

Efficacy of brief hypnosis as a pain relief method in episiotomy repair

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Abstract: *Background:* Hypnosis has a longstanding tradition to induce analgesia and sedation in surgery. *Aim of the study:* The purpose of this study was to compare the effectiveness of hypnosis with local anesthetics during episiotomy repair. The clinical trial was designed as a prospective and randomised controlled study. *Patients and Methods:* Thirty primiparous women admitted for vaginal delivery were randomly categorized into two groups: hypnosis and local anesthesia groups. *Results:* The number of women who requested additional anesthesia during repair procedure, pain intensity, participant satisfaction and wound healing were evaluated using validated scales. The subjects who underwent hypnosis requested less anesthesia (8/15 women; 53%) than the local anesthesia group (14/15 women; 93%; $P = 0.014$). The mean pain intensity, one hour after the end of perineal repair, in hypnosis and local anesthesia groups was 3.0 ± 1.13 and 6.07 ± 2.34 respectively ($P < 0.001$). However, there were no differences in pain intensity and wound healing 24 hours after episiotomy repair. Participant satisfaction with the pain-relief method was insignificantly more in the hypnosis group (86 versus 66%, $P = 0.3$). *Conclusions:* Brief hypnosis as used in this study can be effective for pain relief and can be applied instead of local anesthesia during perineal repair.

Key words: Anesthetic; Episiotomy; Hypnosis; Pain; Suturing.

INTRODUCTION

Hypnotherapy, the clinical use of suggestions during hypnosis, in pregnancy and delivery has been used for more than a century, and is one of the most useful applications of hypnosis. The responsiveness of women to hypnosis increases in pregnancy.¹ It was reported a case where hypnosis was used as the only anaesthetic method during Caesarean section with hysterectomy.² Efficacy of hypnosis for the relief of acute pain and anxiety during medical procedures have been evaluated in randomized clinical trials.^{3,4} Hypnosis during abortion decreased participant requests for additional pain relief.⁵ A recent comprehensive meta-analysis demonstrated benefits of hypnosis on different surgically relevant outcomes.⁶ Although pain relief with hypnosis has been recognized previously, few anaesthetists have applied the technique in surgical settings.⁷ So further researches are needed in different clinical settings and populations to confirm the usefulness of hypnosis.

Episiotomy is the most common procedure in obstetric. Midwives usually perform the repair of lacerations and episiotomies.⁸ The perineal suturing caused considerable pain.⁹ A recent trial reported that 50% of the participants experienced pain during perineal repair.¹⁰ There are scarce researches on effective pain relief methods during perineal repair.^{8,11} Local anaesthetics are the usual pain-relief method for most postpartum surgical repairs. However, the injection of the anesthetic agent itself induces pain and tissue edema.¹² Therefore there is a need to investigate the effectiveness and acceptability of other pain-relief methods for perineal injuries repair following delivery. This clinical trial aimed to compare the effectiveness of hypnosis with local anesthetics during episiotomy suturing.

MATERIALS AND METHODS

Study design

The clinical trial was designed as a prospective and randomised controlled study. The trial was conducted from January 2012 to September 2012 at Arefhian Hospital, Urmia, Iran. The clinical research ethics board at Arefhian Hospital approved the protocol, and all participants provid-

ed verbal and written informed consent. The study outline was reviewed with participants before signing the consent forms. For ethical and practical considerations, the participants and the research midwife were not blinded to the assignment. Hypnotic intervention is not easy to assign blindly. Blinding hypnosis studies are unlikely to take an approval through an ethical committee assessment.¹

A total of 30 women with median episiotomy (3-4 cm) were assigned randomly to either the hypnosis or local anesthesia group by a computer generated random numbers table. Additional pain relief could be supplied at any time during the episiotomy repair on request from women. The use of 10% lidocaine spray was the first choice for both treatment groups.

Interventions

Treatment with either of the two pain-relief methods was conducted by only a hypnotherapist midwife during the study period. As the routine practice in this hospital, all subjects were injected 5 ml lidocaine solution 1% before performing median episiotomy. After delivery, in local anesthesia group, 5 ml lidocaine solution 1% was applied directly along the borders of the wound 5 minutes before suturing. The total volume of lidocaine used in this group included the initial dose was 10 ml.

In hypnosis group, the midwife with advanced training in using hypnosis for obstetric pain relief asked the woman to enter a hypnotic state by hearing. Standardized hypnotic intervention (SHI) protocol and written script have been published elsewhere.¹³ Once the state of mental relaxation and selective attention had been induced, the hypnotherapist designed direct suggestions to decrease pain intensity and anxiety during the suturing and asked the woman to go deeper into hypnosis. The woman was also reminded that she would be able to request anesthesia to increase her comfort at any time during the procedure. The patient received the suggestions of waking and eye opening at the end of the procedure. The episiotomy suturing has been described in detail elsewhere.¹⁴ As part of the routine suturing, a continuous suture for vaginal mucosa and interrupted sutures for perineal muscles were applied (size 0, chromic catgut thread). The skin was sutured using subcuticular technique (size 00, chromic catgut thread).

Eligibility and recruitment

All healthy primiparous women with spontaneous vaginal delivery after 37 weeks of gestation were eligible. Exclusion criteria were instrument delivery by forceps or ventouse, perineal lacerations, postpartum hemorrhage > 1000 ml or severe mental illness.

Outcome measures

The primary outcomes were the number of women who requested additional anesthesia during repair procedure and self-assessments of pain intensity at 1 and 24 hours after delivery. Secondary outcomes were satisfaction with intervention and wound healing assessed at 24 hours postpartum.

Data collection

A 10-mm Visual Analogue Scale (VAS) was used for evaluation of perineal pain intensity (0-10; 0=no pain; 10=worst pain imaginable).¹⁵ The number of lidocaine sprays administered was recorded. Wound healing was assessed by the research midwife who completed the repair at 24 hours postpartum in the hospital. Evaluation of wound healing was conducted by determining if the wound was gaping more than 0.5 cm as well as by systematic assessment of Redness, Edema, Ecchymosis, Discharge and Approximation (the REEDA scale).¹⁶

Data analyses

The data were analyzed using SPSS. Independent t tests were used for analyses of continuous data with normal distribution. Mean values were reported with SD. The chi-square test was used for analyses of categorical variables. The Fisher's exact test was used if expected frequencies were less than five. P values < 0.05 were considered statistically significant.

RESULTS

There were no significant differences between the groups for age, weight, birth weight or length of suturing (Table 1).

No side-effects were reported in either intervention. There were statistically significant differences between the two groups in the request for additional anesthesia during repair (93% in local anesthesia versus 53.3% in hypnosis groups, $p < 0.05$). The mean pain intensity in the first hour postpartum in hypnosis and local anesthesia groups was 3.0 ± 1.13 and 6.07 ± 2.34 respectively ($P < 0.001$). However, it was insignificant at 24 hours after delivery: 4.33 ± 1.23 versus 5.13 ± 1.12 , respectively ($P = 0.07$). Patient satisfaction with the pain relief method was insignificantly more in hypnosis group (Table 2). No difference was seen in wound healing at 24 hours postpartum between the groups. The median REEDA score was 3 in both groups.

DISCUSSION

Decreasing postpartum pain related to perineal laceration repair is important. The present study demonstrated that brief hypnosis as used in this trial for pain relief during epi-

TABLE 2. – Comparison between the local anesthesia and hypnosis groups.

	Local Anesthesia(%)	Hypnosis (%)	P Value
Requested additional anesthesia	14/15 (93)	8/15 (53)	0.014
Pain intensity in the first hour postpartum*	6.07 ± 2.34	3 ± 1.13	< 0.001
Pain intensity at 24 hours postpartum*	5.13 ± 1.1	4.33 ± 1.2	0.07
Satisfaction with intervention	10/15 (66.7)	13/15 (86.7)	0.39

siotomy repair was as effective as local anesthesia and even more in some variables.

In this study a midwife with advanced training in using hypnosis effectively asked the untrained mothers to enter a hypnotic state for the first time in delivery suit. It was previously showed that "hypnosis untrained women may be effective from hearing a medical student read a standardized hypnosis script for the first time in labour".¹⁷

It is clear that women without regional anesthesia experience high levels of pain during the perineal suturing.⁹ So, it needs to use a pain relief method during suturing. Perineal injection with 10 ml (100mg) of lidocaine is recommended for episiotomy.¹⁸ Lidocaine has been used in concentration of 1% in most studies.¹⁹ Hypnosis, alone or in combination with other anesthetic methods, may offer advantages over routine analgesia alone. Hypnosis reduces analgesia requirements in labour.¹ In this study, hypnosis compared with the use of 10 ml lidocaine 1% in the trial decreased the requests for additional anesthesia together with maintaining lower levels of pain during procedure.

Wound healing at 24 hours after delivery was similar in both groups. More patients were satisfied with hypnosis as the pain-relief method, however, it was statistically insignificant. Maybe, it would be due to the small size of this study. Further study should expand this study in the form of a larger controlled study.

The double-blind controlled study is the gold standard for assessment of new methods in medical science.²⁰ However, blinding of the patients and the researchers was not possible in this study due to ethical and practical considerations.

CONCLUSION

Results from this study show that perineal suturing under brief hypnosis can be performed without additional local anesthesia in most women. In regard to high prevalence of postpartum perineal tears or episiotomies, the hypnosis can be effective in decreasing costs and improving suturing pain complaints for most women.

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CONFLICT OF INTERESTS

There are no conflicts of interest.

REFERENCES

1. Cyna AM, McAuliffe GL, Andrew MI. Hypnosis for pain relief in labour and childbirth: a systematic review. *Br J Anaesth.* 2004; 93:505-11.

TABLE 1. – Baseline characteristics of the study population .

Stage	Local Anesthesia	Hypnosis
Age	25.3 ± 4.04	25.07 ± 4.4
Weight (kg)	73.2 ± 9.1	71.9 ± 11.7
Birth weight (g)	3264 ± 452	3240 ± 347
Length of suturing (min)	30.2 ± 6.2	29.8 ± 5.5

2. Delee ST, Kroger WS. Hypnoanesthesia for cesarean section and hysterectomy. *J Am Med Assoc.* 1957; 163:442-4.
3. Butler LD, Symons BK, Henderson SL, Shortliffe LD, Spiegel D. Hypnosis reduces distress and duration of an invasive medical procedure for children. *Pediatrics.* 2005; 115:e77-e85.
4. Lang EV, Berbaum KS, Faintuch S, et al. Adjunctive self-hypnotic relaxation for outpatient medical procedures: a prospective randomized trial with women undergoing large core breast biopsy. *Pain.* 2006; 126:155-64.
5. Marc I, Rainville P, Masse Bt, et al. Hypnotic analgesia intervention during first-trimester pregnancy termination: an open randomized trial. *Am J Obstet Gynecol.* 2008; 199:469. e1-9.
6. Tefikow S, Barth J, Maichrowitz S, Beelmann A, Strauss B, Rosendahl J. Efficacy of hypnosis in adults undergoing surgery or medical procedures: A meta-analysis of randomized controlled trials. *Clin Psychol Rev.* 2013; 33:623-36.
7. Askay SW, Patterson DR, Sharar SR. Virtual Reality Hypnosis. *Contemp Hypn.* 2009; 26:40-7.
8. Kindberg S, Klunder L, Strom J, Henriksen TB. Ear acupuncture or local anaesthetics as pain relief during postpartum surgical repair: a randomised controlled trial. *BJOG.* 2009; 116:569-76.
9. Sanders J, Campbell R, Peters TJ. Effectiveness of pain relief during perineal suturing. *BJOG.* 2002; 109:1066-8.
10. Kindberg S, Stehouwer M, Hvidman L, Henriksen TB. Postpartum perineal repair performed by midwives: a randomised trial comparing two suture techniques leaving the skin unsutured. *BJOG.* 2008; 115:472-9.
11. Fyनेface-Ogan S, Mato CN, Enyindah CE. Postpartum perineal pain in primiparous women: a comparison of two local anaesthetic agents. *Niger J Med.* 2006; 15:77-80.
12. Sanders J, Peters TJ, Campbell R. Techniques to reduce perineal pain during spontaneous vaginal delivery and perineal suturing: a UK survey of midwifery practice. *Midwifery.* 2005; 21:154-60.
13. Marc I, Rainville P, Dodin S. Hypnotic induction and therapeutic suggestions in first-trimester pregnancy termination. *Intl Journal of Clinical and Experimental Hypnosis.* 2008; 56:214-28.
14. Isager-Sally L, Legarth J, Jacobsen B, Bostofte E. Episiotomy repair--immediate and long-term sequelae. A prospective randomized study of three different methods of repair. *Br J Obstet Gynaecol.* 1986; 93:420-5.
15. Paul-Dauphin A, Guillemin F, Virion JM, Briancon S. Bias and precision in visual analogue scales: a randomized controlled trial. *Am J Epidemiol.* 1999; 150:1117-27.
16. Davidson N. REEDA: evaluating postpartum healing. *J Nurse Midwifery.* 1974; 19:6-8.
17. Rock NL ST, Campbell C. Hypnosis with untrained, nonvolunteer patients in labor. *Int J Clin Exp Hypn* 1969; 17: 25-36.
18. Colacioppo PM, Gonzalez Riesco ML. Effectiveness of local anaesthetics with and without vasoconstrictors for perineal repair during spontaneous delivery: Double-blind randomised controlled trial. *Midwifery.* 2009; 25:88-95.
19. Karcioğlu O, Topacoglu H, Ayrik C, Ozucelik DN, Soysal S. Prilocaine versus plain or buffered lidocaine for local anaesthesia in laceration repair: randomized double-blind comparison. *Croat Med J.* 2003; 44:716-20.
20. Misra S. Randomized double blind placebo control studies, the "Gold Standard" in intervention based studies. *Indian J Sex Transm Dis.* 2012; 3:131-4.

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Multidisciplinary Uro-Gyne-Procto Editorial Comment

To improve the integration among the three segments of the pelvic floor, some of the articles published in **Pelvipерineology** are commented on by **Urologists, Gynecologists, Proctologists/Colo Rectal Surgeons or other Specialists** with their critical opinion and a teaching purpose. Differences, similarities and possible relationships between the data presented and what is known in the three or more fields of competence are stressed, or the absence of any analogy is indicated. The discussion is not a peer review, it concerns concepts, ideas, theories, not the methodology of the presentation.

Pain Therapy... Many clinical studies and investigations show that hypnosis may produce in surgical patients positive effects on emotional distress, pain, medication consumption, physiological parameters and recovery.¹ Vatanparast and Shekarforoush paper indicates that local anesthesia with 1% lidocaine (5 ml) before episiotomy followed by a suture is not really effective if administered as a sole analgesic method. As a matter of fact, near all patients needed a further analgesic/ anesthetic dose to obtain a complete pain relief. Hypnosis decreases the probability of a new analgesic request by means of distraction mechanisms which cause mainly reduction in frontal lobes activity. Anticipation of pain may in itself induce changes in brain nociceptive networks and hypnotic suggestions may modulate pain-related cortical activity by focusing or diverting attention.² Anticipation of pain (virtual) is able to induce a real pain of about 40% of the pain felt under direct nociceptive application.

Results similar to those seen under hypnosis may be obtained if a low dose diazepam or another benzodiazepine are administered just after the 3rd stage of labor before the suture. It is well known that anxiolytics are very effective in addition to local anaesthetics to improve general comfort and reduce increased fear to feel pain. Also, these drugs are not expensive and easily available.

The hypnotic help offered to the patients in this study may have favourably influenced some of the women in their belief of having had a privileged and special attention. If hypnosis in-

creased analgesia in a particular context, this eventually demonstrates the pivotal role played by different forms of emotional state sensible to distraction and/or to the influence of a skilled and authoritative trained physician. However, a number of patients less submissive to be manipulated might be unresponsive to hypnotic suggestions and their behaviour can be unsatisfactory, in this case, a current pharmacological treatment remaining the only possibility.

As an alternative, if a lateral episiotomy is scheduled, a perineal pudendal block at Alcock's canal in the same side together with local tissues infiltration could be very useful, being done at least 5 minutes before the surgical incision. It would be interesting to complete this study on the effects of hypnosis in obstetrical patients adding a control group treated with 10 ml anaesthetic solution instead of 5 ml, either by simple vaginal-perineal infiltration or in combination with a pudendal block, as described above. In this case a minor role of hypnosis should be expected.

1. Tefikow S, Barth J, Maichrowitz S et al. Efficacy of hypnosis in adults undergoing surgery or medical procedures: a meta-analysis of randomized controlled trials. *Clin Psychol Rev* 2013; 33:623-36
2. Porro CA. Functional imaging and pain: behavior, perception, and modulation. *Neuroscientists* 2003; 9: 354-69.

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