combined with betamethasone injected into the trigger points seems to be an effective alternative treatment. As no side effect has been registered so far, we deem this option safe.

This treatment should be considered for women with moderate-to-severe pain. Long-term studies are needed to reveal the actual role of the anaesthetic and corticosteroids in the cure of their symptoms as well as to determine the treatment length.

Devastating postpartum consequences in women quality of life makes this issue a priority in future treatment investigation.

Compliance with ethical standards

Conflict of interest Beatriz Moya Esteban declares that she has no conflict of interest. Juan Antonio Solano Calvo declares that he has no conflict of interest. Celia Torres Morcillo declares that she has no conflict of interest. Juan José Delgado Espeja declares that he has no conflict of interest. Jeronimo González Hinojosa declares that he has no conflict of interest. Álvaro Zapico Goñi declares that he has no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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