Porodnická epidurální analgezie „up-to-date“ 2015

doc. MUDr. Antonín Pařízek, CSc.

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Název položky	Datum změny	Typ	Velikost
150 years in pursuit of optimal pain relief ...	19.11.2015 13:41	Adobe Acrobat D...	123 kB
00000539-201301000-00017	19.11.2015 11:18	Adobe Acrobat D...	3 118 kB
A randomised controlled trial using the E...	19.11.2015 14:08	Adobe Acrobat D...	21 kB
Bupivacaine in combination with fentany...	19.11.2015 11:31	Dokument aplikac...	15 kB
Comparison_Between_the_Use_of_Ropiv...	19.11.2015 13:24	Adobe Acrobat D...	452 kB
Differences in maternal temperature duri...	19.11.2015 11:03	Adobe Acrobat D...	1 270 kB
Does epidural analgesia play a__ role in p...	23.11.2015 15:51	Adobe Acrobat D...	453 kB
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Efficacy and safety of local anesthetics b...	19.11.2015 15:13	Adobe Acrobat D...	979 kB
Efficacy and safety of local__ anesthetics ...	23.11.2015 15:51	Adobe Acrobat D...	1 197 kB
Efficacy and side effects of intravenous r...	19.11.2015 11:02	Adobe Acrobat D...	211 kB
Epidural analgesia in labour and risk of c...	19.11.2015 14:37	Adobe Acrobat D...	405 kB
Epidural analgesia with amide local anest...	19.11.2015 11:28	Adobe Acrobat D...	388 kB
Epidural neostigmine and clonidine impr...	19.11.2015 11:25	Adobe Acrobat D...	284 kB
Foetal heart rate deceleration__ with com...	23.11.2015 15:51	Adobe Acrobat D...	1 069 kB
Higher risk for adverse obstetric outcom...	19.11.2015 14:11	Adobe Acrobat D...	117 kB
Intermittent epidural bolus compared wit...	19.11.2015 11:18	Adobe Acrobat D...	3 118 kB
Is epidural analgesia retained placenta_pdf	27.11.2015 15:54	Soubor	154 kB
Labour analgesia and the baby-good ne...	19.11.2015 10:59	Adobe Acrobat D...	175 kB
Life-threatening acute subdural haemato...	19.11.2015 13:29	Adobe Acrobat D...	753 kB
Modern neuraxial labour analgesia	23.11.2015 15:51	Adobe Acrobat D...	658 kB
Neuraxial analgesia effects on labour pro...	19.11.2015 13:43	Adobe Acrobat D...	270 kB
Neuraxial Anesthesia in Parturients with ...	19.11.2015 11:20	Adobe Acrobat D...	659 kB
Pain management for women in labour a...	19.11.2015 11:15	Dokument aplikac...	18 kB
Patient satisfaction between remifentanil...	19.11.2015 13:58	Adobe Acrobat D...	303 kB
Routine labour epidural analgesia versus ...	19.11.2015 13:44	Adobe Acrobat D...	175 kB
The 2013 Gerard W. Ostheimer Lecture-...	8.11.2013 17:01	Adobe Acrobat D...	254 kB
The effect of adding a background infusi...	19.11.2015 13:31	Adobe Acrobat D...	1 960 kB

REVIEW

CURRENT OPINION

Modern neuraxial labour analgesia

Ban L. Sng[a,b], Sarah C. Kwok[a], and Alex T.H. Sia[a,b]

Purpose of review

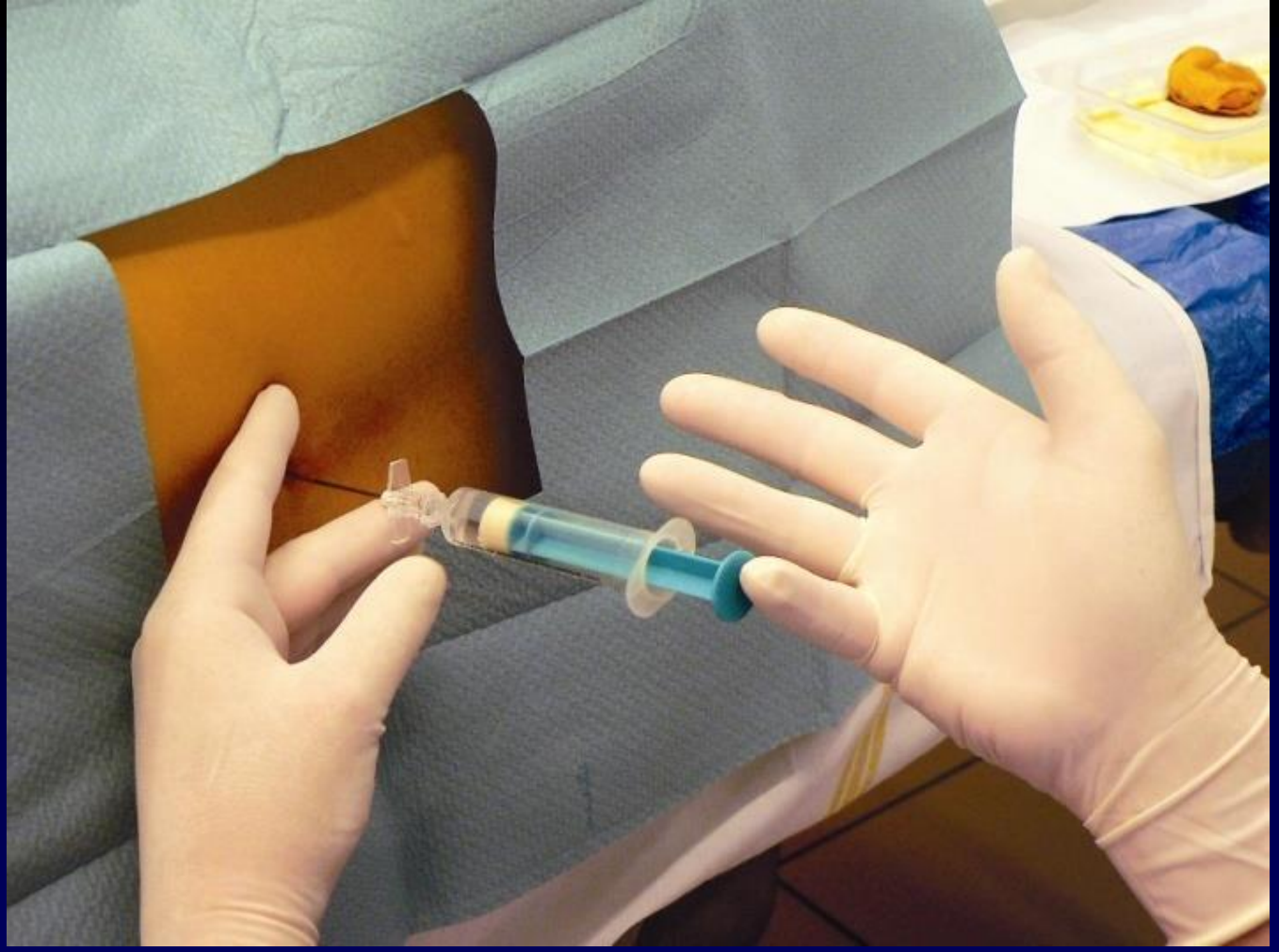
Neuraxial analgesia is considered the gold standard of labour analgesia as it provides the most effective method of pain relief during childbirth. In this article, we explore the recent advances in the initiation and maintenance of epidural analgesia.

Recent findings

Patient-controlled epidural analgesia, computer-integrated patient-controlled epidural analgesia, intermittent epidural bolus (programmed intermittent bolus, automated mandatory bolus) and variable frequency automated mandatory bolus administration are techniques that allow the individualized titration and optimization of labour analgesia. The debate has moved on to finding the optimal settings for epidural bolus dosing, time intervals and frequency for epidural analgesia with the hope of improving safety and efficacy as well as patient satisfaction.

Summary

We examine these recent developments in pump technology and epidural delivery systems and evaluate how these have enhanced the mothers' birthing experiences.



Epidurální analgezie
z porodnického hlediska nejvýhodnější
regulátor porodní bolesti/stresu

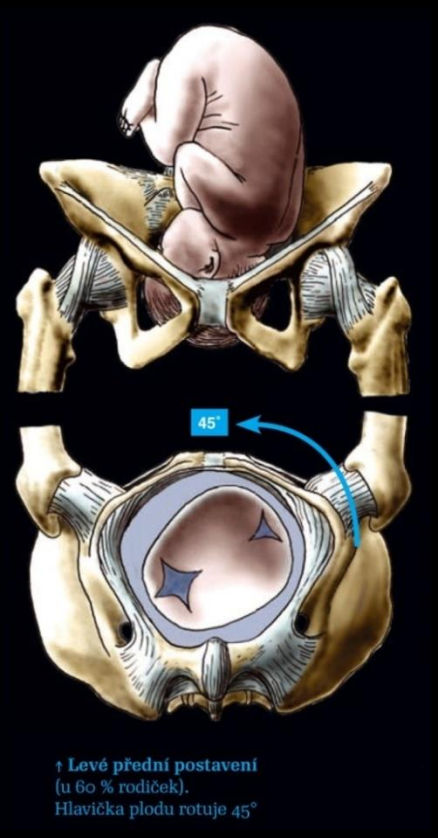
Neuroaxiální analgezie u porodu

Studium a výzkum…

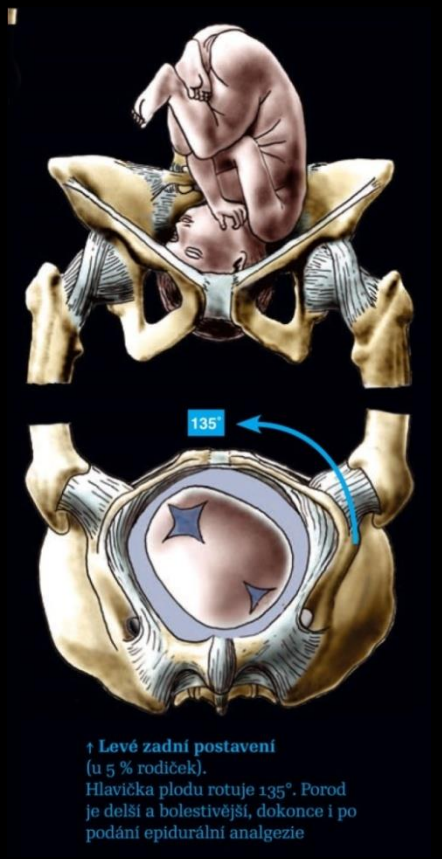
…souvisí epidurální analgezie příčině:

- s celkovým prodloužením průběhu porodu
- vlivem na plod
- se zvýšeným rizikem ukončení porodu per sectionem caesaream
- s častějším ukončením vaginálního porodu per forcipem nebo vakuumextrakcí
- vliv na kojení

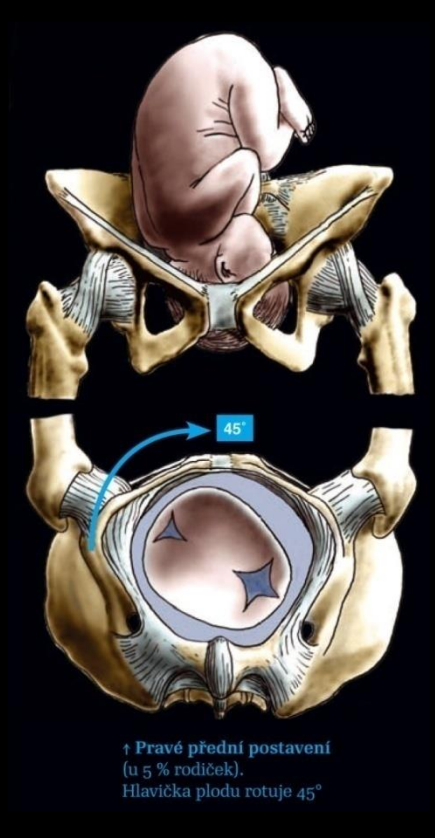
Mechanika rotace hlavičky - záhlaví



↑ **Levé přední postavení**
(u 60 % rodiček).
Hlavička plodu rotuje 45°



↑ **Levé zadní postavení**
(u 5 % rodiček).
Hlavička plodu rotuje 135°. Porod je delší a bolestivější, dokonce i po podání epidurální analgezie



↑ **Pravé přední postavení**
(u 5 % rodiček).
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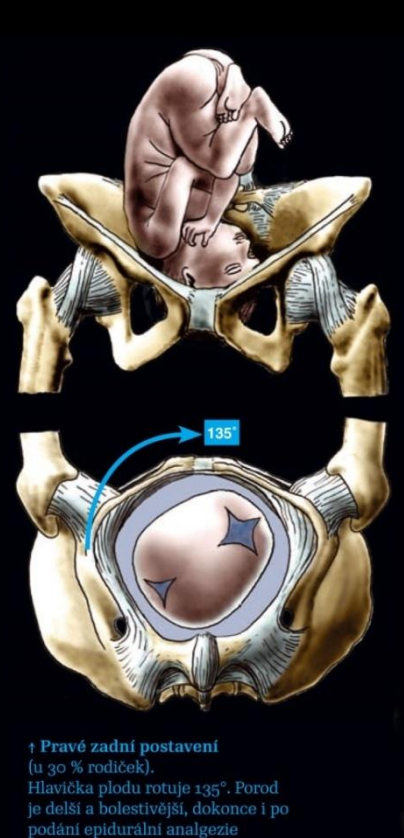

↑ **Pravé zadní postavení**
(u 30 % rodiček).
Hlavička plodu rotuje 135°. Porod je delší a bolestivější, dokonce i po podání epidurální analgezie

Časový průběh porodu

Epidurální analgezie

I. doby porodní v průměr - 4 hod. 20 min.

II. doby porodní v průměr - 1 hod. 10 min.

Maria Grazia Frigo at al

Rebuilding the labor curve during neuraxial analgesia. J. Obstet. Gynaecol. Res. Vol. 37, No. 11: 1532–1539, November 2011

Před 20 lety

rodičky s epidurální analgezií měly problémy

s mobilitou na podložní mísu…

Dnes se mohou volně pohybovat po porodním sále

Funai E.F.

Do epidurals increase the risk of C/S?

Contemporary OB/GYN, June 2003

Schopnost pohybu při porodu

- rodička z zvolí libovolnou polohu, která jí vyhovuje, s výjimkou polohy naznak
- chůze usnadňuje vyprazdňování měchýře a brání stagnaci krve v DK
- různé "školy" dávají některým polohám přednost
- analgezie a přání rodičky musí být vždy v souladu

Epidurální analgezie

THE JOURNAL OF
MATERNAL-FETAL
& NEONATAL
MEDICINE

http://informahealthcare.com/jmf
ISSN: 1476-7058 (print), 1476-4954 (electronic)

J Matern Fetal Neonatal Med, Early Online: 1–7
© 2015 Taylor & Francis. DOI: 10.3109/14767058.2015.1072156

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ORIGINAL ARTICLE

Foetal heart rate deceleration with combined spinal–epidural analgesia during labour: a maternal haemodynamic cardiac study

Herbert Valensise[1], Damiano Lo Presti[1], Grazia Maria Tiralongo[1], Ilaria Pisani[1], Giulia Gagliardi[1], Barbara Vasapollo[1], and Maria Grazia Frigo[2]

[1]*Department of Obstetrics and Gynaecology, Tor Vergata University, Ospedale Fatebenefratelli San Giovanni Calibita Isola Tiberina, Rome, Italy and* [2]*Department of Anaesthesiology, Ospedale Fatebenefratelli San Giovanni Calibita Isola Tiberina, Rome, Italy*

Abstract

To understand the mechanisms those are involved in the appearance of foetal heart rate decelerations (FHR) after the combined epidural analgesia in labour. Observational study done at University Hospital for 86-term singleton pregnant women with spontaneous labour. Serial bedside measurement of the main cardiac maternal parameters with USCOM technique; stroke volume (SV), heart rate (HR), cardiac output (CO) and total vascular resistances (TVR) inputting systolic and diastolic blood pressure before combined epidural analgesia and after 5′, 10′, 15′ and 20 min. FHR was continuously recorded though cardiotocography before and after the procedure. Correlation between the appearance of foetal heart rate decelerations and the modification of maternal haemodynamic parameters. Fourteen out of 86 foetuses showed decelerations after the combined spino epidural procedure. No decelerations occurred in the women with low TVR (<1000 dyne/s/cm^{-5}) at the basal evaluation. FHR abnormalities were concentrated in 39 women who presented elevated TVR values at the basal evaluation (>1200 dyne/s/cm^{-5}). Soon after the epidural procedure, the absence of increase in SV and CO was observed in these women. No variations in systolic and diastolic blood pressure values were found. The level of TVR before combined epidural analgesia in labour may indicate the risk of FHR abnormalities after the procedure. Low TVR (<1000 dyne/s/cm^{-5}) showed a reduced risk of FHR abnormalities. FHR decelerations seem to occur in women without the ability to upregulate SV and CO in response to the initial effects of analgesia.

Keywords

Combined epidural analgesia, FHR decelerations, labour, maternal cardiac function in pregnancy

History

Received 29 November 2014
Revised 28 June 2015
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Published online 28 August 2015

Can J Anesth/J Can Anesth (2014) 61:695–709
DOI 10.1007/s12630-014-0185-y

REPORTS OF ORIGINAL INVESTIGATIONS

The effects of epidural/spinal opioids in labour analgesia on neonatal outcomes: a meta-analysis of randomized controlled trials

Effets des opioïdes en péridurale/rachi pour l'analgésie du travail sur les aboutissements des nouveau-nés: une méta-analyse des études randomisées et contrôlées

Kai Wang, MSc · Liang Cao, MSc · Qian Deng, BSc · Li-Qiang Sun, MSc · Tian-Yu Gu, MSc · Jie Song, MD · Dun-Yi Qi, MD

Received: 11 August 2013 / Accepted: 15 May 2014 / Published online: 11 July 2014
© Canadian Anesthesiologists' Society 2014

Abstract

Purpose *Epidural/spinal opioids are increasingly used to relieve parturients' pain in labour. Some studies indicate that opioids can induce side effects in neonates, such as respiratory depression and neurobehavioural changes. This meta-analysis aimed to clarify the effects of opioids in labour analgesia on neonates.*

Source *PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), a… searched for relevant randomiz…*

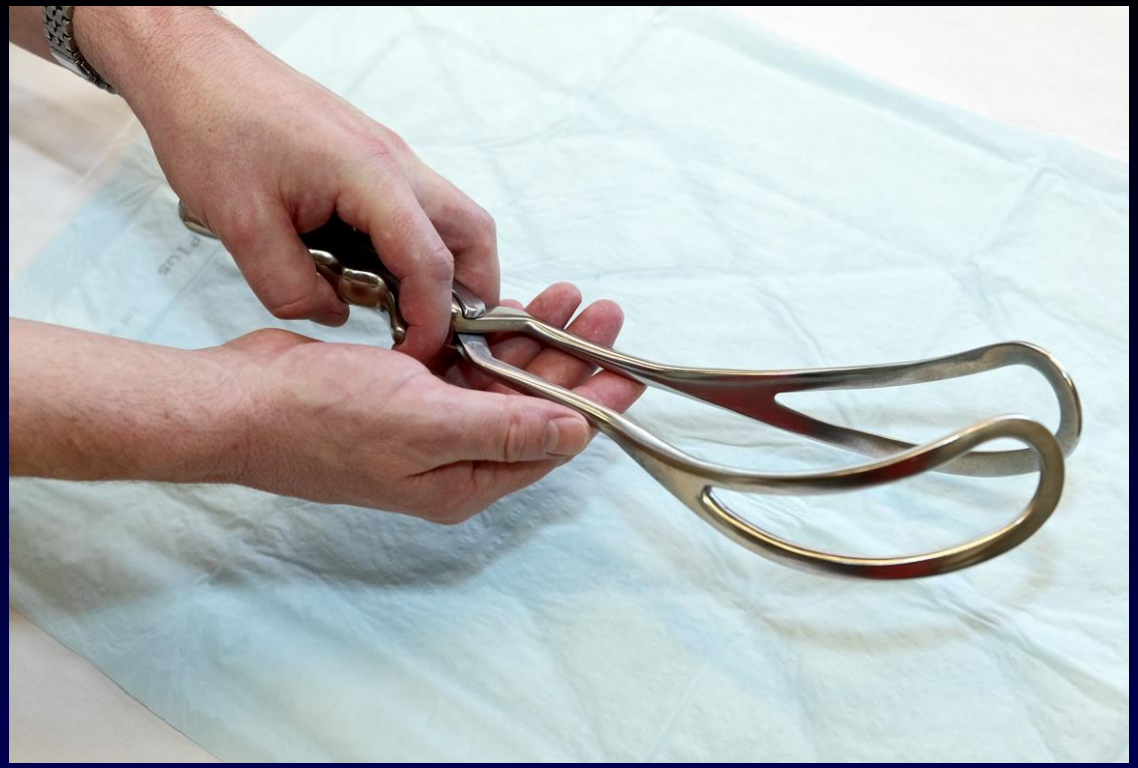
Conclusion *The common doses of fentanyl and sufentanil used with an epidural/spinal technique in labour analgesia are safe for neonates up to 24 hr after delivery. In future studies, more attention should be paid to the long-term side effects in neonates.*

(RCTs). The neonatal data of Apgar scores, Neurological and Adaptive Capacity Scores (NACS), and umbilical cord pH values were extracted. Statistical analyses were carried out using Review Manager 5.2 and Stata® 10.

Principal findings *Twenty-one trials with 2,859 participants were included in our meta-analysis. No difference in the incidence of Apgar scores < 7 was shown between the opioid and control groups at one …%, 95% confidence …; $I^2 = 0\%$, 95% CI: …0%, 95% CI: −2.0 to …to 50). No significant … at two hours (mean …70 to 1.01, $P = 0.62$; $I^2 = 0\%$, 95% CI: 0 to 79) and at 24 hr (MD −0.45, 95% CI: −1.36 to 0.46, $P = 0.33$; $I^2 = 3\%$, 95% CI: 0 to 26). Also, no significant differences were found in umbilical cord artery pH (MD −0.02, 95% CI: −0.06 to 0.03,*

This article is accompanied by an editoria… 2014; 61: this issue.

Author contributions *Kai Wang, Liang Cao, Jie Song,* and *Dun-Yi Qi* helped design the study. *Kai Wang, Liang Cao,* and *Dun-Yi Qi* helped conduct the study. *Kai Wang, Liang Cao, Qian Deng,* and *Tianyu Gu* helped analyze the data. *Kai Wang, Liang Cao,* and *Tianyu Gu* helped write the manuscript. *Kai Wang* and *Liang Cao*



6 % až do 93 % klešťových porodů/VEX

Littleford J.
Effects on the fetus and newborn of maternal analgesia and anesthesia.
Review. Can J Anesth, . 51, 2004; 6:. 586-609.

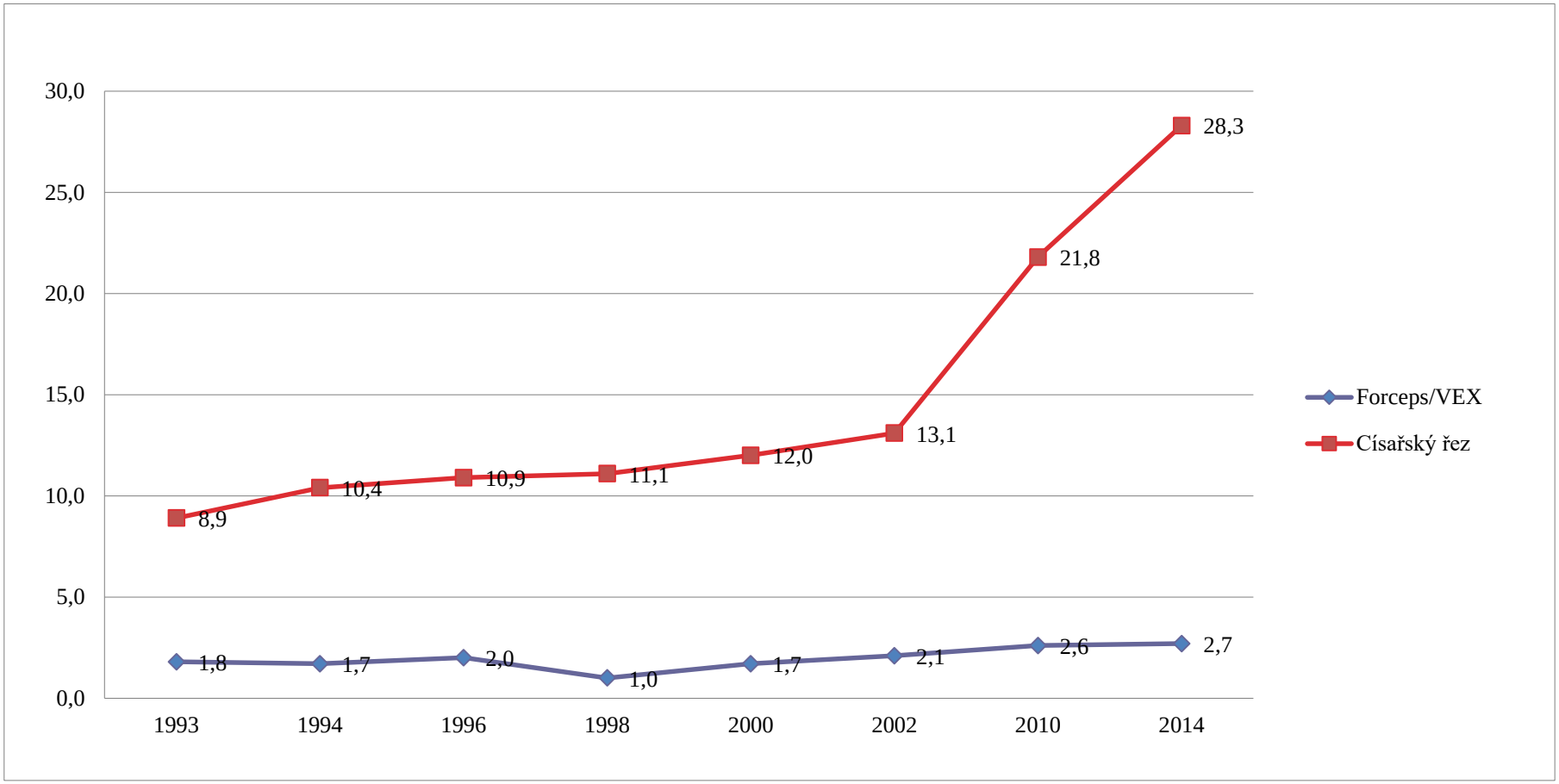
Forceps/vakuumextraktor

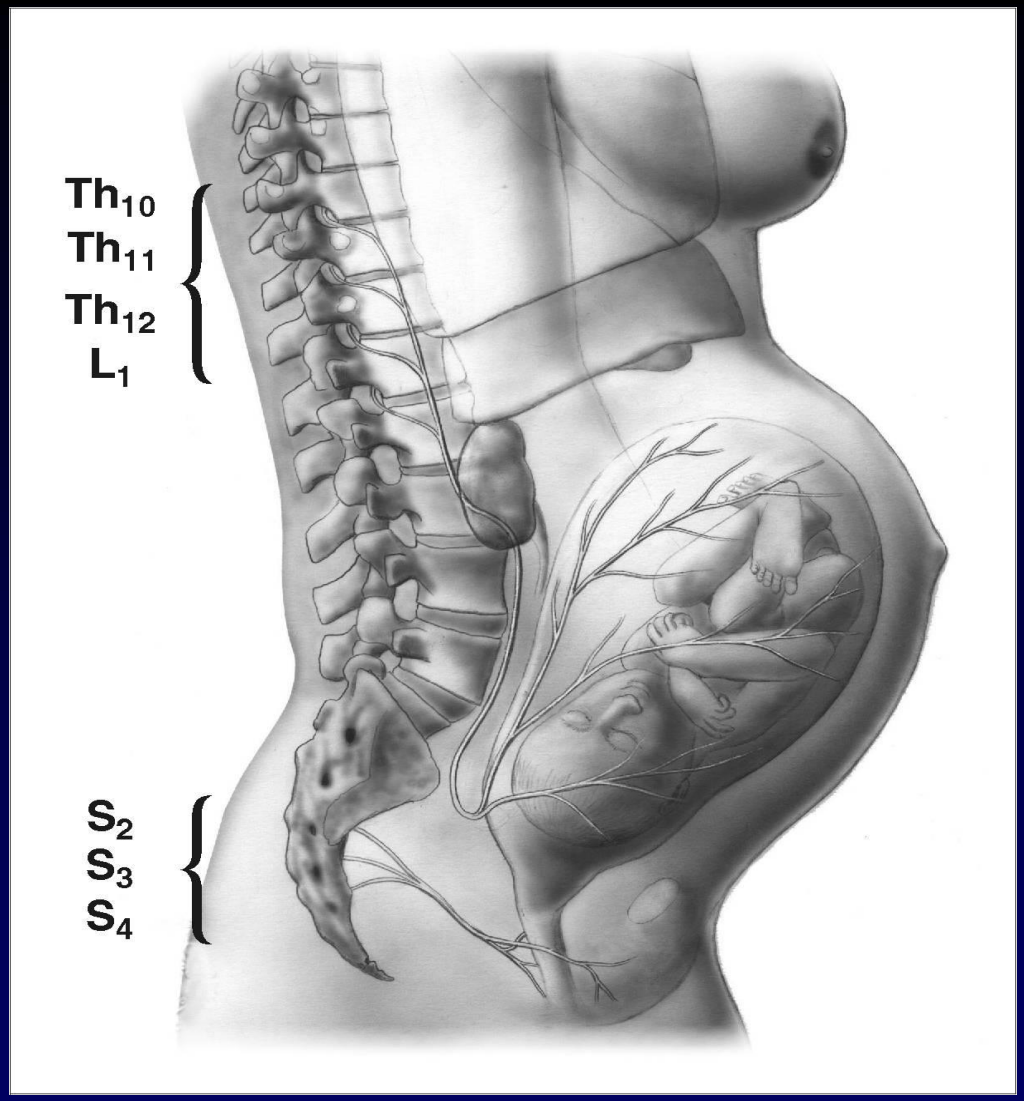
Instrumentálních porodů s epidurální analgezií ubývá

- je to známka lepší techniky epidurální analgezie
- jinak vedených porodů
- zlepšenou spoluprací anesteziolog &porodník

Roberts CL, Algert CS, Douglas I, Tracy SK, Peat B.
Trends in labour and birth interventions
among low-risk women in New South Wales
Obstet Gynaecol. 2002 May;42(2):176-81

ČR – četnost operačních porodů

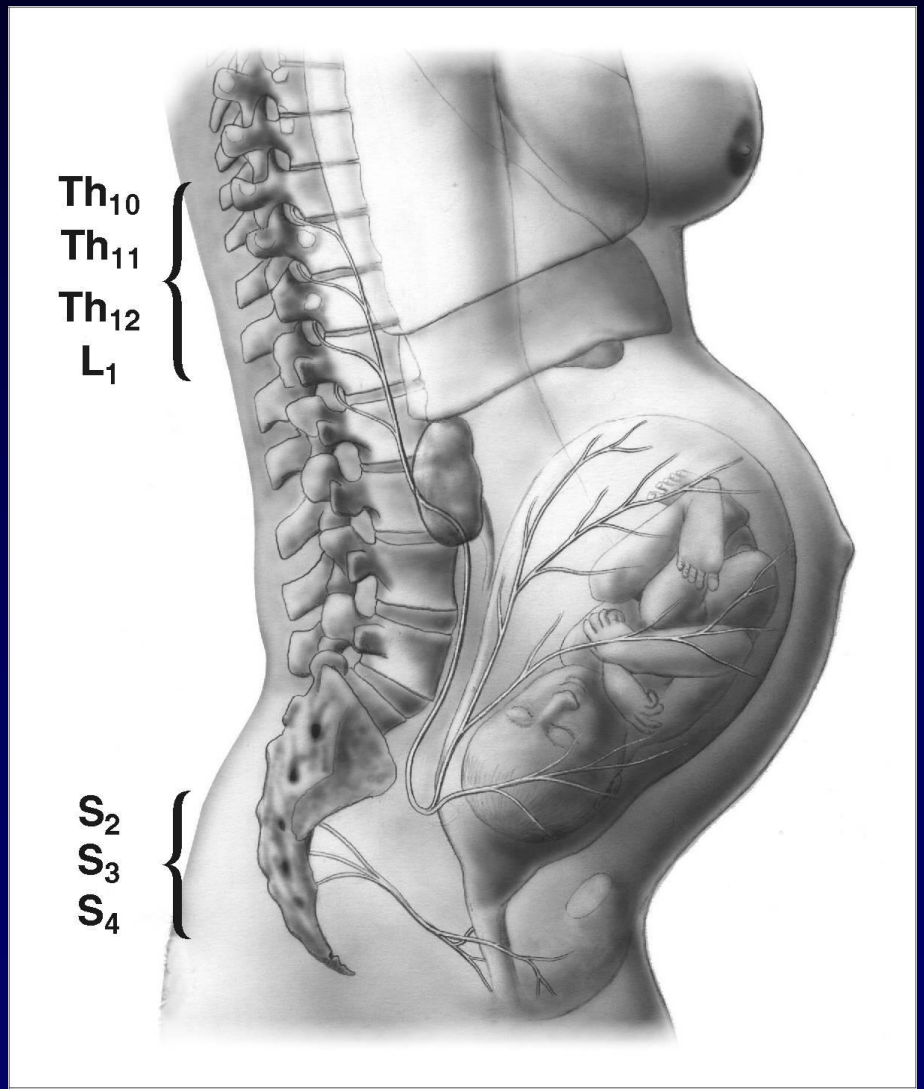




Velmi nízké dávkování lokálního anestetika

Diferenciální/segmentální blokáda

Operační porod - prevence



Medicine®

CLINICAL TRIAL/EXPERIMENTAL STUDY

OPEN

Comparison Between the Use of Ropivacaine Alone and Ropivacaine With Sufentanil in Epidural Labor Analgesia

Xian Wang, MD, MSc, Shiqin Xu, MD, MPH, Xiang Qin, MD, Xiaohong Li, MD, Shan-Wu Feng, MD, PhD, Yusheng Liu, MD, MSc, Wei Wang, MD, MSc, Xirong Guo, MD, PhD, Rong Shen, MD, Xiaofeng Shen, MD, MPH, and Fuzhou Wang, MD, PhD

Abstract: To compare the analgesic efficacy and safety of the sole local anesthetic ropivacaine with the combination of both local anesthetic ropivacaine and opioidergic analgesic sufentanil given epidurally on the labor pain control.

After institutional review board approval and patient consent, a total of 500 nulliparas requesting epidural labor analgesia were enrolled and 481 eventually were randomized into 2 groups: a sole local anesthetic group (ropivacaine 0.125%) and a combination of local anesthetic and opioidergic analgesic group (0.125% ropivacaine + 0.3 μg/mL sufentanil). After the test dose, a 10-mL epidural analgesic solution was given in a single bolus, followed by intermittent bolus injection of 10 to 15 mL of the solution. The primary outcome was the analgesic efficacy measured using Numerical Rating Scale (NRS) of pain. Other maternal and infant variables were evaluated as secondary outcomes.

A total of 346 participants completed the study. The median NRS pain score during the 1st stage of labor was significantly lower in the combination group 2.2 (interquartile range [IQR]: 1.8–2.7) comparing to the sole local analgesic group 2.4 (IQR: 2.0–2.8) ($P < 0.0001$). No significant difference was observed in NRS pain score prior epidural analgesia and during the 2nd stage of labor. Patients in both groups rated same satisfaction of analgesia. Patients in the sole local analgesic group experienced fewer side effects than those in the combination group (37.7% vs 47.2%, $P = 0.082$). The individual analgesia-related cost in the sole local analgesic group was less ($5.7 ± 2.06) than that in the combination group ($9.76 ± 3.54) ($P < 0.0001$). The incidence of 1-minute Apgar ≤ 7 was lower in the sole local analgesic group 2 (1.2%) than the combination group 10 (5.5%) ($P = 0.038$). No difference was found between other secondary outcomes.

The sole local anesthetic ropivacaine produces a comparable labor analgesic effect as the combination of both local anesthetic ropivacaine and opioidergic analgesic sufentanil at different stages of labor ($\Delta_{NRS} = 0.2$) but the former has less side effects, lower cost, and less incidence of lower 1-minute Apgar scoring. These results imply the necessity of a systematic reevaluation of epidural labor analgesia with sole local anesthetics against combination regimens of local anesthetics and other opioids.

(*Medicine* 94(43):e1882)

Abbreviations: IQR = interquartile range, ITT = intention-to-treat, NRS = Numerical Rating Scale, PCEA = patient controlled epidural analgesia, PP = per protocol, RCT = randomized controlled trial, VAS = Visual Analog Scale.

Editor: Wei Mei.
Received: March 25, 2015; revised: September 28, 2015; accepted: October 2, 2015.
From the Department of Anesthesiology, Nanjing Maternity and Child Health Care Hospital Affiliated to Nanjing Medical University, Nanjing,

MEDICAL SCIENCE MONITOR

META-ANALYSIS

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Epidural Analgesia with Amide Local Anesthetics, Bupivacaine, and Ropivacaine in Combination with Fentanyl for Labor Pain Relief: A Meta-Analysis

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

AB 1 Yiyang Li
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Source of support: Departmental sources

Background: The study compares the effectiveness of bupivacaine and fentanyl (BUPI-FEN) and ropivacaine and fentanyl (ROPI-EFN) in epidural analgesia for labor pain through a meta-analysis of relevant randomized clinical trials.

Material/Methods: Multiple electronic databases were searched using appropriate MeSH terms and keywords for original English language research papers published between 1990 and March 2014. Meta-analyses results were based on the mean differences between the groups as well as odds ratios where appropriate. Statistical heterogeneity amongst the included studies was tested by I^2 index.

Results: Nine studies that met the inclusion criteria were selected for analysis which consisted of 556 parturient patients. The duration of the second stage of labor was significantly shorter in the BUPI-FEN group by a mean of –6.87 (–10.98, –2.77; $P<0.002$). On the other hand, the ROPI-FEN group had a significantly lower incidence of motor blockade by a mean of 0.31 (0.18, 0.51; $P<0.00001$). A positive relationship between the amide local anesthetic concentration and the number of women having motor blockade was observed, but a negative relationship between fentanyl concentration and the number of women experiencing a motor block. Moreover, a positive correlation was found between the concentration of ropivacaine and the incidence of instrumental delivery and between the concentration of bupivacaine and the incidence of cesarean delivery.

Conclusions: In combination with fentanyl, bupivacaine and ropivacaine exhibit comparable efficacy and safety. However, BUP-FEN analgesia led to a shortened second-stage labor and ROPI-FEN resulted in a significantly lower incidence of motor block.

MeSH Keywords: Anesthesia, Caudal • Anesthesia, Spinal • Injections, Spinal

Full-text PDF: http://www.medscimonit.com/abstract/index/idArt/892276

Ovlivnění porodu = dítěte

Přímé ovlivnění plodu/novorozence

- průnik anestetik/analgetik přes placentu

  bupi-, ropi-, levobupivakain, adjuvans …..

Není dnes problém


Naropin®
ropivacain. hydrochlorid.
2mg/ml 10 ml inject.
AstraZeneca
LOT GK 1022
EXP. 10-2008
Marcaine® 0,5%
10 ml
CHIROCAINE®
5 mg/ml
2 ml

Dokonce i pro předčasný porod…

Lokální anestetik a dávkování

Stará farmaka

Marcain® 0,125%..... 6 ml

Nová farmaka

Chirocain ® 1,25%..... 6 ml

Naropin ® 0,1%..... 6 ml

Minimální dávkování

„ homeopatické dávky“

lokálních anestetik

EJA

Eur J Anaesthesiol 2014; **31**:190–196

ORIGINAL ARTICLE

Epidural neostigmine and clonidine improves the quality of combined spinal epidural analgesia in labour

A randomised, double-blind controlled trial

Thomas Boogmans, Jan Vertommen, Tom Valkenborgh, Sarah Devroe, Eva Roofthooft and Marc Van de Velde

BACKGROUND In labour analgesia, the combination of epidural clonidine and neostigmine as adjuvants to local anaesthetics and opioids is under investigation to provide a longer duration of initial spinal analgesia with local anaesthetics and/or opioids.

OBJECTIVES To evaluate the quality of analgesia with epidural neostigmine and clonidine, added to initial spinal analgesia, and to test the hypothesis that the incidence of breakthrough pain could be reduced and patient satisfaction improved.

DESIGN Randomised double-blind controlled trial.

SETTING University Hospital of Leuven in Belgium.

PARTICIPANTS One hundred healthy, term (≥37 weeks) parturients.

INTERVENTION All patients received initial spinal analgesia with ropivacaine and sufentanil. Fifteen minutes after spinal injection, 10 ml of a solution containing neostigmine 500 μg and clonidine 75 μg, or 10 ml physiological saline alone was injected epidurally. Patient-controlled analgesia with ropivacaine and sufentanil was then made available.

MAIN OUTCOME MEASURES The incidence of breakthrough pain, patient satisfaction and hourly ropivacaine use.

RESULTS Ropivacaine use decreased significantly by 32.6% in the neostigmine/clonidine (NC) group [11.6 ± 4.2 vs. 17.2 ± 5.3 mg h^{-1} in the NC group and placebo (P) group, respectively] and a significant difference in breakthrough pain was noted; only 3% in group NC had breakthrough pain compared with 36% in group P. Patient satisfaction was better after 1 h in group NC compared with group P ($P<0.05$) but not different after 24 h (visual analogue scale score 97 ± 5 vs. 88 ± 11 mm after 1 h; 92 ± 10 vs. 90 ± 14 mm after 24 h).

CONCLUSION The administration of epidural clonidine and neostigmine as adjuvants, following spinal injection of local anaesthetic, improves the quality of analgesia with less ropivacaine consumption, higher patient satisfaction 1 h after administration and a decrease in breakthrough pain compared to standard combined spinal and epidural analgesia and patient-controlled epidural analgesia with ropivacaine and sufentanil.

Published online 16 August 2013

Kojení a neuraxiální analgezie

Nejsou důkazy

o negativním vlivu na průběh kojení

(dnešní stav - druh & dávkování léků)

- 24 hod. post partum
- 6 týdnů
- délka kojení

Ovlivnění porodu = dítěte

Nepřímé ovlivnění plodu/novorozence (matka!!!)

- zvýšená teplota matky
- zvýšená potřeba oxytocinu

Ultrazvuk v rukou anesteziologa

Podání neuroaxiální blokády (NB)= informace o anatomii

- identifikace střední čáry
- lokalizace epidurálního prostoru
- měření vzdálenosti kůže - lig. llavum
- určení úhlu jehly

Ultrazvuk:

- zlepšení kvality
- ↓ komplikací resp. ↑ bezpečnosti práce
- standard pro podání NB? (v budoucnu pravděpodobně ANO)

Použití ultrazvuku

Pokles počtu pokusů

Vzestup úspěšné inzerce

Redukce chyb

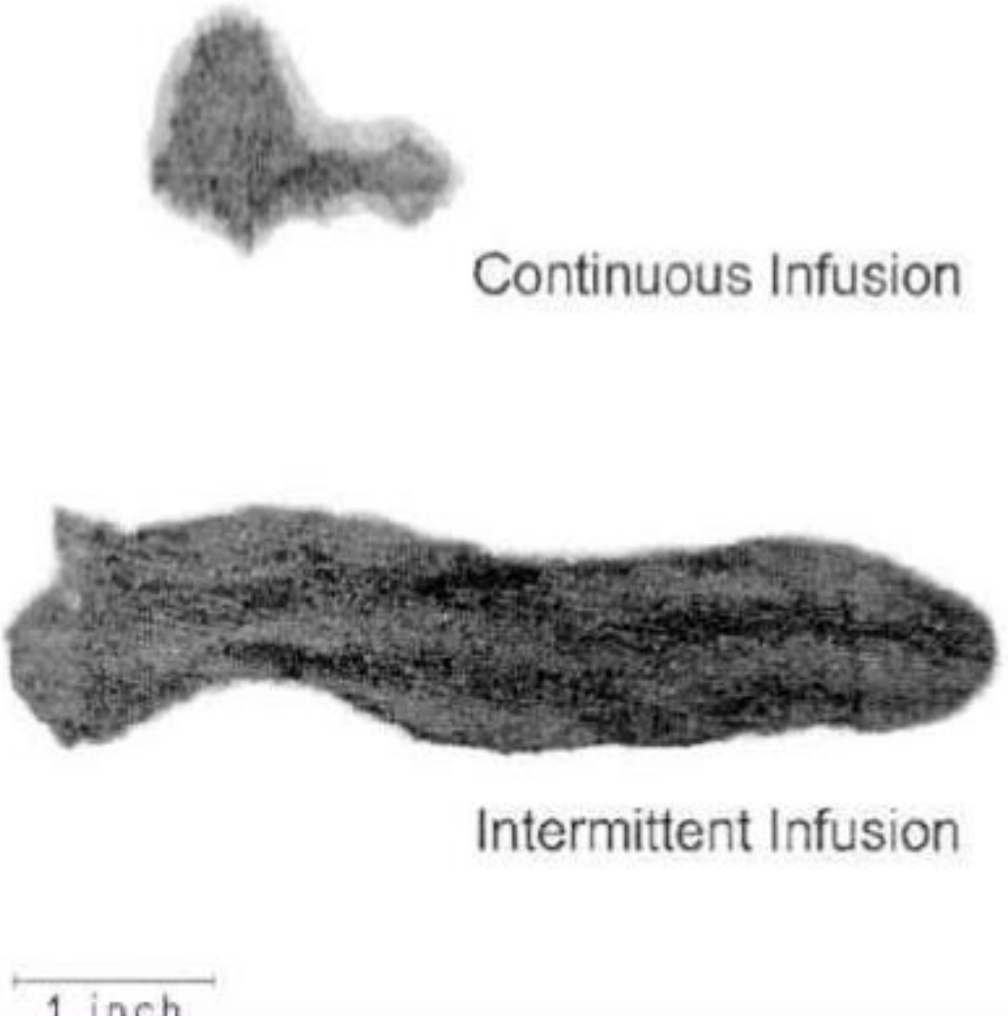
Přístrojové vybavení

- infúzní pumpy
- PCEA
- CI – PCEA
  (computer – intergrated)

Current Management of Labour Analgesia – Epidural or CSE, Bolus or Infusions?

Dr Mark Esler
Queen Charlotte's and Chelsea Hospital
Imperial College Healthcare NHS Trust
1st October 2014

Simulated epidural spread: continuous infusion vs 'intermittent infusion' i.e. bolus



Smiths CADD-Solis Pump

DOI: 10.1111/1471-0528.12854
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Routine labour epidural analgesia versus labour analgesia on request: a randomised non-inferiority trial*

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Objective To assess the effect on mode of delivery of the routine use of labour epidural analgesia (EA) compared with analgesia on request.

Design Randomised non-inferiority trial.

Setting One university and one non-university teaching hospital in The Netherlands.

Population Women with a singleton pregnancy in cephalic presentation beyond 36 + 0 weeks' gestation.

Methods Participants were randomly allocated to receive either routine EA or analgesia on request. Intention-to-treat (ITT) and per-protocol (PP) analyses were performed, with confidence intervals (CI) calculated for the differences in percentages or means.

Main outcome measures Rate of operative delivery (instrumental vaginal or caesarean), labour characteristics, and adverse labour and neonatal outcomes.

Results A total of 488 women were randomly allocated to the routine EA group, 89.3% (208/233) received EA. According to ITT analysis, 34.8% (81/233) women in the routine EA group had an operative delivery, compared with 26.7% (68/255) in the analgesia on request group (difference 8.1%, 95% CI −0.1 to 16.3). The difference in rate of operative deliveries according to the PP analysis was statistically significant (difference 8.9%, 95% CI 0.4 to 17.4). Inferiority of EA could not be rejected, as in both analyses the upper bound of the confidence interval exceeded the pre-specified inferiority criterion of +10%. Women in the routine EA group had more adverse effects, including hypotension (difference 9.5%, 95% CI 4.2 to 14.9), and motor blockade (difference 6.8%, 95% CI 1.1 to 12.5).

Conclusion Non-inferiority of routine EA could not be demonstrated in this trial. Routine EA use is likely to lead to more operative deliveries and more maternal adverse effects. The results of our study do not justify routine use of EA.

Keywords Caesarean section, epidural analgesia, instrumental vaginal delivery, labour analgesia analgesia, mode of delivery,

Avraham Sarit, Amit Sokolov and Ariel Many*

Is epidural analgesia during labor related to retained placenta?

Abstract

Objectives: To explore the influence of epidural analgesia on the course of the third stage of labor and on the incidence of the complete retained placenta as well as retained parts of the placenta.

Study design: This is a population-based cohort study in a tertiary medical center. We collected data from all 4227 spontaneous singleton vaginal deliveries during 6 months and compared the incidence of retained placenta in deliveries with epidural analgesia with those without analgesia. Multivariable logistic regression was used to control for possible confounders.

Results: More than two-thirds of the women (69.25%) used epidural analgesia during their delivery. A need for intervention due to placental disorder during the third stage of labor was noted in 4.2% of all deliveries. Epidural analgesia appeared to be significantly (P=0.028) related to placental disorders compared with no analgesia: 4.8% vs. 3%, respectively. Deliveries with manual interventions during the third stage, for either complete retained placenta or suspected retained parts of the placenta, were associated with the use of epidural analgesia (P=0.008), oxytocin (P=0.002) and older age at delivery (P=0.000), but when including all factors in a multivariable analysis, using a stepwise logistic regression, the factors that were independently associated with interventions for placental disruption during the third stage of delivery were previous cesarean section, oxytocin use and, marginally, older age.

Conclusions: Complete retained placenta and retained parts of the placenta share the same risk factors. Epidural analgesia does not directly influence the incidence of complete retained placenta or retained parts, though clinically linked through increased oxytocin use. The factors that were independently associated with interventions for placental disruption during the third stage of delivery were previous cesarean section, oxytocin use and older age.

Keywords: Oxytocin; post-partum hemorrhage; retained placenta.

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Introduction

Retained placenta (RP) is a major risk factor for post-partum hemorrhage (PPH) and was reported in up to 3% of vaginal deliveries, with higher rates in developed countries [1, 2]. Contributing factors were suggested to be related to disruption of placental-myometrial interface, as in cases of previous abortion or previous uterine injury, and to augmented or induced labor [1]. Accepted steps for active management of the third stage of labor are oxytocin administration and uterine massage. With failure of these actions, manual removal of the placenta (MROP) is usually applied, soon enough to avoid PPH but adequate to allow spontaneous separation of the placenta [3]. The cut-off time for MROP changes according to different protocols and guidelines. According to the World Health Organization (WHO) guidelines, MROP can be delayed up to an hour following the delivery in the absence of hemorrhage [4].

A recent case-control study from a single center [5] suggested that, among other risk factors, epidural analgesia was related to increased risk of retained placenta in a multivariable logistic regression analysis. This finding

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ORIGINAL ARTICLE

Does epidural analgesia play a role in postpartum urinary incontinence? Medium-term results from a case–control study

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Abstract

Objective: To evaluate the medium-term effect of epidural analgesia (EA) on the possible onset of postpartum urinary incontinence (PUI).

Methods: We performed a single-centre, retrospective case–control study. At 8-week postpartum, we recruited a cohort of women who had term singleton pregnancy and foetus in cephalic presentation, and divided in six groups: (1) vaginal delivery without episiotomy, without EA; (2) vaginal delivery without episiotomy, with EA; (3) vaginal delivery with episiotomy, without EA; (4) vaginal delivery with episiotomy, with EA; (5) emergency caesarean section without previous EA during labour and (6) emergency caesarean section with previous EA during labour. For each woman, we recorded age, Body Mass Index (BMI) and the result of the following questionnaire for urinary incontinence: International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF), Incontinence Impact Questionnaire-7 (IIQ-7) and Urogenital Distress Inventory-6 (UDI-6). Subsequently, we compared group 1 versus group 2, group 3 versus group 4 and group 5 versus group 6.

Results: We did not evidence any significant difference for age, BMI and incontinence scores between groups 1 and 2, 3 and 4, and 5 and 6.

Conclusions: EA did not affect the onset of PUI in medium-term, regardless the mode of delivery.

Keywords

Epidural analgesia, Incontinence Impact Questionnaire-7, Incontinence Questionnaire Short Form, postpartum urinary incontinence, Urogenital Distress Inventory-6

History

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Early versus late initiation of epidural analgesia for labour (Review)

Sng BL, Leong WL, Zeng Y, Siddiqui FJ, Assam PN, Lim Y, Chan ESY, Sia AT

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This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2014, Issue 10

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Early versus late initiation of epidural analgesia for labour

Incidence císařského řezu

Incidence forcepsu/Vex

Délka I.doby porodní

Délka II. doby porodní

Apgar skóre < 7 v 1. minutě

Apgar skóre < 7 v 5. minutě

pH pupečníkové krve/arterie

pH pupečníkové krve/véna

Zkalená plodová voda

Hypotenze matky

Zvýšená teplota matky

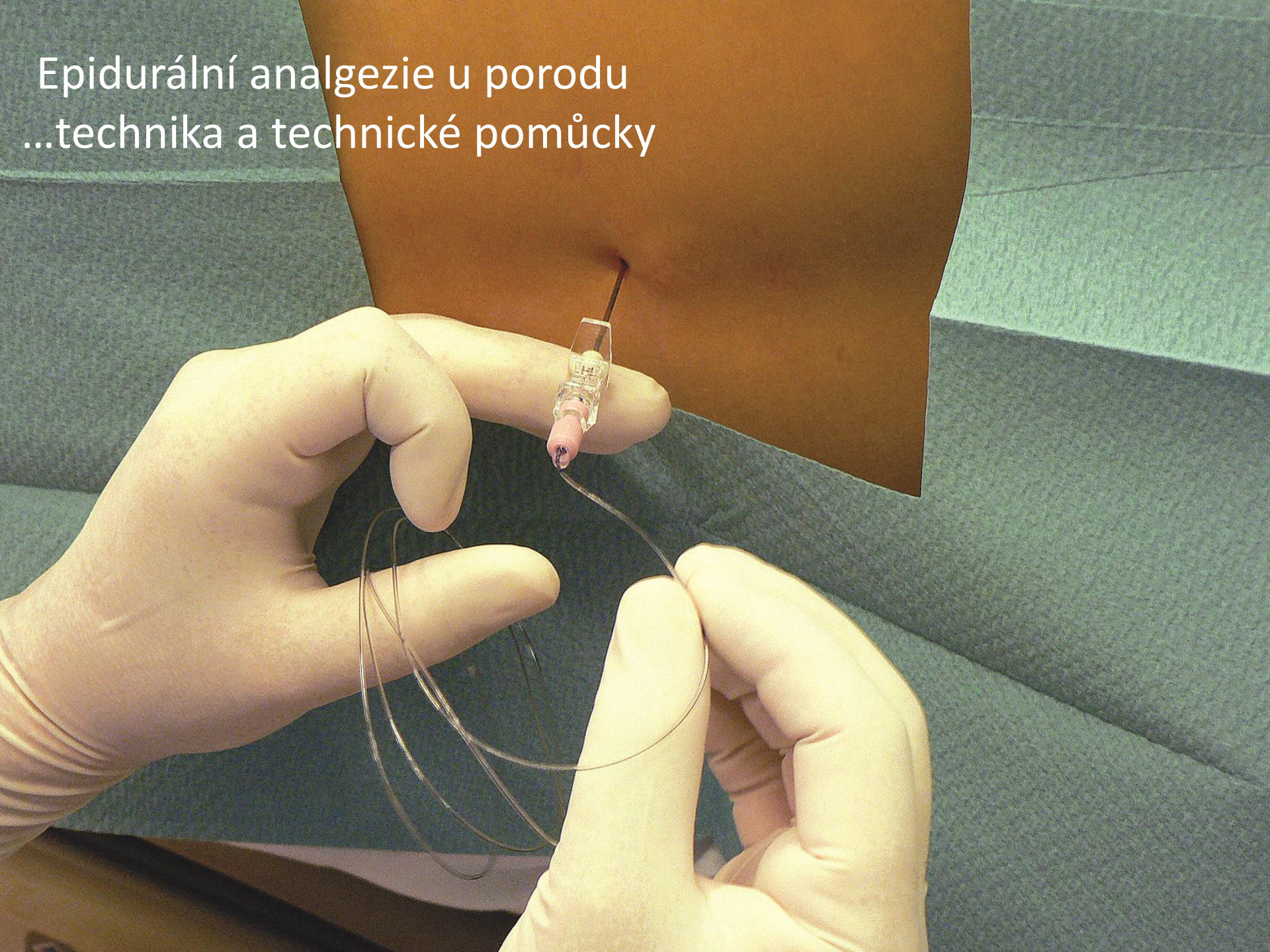
Malpozice plodu

Cochrane Database Syst Rev. 2014 Oct 9;10:CD007238

Early versus late initiation of epidural analgesia for labour.

Sng BL[1], Leong WL, Zeng Y, Siddiqui FJ, Assam PN, Lim Y, Chan ES, Sia AT.

Epidurální analgezie u porodu
…technika a technické pomůcky



Epidural Pressure Measurements from Various BMI Obstetric Patients

Neil Vaughan[1], Venketesh N. Dubey[1], Michael Y. K. Wee[2], Richard Isaacs[2]

[1]Faculty of Science and Technology, Bournemouth University, UK
[2]Poole Hospital NHS Foundation Trust, UK

1 Background

To date there have been no studies relating epidural pressure and ligament thickness changes with varying Body Mass Indices (BMI). This is required for simulators to model accurate pressures for various BMIs with realistic feeling.

The aim of this study was to measure changing pressures of the saline inside the syringe during Tuohy epidural needle insertions for obstetric parturients of various BMI. This could identify correlations between BMI and epidural insertion saline pressure, and thicknesses and depths of ligaments and epidural space as measured from MRI and ultrasound scans.

Further benefit of measuring pressure differences between various BMI patients is to allow a patient-specific epidural simulator to be developed which has not been achieved before. Another aim was to assess the suitability of our device for use in-vivo. Previously for validation of the measurement system we conducted needle insertion trial with porcine [1].

There are issues with current procedural skills training. Epidural is one of the hardest anaesthetic skills to learn due to difficulty judging loss of resistance (LOR) and can take up to 90 attempts to become competent. Currently novice anaesthetists learn in-vivo because there are limited ways to practice the procedure. Epidural simulation can provide a method to allow safe and controlled practice increasing

NIAA funding was received for the trial which was registered by UKCRN Portfolio ID 12955. Ethical approval was obtained from National Research Ethics Service (NRES) to conduct this clinical trial.

Parturients were given explanation and information sheets about the study prior to labour. Recruitment of parturients occurred after full informed consent was obtained. Two senior anaesthetists performed all epidurals and ultrasound scans. Parturients had their MRI scans within 72 hours post-delivery.

A custom designed and built electronic data transmitter and receiver device was developed. The benefit of a wireless system is that it enables epidural pressure measurements to be transmitted to a remote computer. This minimises the equipment required and protects privacy for the parturient.

The software that receives the wireless pressure data on the laptop can run at various speeds and plots a graph to the screen whilst writing data into a stored file. The laptop was placed in another room. Anaesthetists insert the needle as normal and data was recorded throughout entire procedure.

To connect the measuring device the only extra component required is a three way tap was introduced with manometer line allowing the anaethetists to set up the device quickly (Fig. 1). Force applied onto the plunger increases pressure of saline in the syringe which the sensor measures.

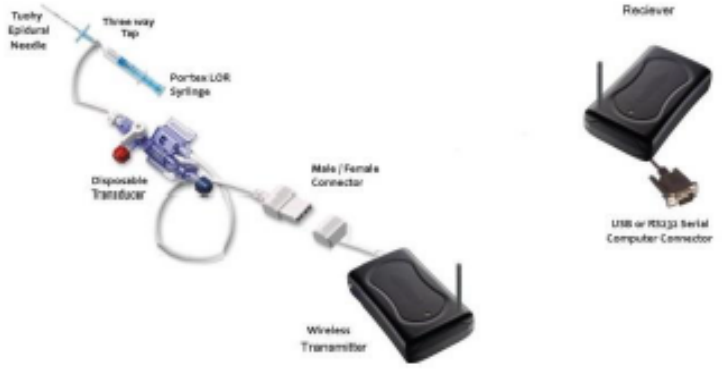
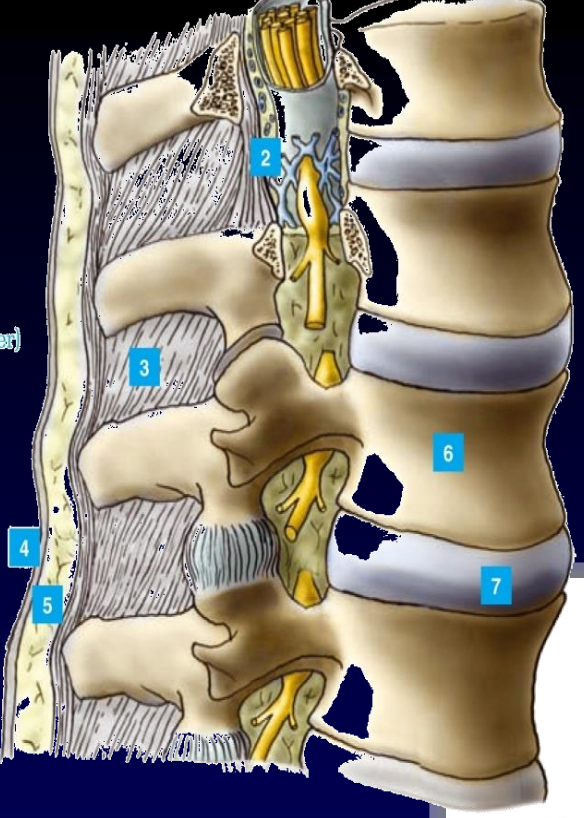


Fig. 1. Developed wireless sterile pressure measuring device.



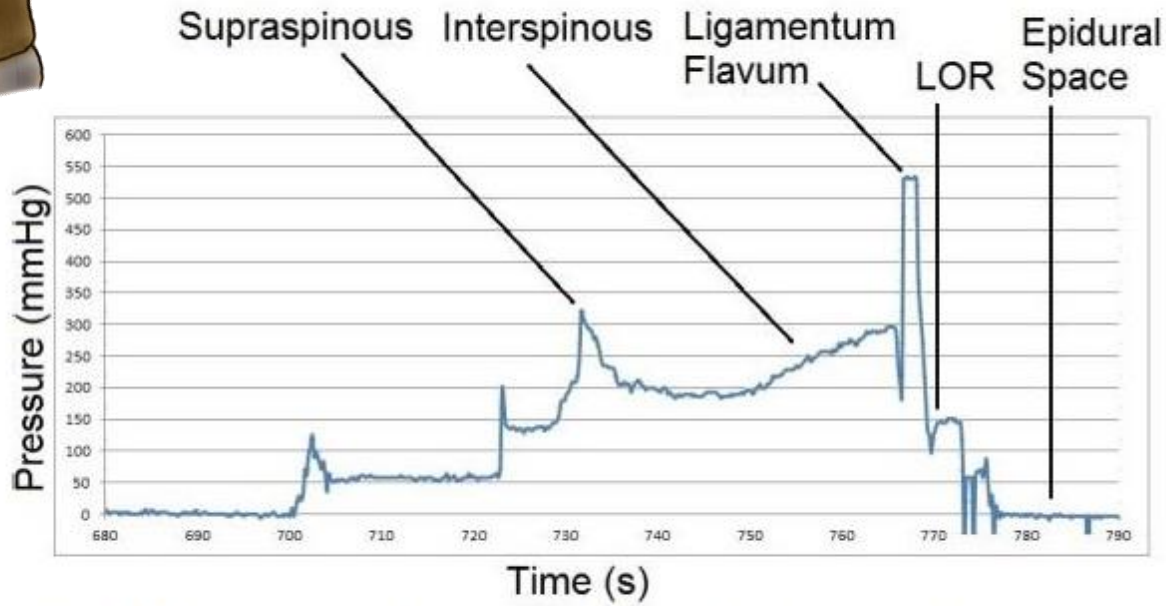


Fig. 4. Ligament features identified on epidural pressure trace.

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SHORT COMMUNICATION

Epidrum®: a new device to identify the epidural space with an epidural Tuohy needle

Atsushi Sawada · Natsumi Kii · Yusuke Yoshikawa · Michiaki Yamakage

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© Japanese Society of Anesthesiologists 2011

Abstract Epidrum® is an optimal pressure, loss of resistance device for identifying the epidural space. We investigated the usefulness of Epidrum versus the loss of resistance or hanging drop techniques while performing epidural anesthesia. Eighty adult patients who were scheduled for elective surgery under lumbar epidural anesthesia were randomized into two groups. The first group (Epidrum group) consisted of 40 adult patients who were scheduled for epidural anesthesia using Epidrum. The second group (control group) consisted of 40 adult patients who were scheduled for epidural anesthesia using the loss of resistance or hanging drop technique. We recorded the time required to identify the epidural space and outcomes of epidural catheterization. The attending anesthesiologists were also questioned regarding the ease of control of the Tuohy needle and of epidural space identification with each method. The time required to perform epidural anesthesia was significantly shorter in the Epidrum group than in the control group [28 s (10–76) vs. 90 s (34–185); median (interquartile range)] ($p < 0.05$). Tuohy needle control was significantly easier in the Epidrum group than in the control group ($p < 0.05$). Epidrum is useful for performing epidural anesthesia quickly while obtaining good Tuohy needle control.

Keywords Epidural space · Tuohy needle · Epidrum®

Introduction

Anesthesiologists have routinely identified the epidural space by the loss of resistance or hanging drop techniques while performing epidural anesthesia [1]. However, a clear loss of resistance cannot be felt in patients with ligamentum flavum weakness [2]. Furthermore, the hanging drop technique might be regarded as an illogical choice for identifying the lumbar epidural space because of the absence of a true negative pressure in this region [3]. Epidrum® (Exmoor Innovations Ltd., Somerset, UK) is an optimal, constant, low-pressure, loss of resistance device for identifying the epidural space. Interposed between the Tuohy needle and syringe (Fig. 1a), the device is charged with air to expand its diaphragm (Fig. 1b). When the Tuohy needle is advanced, sudden collapse of the diaphragm signals the needle's penetration into the epidural space (Fig. 1c). We investigated the usefulness of Epidrum compared with the conventional loss of resistance or hanging drop techniques while performing epidural anesthesia.

This open, single-center trial was approved by the Internal Review Board of Sapporo Medical University Hospital (Sapporo, Japan), and written informed consent was obtained from each patient. We studied 80 adult patients [American Society of Anesthesiologists (ASA)

This paper was presented in part at the 29th annual meeting of the Japan Society of Clinical Anesthesia, Hamamatsu, Japan, 29–31

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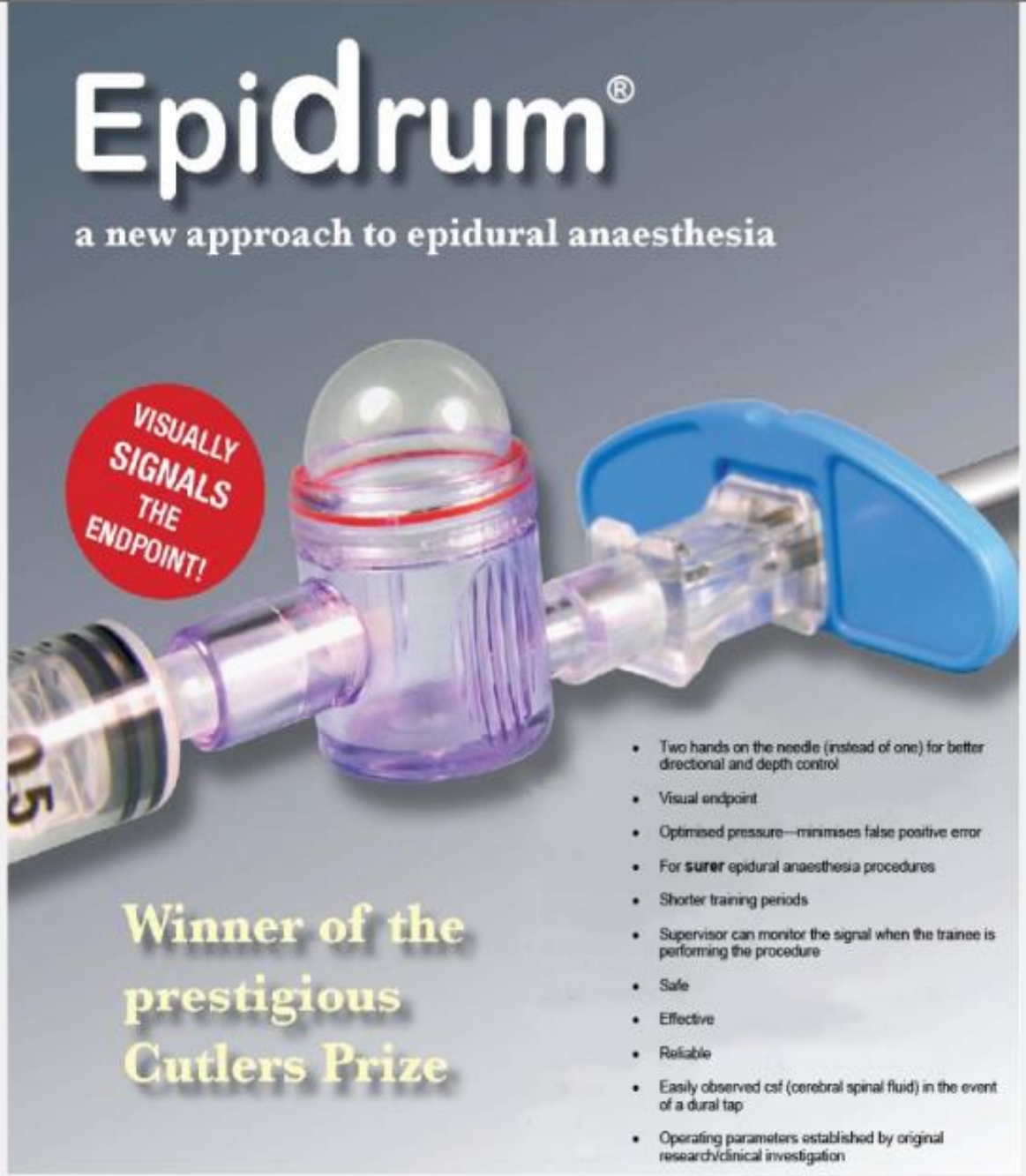
a new approach to epidural anaesthesia



- Two hands on the needle (instead of one) for better directional and depth control
- Visual endpoint
- Optimised pressure—minimises false positive error
- For **surer** epidural anaesthesia procedures
- Shorter training periods
- Supervisor can monitor the signal when the trainee is performing the procedure
- Safe
- Effective
- Reliable
- Easily observed csf (cerebral spinal fluid) in the event of a dural tap
- Operating parameters established by original research/clinical investigation

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Epidurální analgezie
- z porodnického hlediska nejvýhodnější regulátor porodního stresu

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INKA

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Porod nemusí až tak bolet

… o tlumení porodních bolestí

… aneb analgezie „na míru“

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