

Invasive Therapieverfahren in der Akutschmerztherapie

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Ärztlicher Direktor

Vorstand der Abt. f. Anästhesie, Intensivmedizin u. Schmerztherapie

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Disclosure:

No conflict of interest

**Vortragshonorare:
BBraun
Sintetica**



Akutschmerzen:

Schmerzen mit einer Dauer von unter 3 Monaten, denen in der Regel eine offensichtliche Gewebeschädigung zugrunde liegt.

Eine komplexe, unangenehme Erfahrung mit emotionalen, kognitiven und sensorischen Komponenten, die als Reaktion auf eine Gewebeschädigung auftritt.



Peri-/Post-OP Schmerz

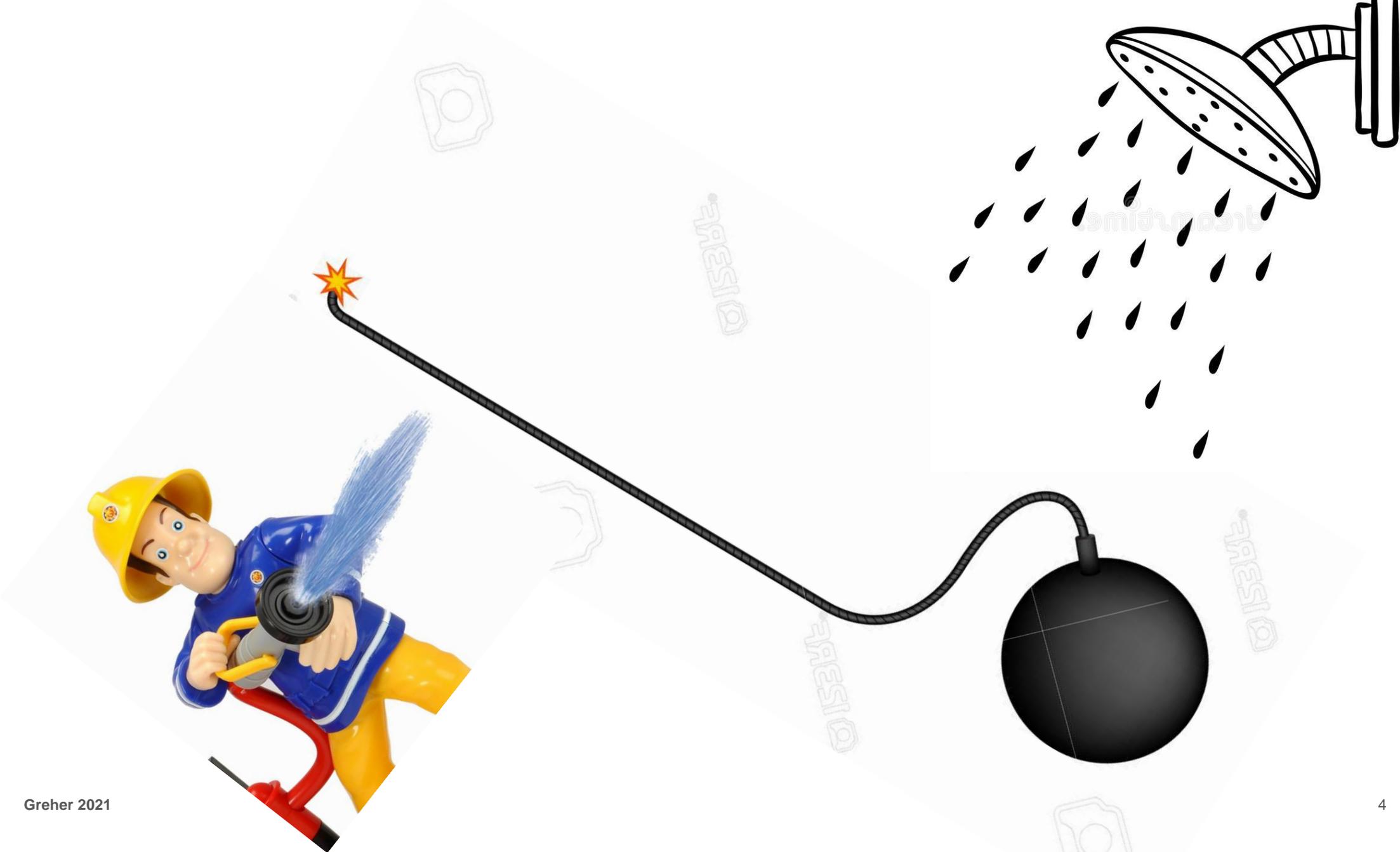
Trauma, Notfall

Herpes Zoster akut

Akute Kopfschmerzformen

Akuter Diskusprolaps

Wehenschmerz



Invasive Therapieverfahren in der Akutschmerztherapie

Intermuskuläre Tender-Point Infiltrationen

Neuraxiale Blockaden

- Spinalanästhesie
- Epiduralanästhesie (translaminär, transforaminal, caudal)

Periphere Blockaden

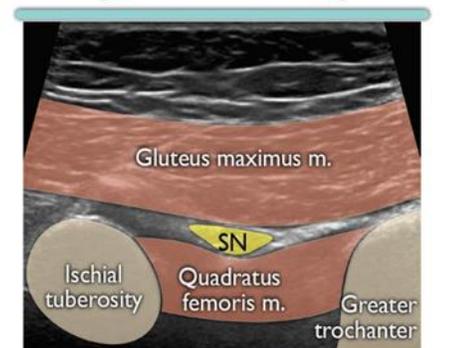
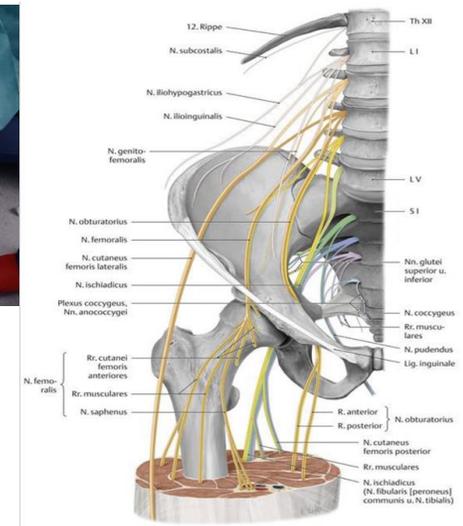
- Klassische Plexus- oder Nervenblöcke (Nerv als sichtbare Zielstruktur)
- Fascial plane blocks (TAP, QLB, ESPB, ...)

Sympathikusblockaden (Ganglion stellatum, ...)

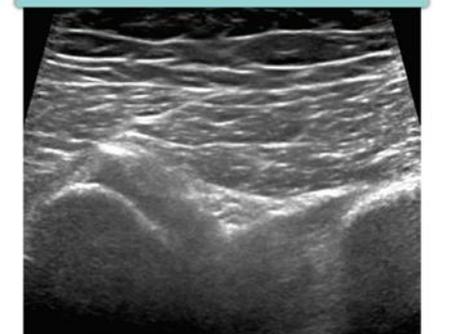
Intra-/ Periartikuläre Infiltrationen und LIAs

Single Shot LA (evtl. Adjuvantien) oder Kontinuierliche Verfahren (Katheter)

Guidance: Blind, LOR, NS, **US**, Rö, CT, ...



Medial Lateral



Pain Intensity on the First Day After Surgery Gerbershagen et al., Anesthesiology April 2013

50 523 Patienten
179 OP-Gruppen

QUIPS-Daten

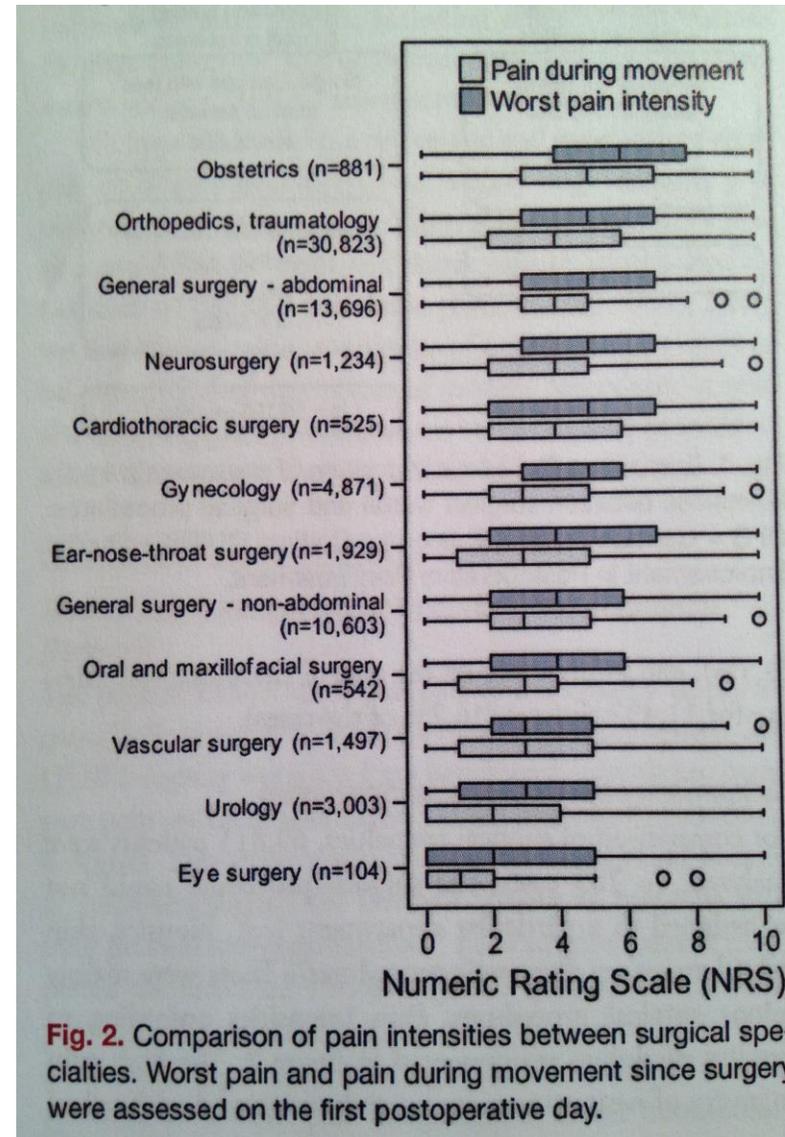


Fig. 2. Comparison of pain intensities between surgical specialties. Worst pain and pain during movement since surgery were assessed on the first postoperative day.

Facts: Regionalanästhesie in Orthopädie und Traumatologie

- Reduierte 30-Tage Mortalität (rel. Risikored. von 58%¹, 0,1% vs. 0,18%²)
- Reduzierte Wund- bzw. Protheseninfektrate (odds ratio 0,77)³
- Weniger postoperative kognitive Dysfunktionen⁴
- Höhere Patientenzufriedenheit⁵
- Bessere postoperative Schmerztherapie, weniger PONV⁶
- Geringerer Blutverlust und Konservenbedarf⁷
- Kürzere Aufenthaltsdauern¹
- Geringere Quote an Intensivstations-Aufnahmen⁸
- Weniger postOP chronische Schmerzen⁹
- **Relevant** je höher ASA-Klasse und Alter¹⁰

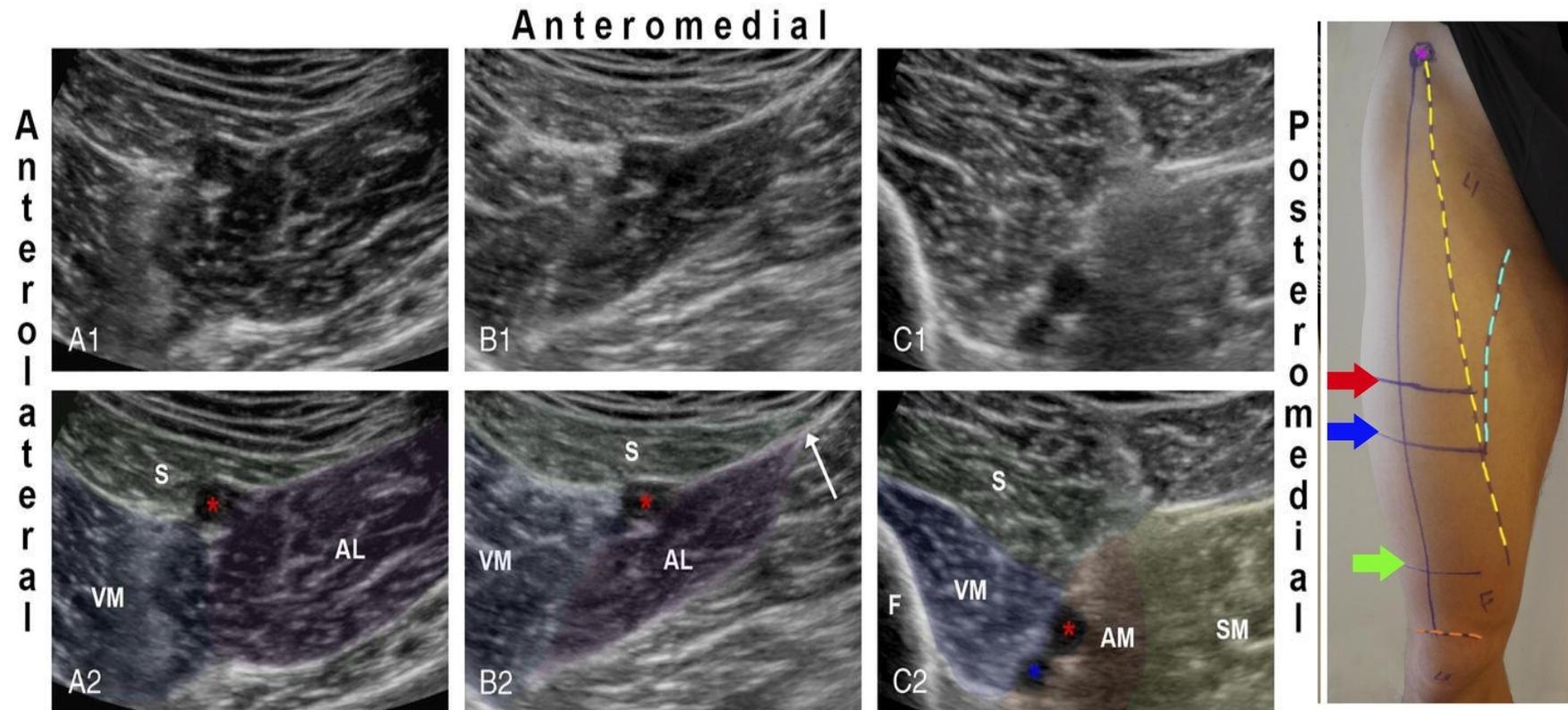


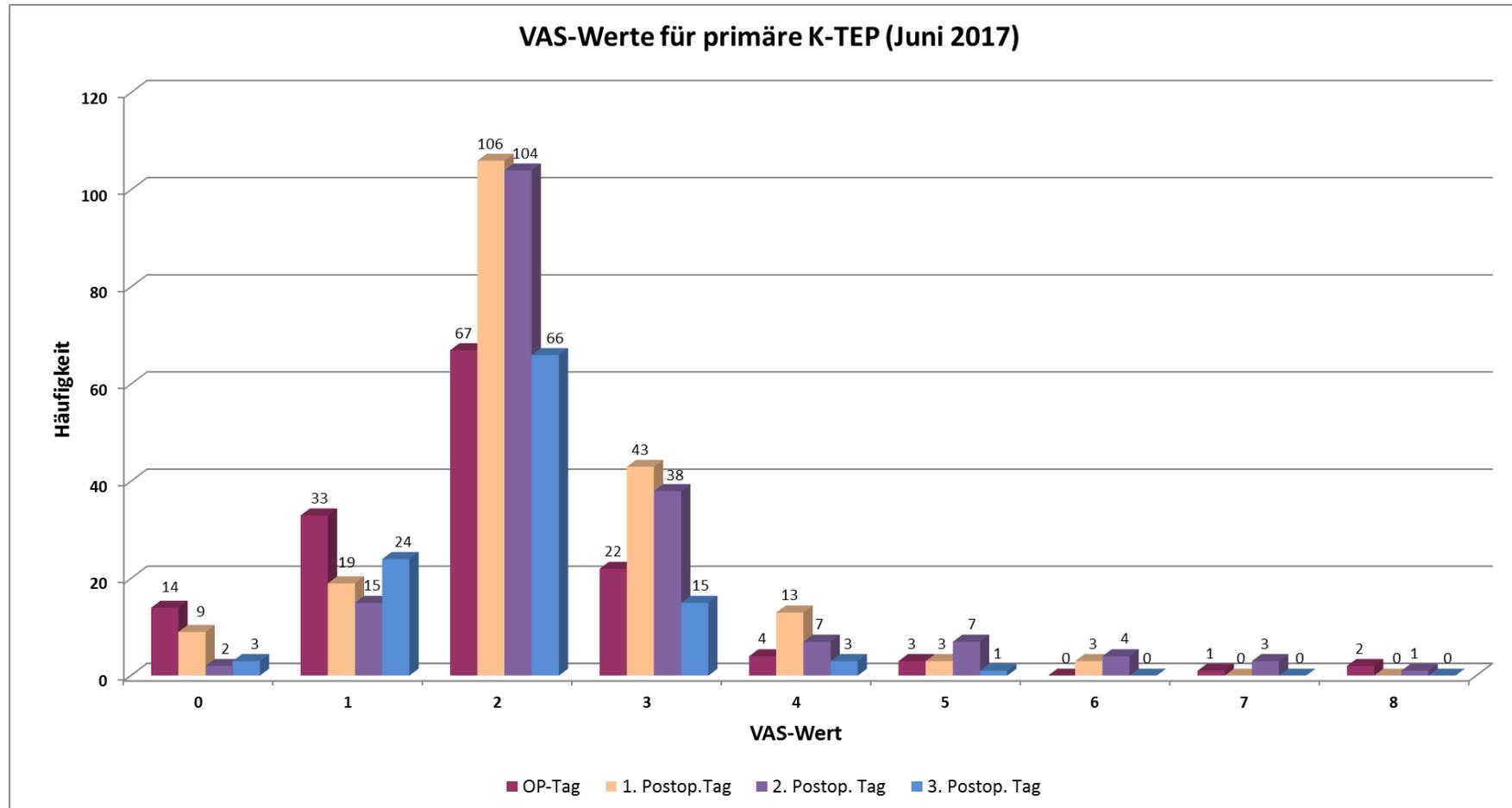
Cochrane Special Collection 2020:

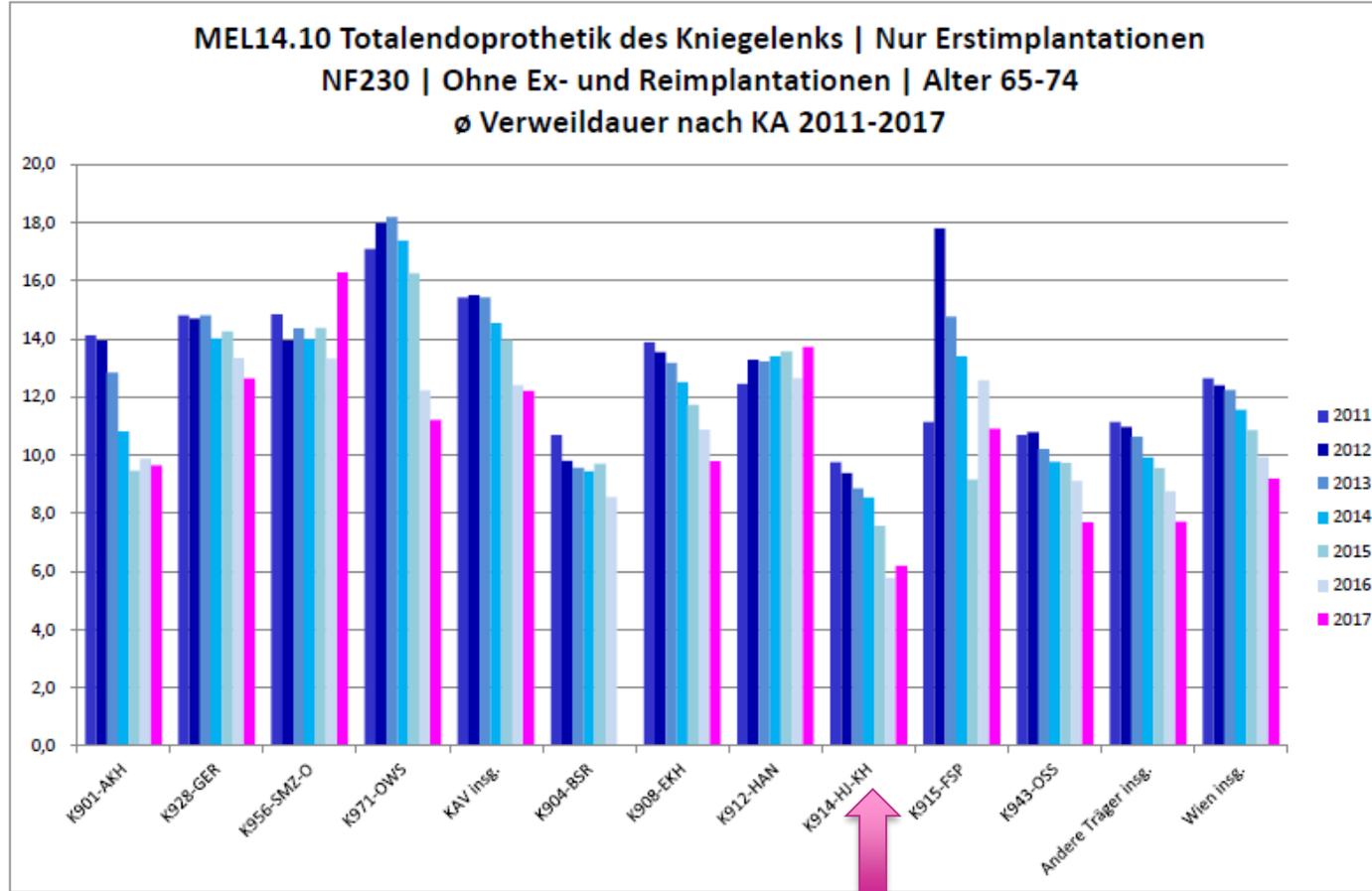
1. Bessere postOP Analgesie
2. Reduzierte Komplikationen
3. Schnellere Remobilisation
4. Geringere PONV-Rate

1. Perlas et al., Anesthesiology 2016
2. Memtsoudis et al., Anesthesiology 2013
3. Zorrilla-Vaca et al., RAPM 2016
4. Mason et al., J Alzheimer's Disease 2010
5. Lehmann et al., J Clin Anesth 2010
6. Paul et al., Anesthesiology 2010
7. Stundner et al., RAPM 2012
8. Memtsoudis et al., Anesthesiology 2012
9. Weinstein et al., Cochrane 2018
10. Gupta et al., BJA 2012

SUBSARTORIELLE SAPHENUSBLOCKADE









Herz-Jesu
Krankenhaus Wien



Analgesia Versus Motion

Persistent pain following knee arthroplasty.

[Puolakka PA](#)¹, [Rorarius MG](#), [Roviola M](#), [Puolakka TJ](#), [Nordhausen K](#), [Lindgren L](#).

⊕ Author information

Abstract

BACKGROUND AND OBJECTIVE: The prevalence of persistent pain after orthopaedic surgery has been the subject of only few studies and the risk factors for persistent pain have been evaluated even more rarely. The purpose of the present study was to evaluate the degree and the risk factors of persistent pain after knee arthroplasty.

METHODS: The prevalence of persistent postoperative pain after knee replacement was evaluated with a questionnaire in a large, register-based cross-sectional prevalence study. The main hypothesis was that the type of operation (primary, bilateral, revision) would influence the prevalence of persistent postoperative pain. Logistic regression analysis was performed to test the hypothesis and to find other possible risk factors for the development of persistent pain.

RESULTS: The total number of patients was 855. The operation was a primary arthroplasty in 648 patients (75.7%), a bilateral arthroplasty in 137 patients (21.1%) and a revision arthroplasty in 70 patients (8.2%). The response rate was 65.7%. The type of operation was not associated with the prevalence of persistent pain, but the degree of early postoperative pain was the strongest risk factor. If the degree of pain during the first postoperative week was from moderate to intolerable, the risk for the development of persistent pain was three to 10 times higher compared with patients complaining of mild pain during the same period. Other risk factors were the long duration of preoperative pain and female sex.

CONCLUSION: Intensity of early postoperative pain and delayed surgery increase the risk of the persistent pain after knee arthroplasty.

PMID: 20299989 [PubMed - indexed for MEDLINE]

PPSP: 31 Mio/ Jahr?

There is no significant difference in the incidence or relative risk of chronic pain at 3 and 6 months after an MRM when TPVB is used in conjunction with GA. Nevertheless, patients who receive a TPVB report less severe chronic pain, exhibit fewer symptoms and signs of chronic pain, and also experience better physical and mental HRQOL.

Harkouk H, et al. Reg Anesth Pain Med 2021;46:251–257

Review

Paravertebralblock und Mastektomie

In conclusion, CPSP was not found significantly prevented by PVB after BCS despite limitations in the included studies; nevertheless, PVB could prevent CPSNP by impacting the transition from acute to chronic pain

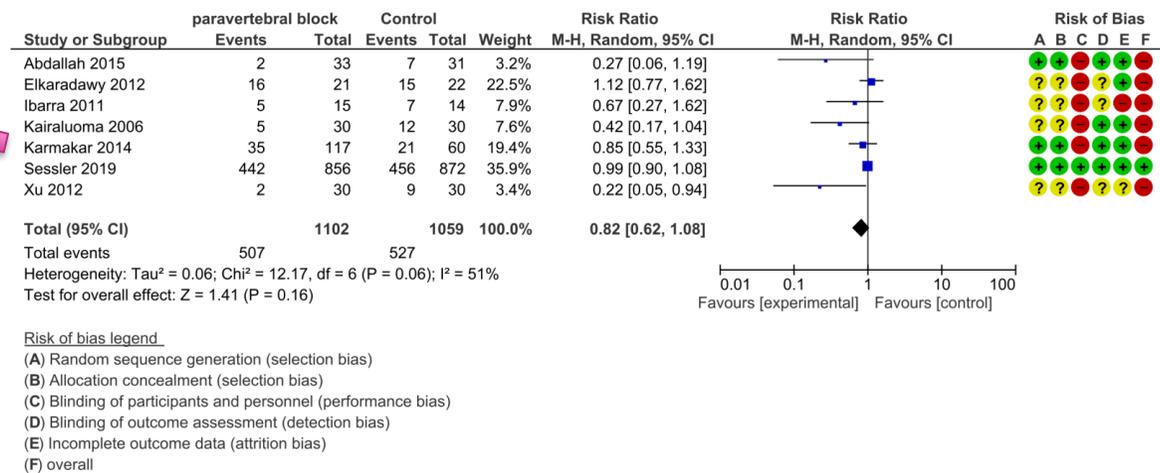


Figure 3 Forest plot of paravertebral block chronic postsurgical pain prevention at 6 months. M-H, Mantel-Haenszel.

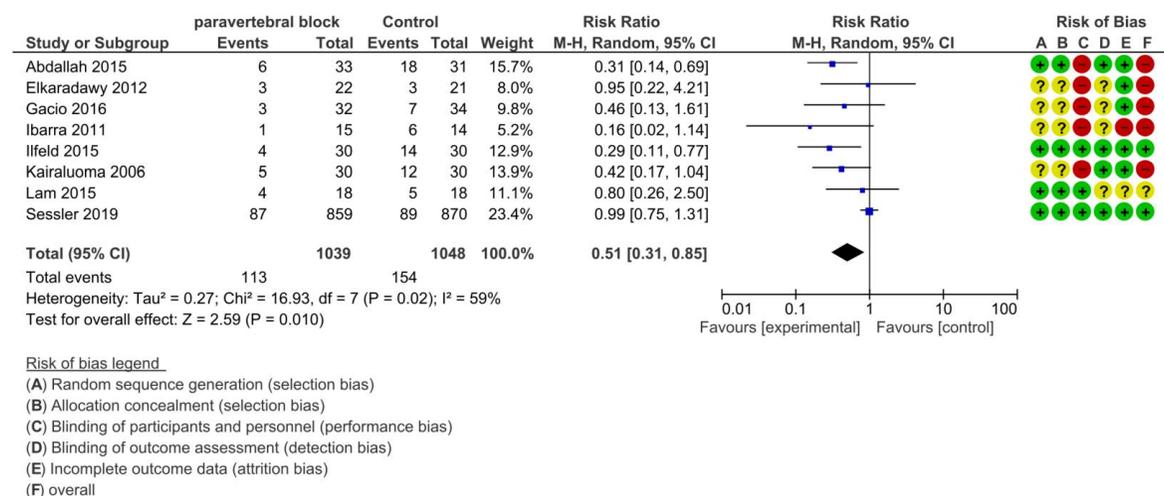


Figure 4 Forest plot of paravertebral block chronic postsurgical neuropathic pain prevention at 6 months. M-H, Mantel-Haenszel.



Potential strategies for preventing chronic postoperative pain: a practical approach: Continuing Professional Development

Philippe Richebé, MD, PhD · Marco Julien, MD · Véronique Brulotte, MD

Regional anesthesia

Regional anesthesia might be able to reduce the incidence of PPSP by different mechanisms:³⁷ 1) by blocking the transmission of the nociceptive input from the periphery to the central level and by limiting the neuronal inflammation that might activate glial cells, and 2) by allowing a strong reduction in intraoperative opioid doses that might decrease the so-called OIH and its possible long-term consequences. In 2012, Meleine *et al.* presented results of an experimental study in which a long-duration nerve block was able to prevent PPSP in animals better than a single-shot block. Nonetheless, the beneficial effect of this long-duration nerve block was lost when high doses of opioids were used during the anesthesia.³⁸ Hence, anesthesiologists might choose the option of providing an adequate RA to allow for a significant decrease in the intraoperative doses of opioids.

Local anaesthetics and regional anaesthesia versus conventional analgesia for preventing persistent postoperative pain in adults and children (Review)

Weinstein EJ, Levene JL, Cohen MS, Andreae DA, Chao JY, Johnson M, Hall CB, Andreae MH

We were able to pool results from 39 RCTs enrolling a total of 3027 participants for our inclusive analysis. Follow-up was for 1293 participants at three months, 1365 participants at six months, 326 participants at 12 months, and 43 participants at 20 or more months after surgery. The RCTs did not report surgical and anaesthetic complications consistently and little information was available on these. The studies were mostly funded by the institutions conducting the studies.

Key results

Regional anaesthesia reduced the number of people who experienced persistent pain after undergoing non-orthopaedic surgery. For open chest surgery, giving an epidural halved the odds of a person having persistent postoperative pain at three to 18 months after surgery (7 RCTs, 499 participants, moderate-quality evidence). Seven people needed to be treated in this way for one to benefit.

For the prevention of persistent pain three to 12 months after breast cancer surgery, seven people needed regional anaesthesia for one to benefit (18 RCTs, 1297 participants, low-quality evidence). Infusion of local anaesthetic into a vein was shown to reduce the risk of persistent pain three to six months after breast surgery (2 RCTs, 97 participants, moderate-quality evidence), with three people needing to be treated for one to benefit. Regional anaesthesia reduced the odds by more than half of a woman experiencing persistent pain after caesarean section (4 RCTs, 551 participants, moderate-quality evidence). The number of women treated for one to benefit was 19.

Continuous local anaesthetic infusion of the site where bone tissue was obtained from the hip bone did not clearly reduce the number of people with persistent pain at three to 55 months (3 RCTs, 123 participants, low-quality evidence).

We could not synthesize evidence for limb amputation, hernia repair, cardiac or abdominal surgery because of differences in how treatment was given or how results were reported.

Figure 1-2. MAARA Annual Workshop faculty; l-r: Scott M Croll, Alon P Winnie, Chester Buckenmaier.



► Additional material is published online only. To view, please visit the journal online (<http://dx.doi.org/10.1136rapm-2019-100773>).

For numbered affiliations see end of article.

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27 September 2019

ABSTRACT

Background No studies have examined the long-term benefits of regional anesthesia (RA) for pain management after combat-related injury. The objective of this prospective cohort study was to examine the relationship between RA administration and patient-reported pain-related outcomes among Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) service members sustaining a combat-related extremity injury.

Methods Between 2007 and 2013, n=358 American military personnel injured in OEF/OIF were enrolled at two military treatment facilities. Individuals were followed for up to 2 years after injury. Cohorts were defined based on whether participants were administered RA within 7 days after sustaining a combat-related injury, or not. Linear mixed effects models examined the association between RA and average pain intensity. Secondary outcomes included pain relief, pain interference, neuropathic pain symptoms, treatment outcomes related to pain management, and mental health symptoms.

Results Receiving early RA was associated with improved average pain over the first 6 months after injury ($\beta=-0.57$; $p=0.012$) adjusting for injury severity and length of stay at the primary treatment facility. This difference was observed up to 24 months after injury ($\beta=-0.36$; $p=0.046$). Individuals receiving early RA reported greater pain relief, improved neuropathic pain intensity, and higher satisfaction with pain outcomes; however, by 24 months, mean scores did not significantly differ between cohorts.

Conclusion Findings indicate that when administered soon after traumatic injury, RA is a valuable pain management intervention. Future longitudinal studies investigating the timely delivery of RA for optimal pain management in civilian trauma settings are needed.

Trial registration number NCT00431847



Fig 1. The patient's wound presentation on arrival at the facility.

Continuous Peripheral Nerve Block for Battlefield Anesthesia and Evacuation

Chester C. Buckenmaier, III, M.D., Geselle M. McKnight, C.R.N.A., James V. Winkley, M.D., Lisa L. Bleckner, M.D., Clarence Shannon, M.D., Stephen M. Klein, M.D., Robert C. Lyons, M.D., and John H. Chiles, M.D.

Peripheral nerve and continuous peripheral nerve block (CPNB) have the potential to be valuable techniques in combat anesthesia. We describe the first successful application of CPNB in the pain management and surgical management of a combat casualty as he was evacuated from the Iraqi battlefield to the United States. *Reg Anesth Pain Med* 2005;30:202-205.

Of the wounded in action from May 1 to December 31, 2003, 42% were orthopedic cases. RA and CPNB are particularly well suited to manage these types of injuries; they provide surgical anesthesia, prolonged and superior perioperative analgesia and improved recovery!

Table 1. Advantages of Regional Anesthesia on the Modern Battlefield

Excellent operating conditions
Profound perioperative analgesia
Stable hemodynamics
Limb specific anesthesia
Reduced need for other anesthetics
Improved postoperative alertness
Minimal side effects
Rapid recovery from anesthesia
Simple, easily transported equipment required

COMMENTARY AND PERSPECTIVE

Bringing Ultrasound-guided Regional Anesthesia to Emergency Medicine

Andrew A. Herring, MD

Thoracic Paravertebral Block for Management of Pain Associated With Multiple Fractured Ribs in Patients With Concomitant Lumbar Spinal Trauma

Manoj K. Karmakar, F.R.C.A., Po Tong Chui, F.A.N.Z.C.A.,
Gavin M. Joynt, F.F.A.(S.A.), and Anthony M.-H. Ho, F.R.C.P.(C.)

172 Regional Anesthesia and Pain Medicine Vol. 26 No. 2 March–April 2001



Fig 3. A CT scan image from case 2 that shows ipsilateral paravertebral and prevertebral spread of contrast with no epidural spread.



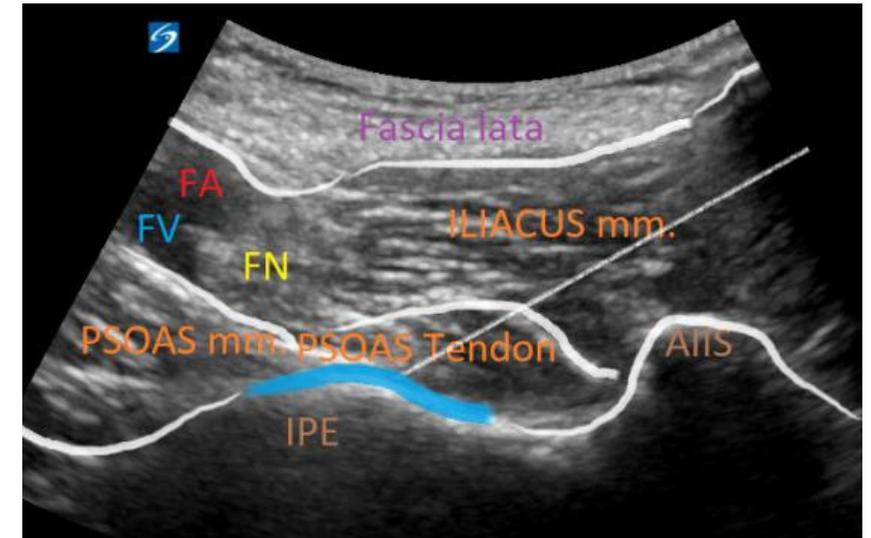
Wichtige Blockaden nach Trauma:

OE: Supraclaviculärer Block

Rippen: Paravertebralblock

Hüfte: Femoralisblock, Fascia iliaca Block (suprainguinal), PENG-Block

Bein: Ischiadicusblock, Femoralis (Saphenus-) Block



> [Reg Anesth Pain Med.](#) 2018 Nov;43(8):859-863. doi: 10.1097/AAP.0000000000000847.

Pericapsular Nerve Group (PENG) Block for Hip Fracture

Laura Girón-Arango, Philip W H Peng, Ki Jinn Chin, Richard Brull, Anahi Perlas

PMID: 30063657 DOI: 10.1097/AAP.0000000000000847

Abstract

Fascia iliaca block or femoral nerve block is used frequently in hip fracture patients because of their opioid-sparing effects and reduction in opioid-related adverse effects. A recent anatomical study on hip innervation led to the identification of relevant landmarks to target the hip articular branches of femoral nerve and accessory obturator nerve. Using this information, we developed a novel ultrasound-guided approach for blockade of these articular branches to the hip, the PENG (Pericapsular Nerve Group) block. In this report, we describe the technique and its application in 5 consecutive patients.



CASE REPORT

Stellate ganglion blockade for analgesia following upper limb surgery

J. G. McDonnell,¹ O. Finnerty² and J. G. Laffey³

1 Consultant, 2 Specialist Registrar, 3 Professor, Department of Anaesthesia and Intensive Care Medicine, Galway University Hospital, Galway, Ireland

Summary

We report the successful use of a stellate ganglion block as part of a multi-modal postoperative analgesic regimen. Four patients scheduled for orthopaedic surgery following upper limb trauma underwent blockade of the stellate ganglion pre-operatively under ultrasound guidance. Patients reported excellent postoperative analgesia, with postoperative VAS pain scores between 0 and 2, and consumption of morphine in the first 24 h ranging from 0 to 14 mg. While these are preliminary findings, and must be confirmed in a clinical trial, they highlight the potential for stellate ganglion blockade to provide analgesia following major upper limb surgery.

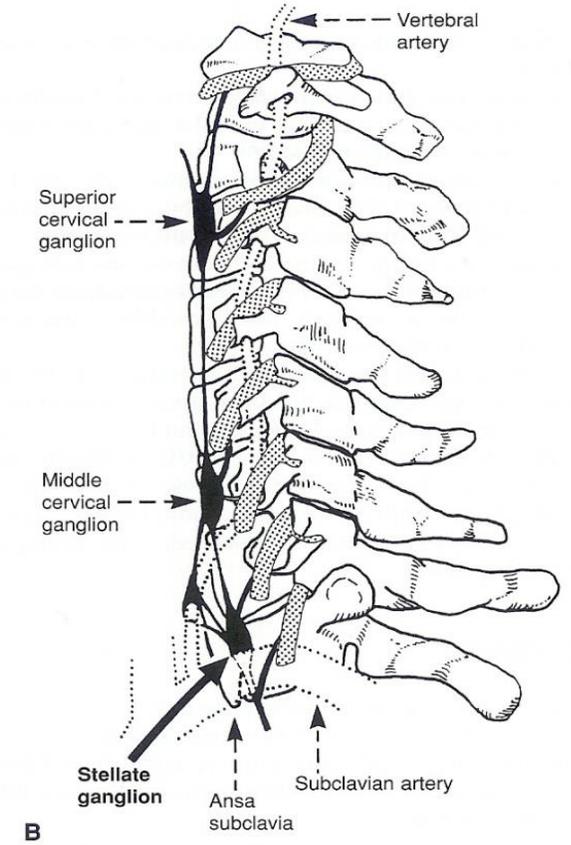
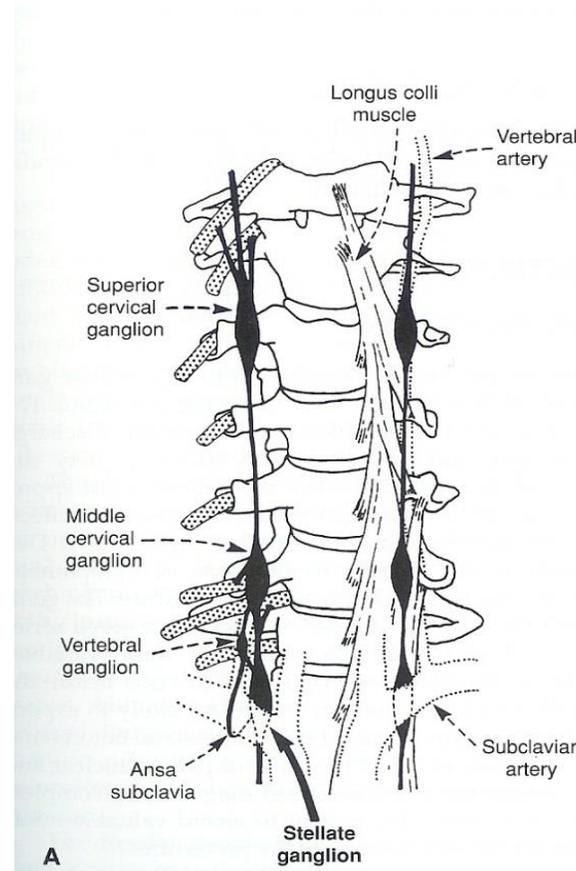
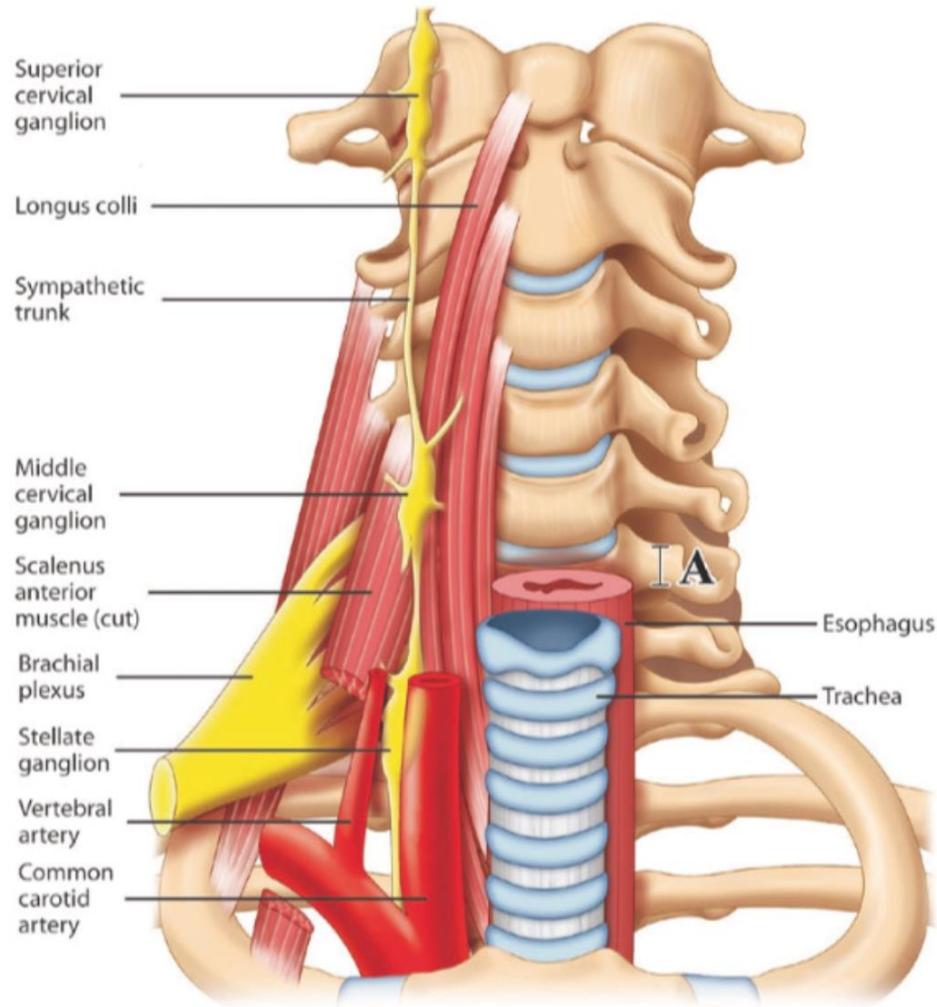
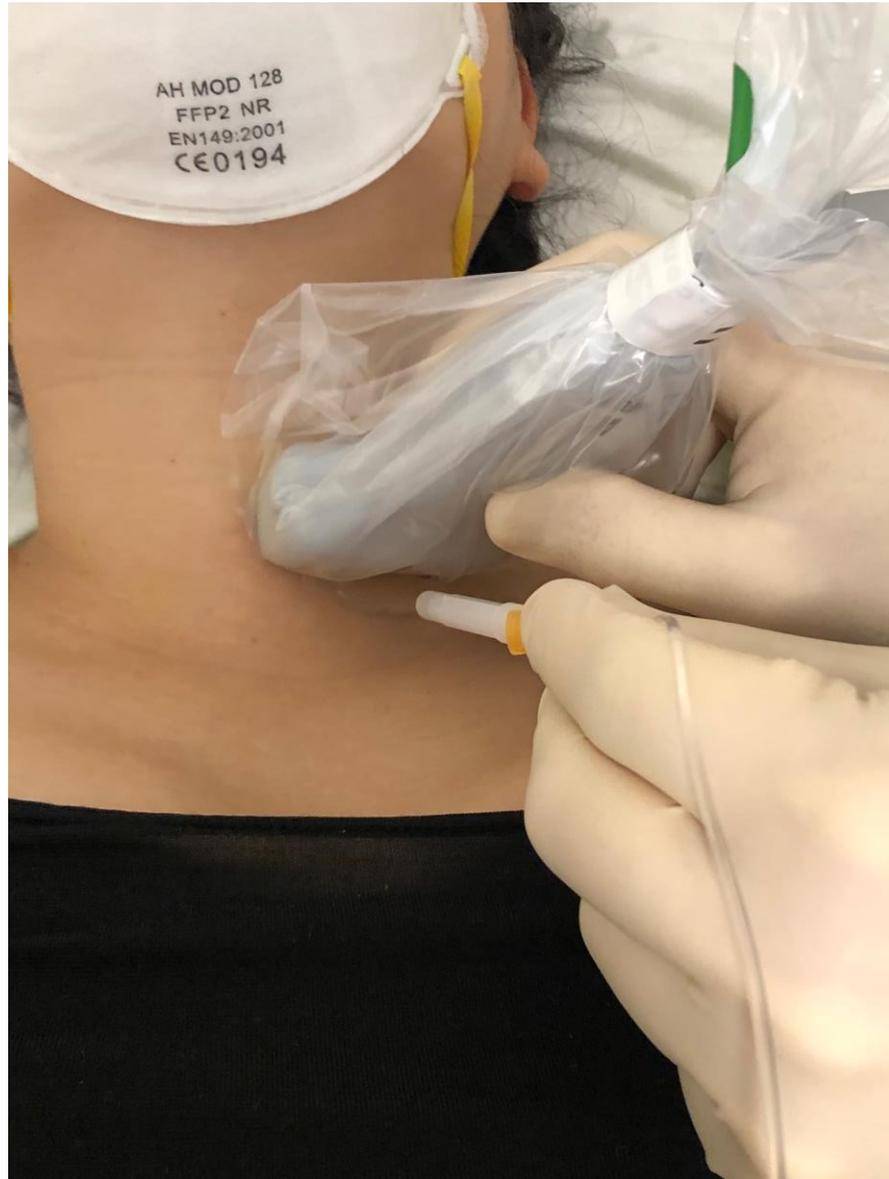


Fig. 3.1 Anatomy of cervical sympathetic chain. (Reprint with permission from Philip Peng Educational Series)



OOP medial der Carotis



Herz-Jesu
Krankenhaus Wien





Was wir wissen:

Unter physiologischen Bedingungen hat das sympathische Nervensystem keinen Effekt auf die Nociception.

Bei Inflammation bzw. Trauma wird jedoch die A delta- und C-Faser Aktivität durch das sympathische Nervensystem moduliert.

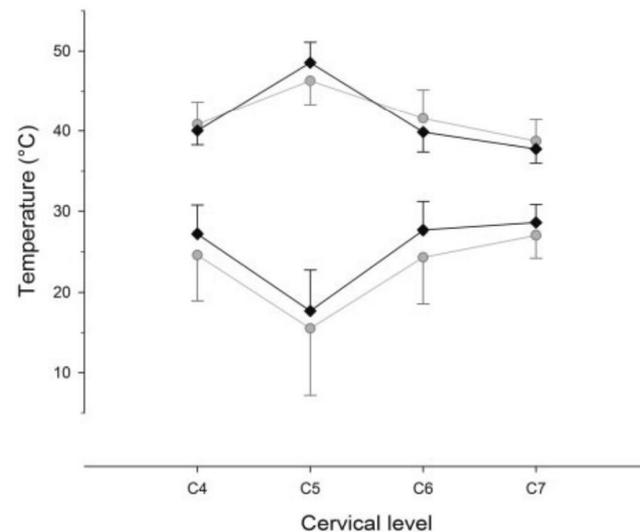
Im Tiermodel: Nociception ist nach Verletzung (thermisch, chemisch) durch Sympathomimetika und –lytica beeinflussbar.

NEUROMODULATION & INTERVENTIONAL SECTION

Original Research Article

Effects of Stellate Ganglion Block on Analgesia Produced by Cervical Paravertebral Block as Established by Quantitative Sensory Testing: A Randomized Controlled Trial

Sermeus et al.



In conclusion, we were unable to demonstrate any added antinociceptive benefit of the addition of a stellate ganglion block to a cervical paravertebral block for treating acute pain caused by arthroscopic surgery on a non-chronically diseased and nonfractured shoulder joint. It is therefore not unreasonable to suppose that pain from soft tissue injuries without bony lesions is transmitted mainly by somatic nerves with no or only minimal involvement of the sympathetic nervous system. There is a growing body of evidence confirming that “bone pain” resembles a visceral type of pain, which is relayed via sympathetic nerves, while soft tissue injury incites nociceptive pain that is conveyed by somatic nerves. These premises would allow us to reconcile the apparently conflicting evidence in the literature. If there is evidence of “bone pain,” SGB helps manage the pain, and if there is only soft tissue injury without any bony lesions, SGB does not help.

Die Ganglion Stellatum Blockade hat durch die US-gez. Technik eine Renaissance erfahren (Sicherheit, Wirksamkeit, ...)

Sie spielt in der invasiven chr. Schmerztherapie eine wichtige Rolle

Nach knöchernen Verletzungen der OE scheint sie eine entsprechende analgetische Wirkung zu haben (2. Renaissance)

Ob dadurch CRPS verhindert werden kann ist unklar

MANAGEMENT OF PAIN WITH SYMPATHETIC BLOCK IN ACUTE HERPES ZOSTER

AYDINLI I, PEKEL A.FERIT, SUN S.

PAIN CLINIC, ANESTHESIOLOGY DEPT.CERRAHPASA MEDICAL FACULTY, ISTANBUL TURKEY

Herpes zoster is often a painful disorder during the acute phase and also possesses a potential risk of chronic pain called post herpetic neuralgia.

In this study therapeutic and analgesic efficacy of sympathetic block is evaluated on eleven patients.

METHOD - 3 patients were managed with performing stellate ganglion block while 7 were treated by epidural sympathetic block. One patient had received both. All blocks were performed with 0.25% marcain with 10ml of volume. Blocks were performed intermittently on every day, except weekends, and continued till the patient was completely free of pain. Analgesia was assessed with VAS. Dermatologic therapy for skin lesions had also been continued as long as they existed.

RESULTS - The patients' treatment continued intermittently, 3 days -the shortest, 22 days- the longest. Complete (100%) pain relief could be achieved in all and as reported by the consultant dermatologist, the skin lesions healed in a shorter time than it is used to be. Post herpetic neuralgia was not observed during long term controls in a year time.

CONCLUSION - If performed in the early days, sympathetic block with local anesthetics, both, relieves pain and hastens the healing of skin lesions while decreasing the risk of post herpetic neuralgia.

Effect of Early Stellate Ganglion Blockade for Facial Pain from Acute Herpes Zoster and Incidence of Postherpetic Neuralgia

Mohamed Y. Makharita, MD¹, Yasser Mohamed Amr, MD², and Youssef El-Bayoumy, MD¹

Pain Physician: November/December 2012; 15:467-474

Table 1. Demographic data and patient's outcome in the studied groups. Values are in mean ±SD and in number (%). Group 1: placebo group. Group 2: stellate ganglion block group.

Groups	Group 1 (n=30)	Group 2 (n=31)	P value
Age (years)	59.6 ± 3.2	60.6±2.2	0.14
Sex (male/ female)	14/16	13/18	0.71
Side (right/ left)	16/14	17/14	0.91
Incidence of PHN			
3 months	8/30 (26.7%)	2/31* (6.5%)	0.043
6 months	4/30 (13.3%)	0/31 * (0 %)	0.035
Patient Satisfaction Score			
3 months	2.2 ± 1.3	2.8 ± 1.1*	0.03
6 months	2.4 ± 0.5	3 ± 0.0*	0.004
Time of first block (days)	5.17 ± 0.8	6.26 ± 0.6	0.63
Duration of pain (days)	43.6 ± 28.7	23.8 ± 18*	0.002

* Significant when compared to the other group

Table 2. Visual Analogue Score in the studied groups. Values are in mean ± SD. Group 1: placebo group. Group 2: stellate ganglion block group.

	Basal	1 week	2 weeks	3 weeks	4 weeks	6 weeks	2 months	3 months	6 months
Group1	7.1 ± 1.1	4.7 ± 1.1	3.8 ± 1.3	2.8 ± 1.8	1.8 ± 2	1.1 ± 1.9	1.1 ± 1.9	1.1 ± 1.8	0.4 ± 1.1
Group2	7 ± 0.9	2.9 ± 0.6*	1.7 ± 0.8*	0.7 ± 1*	0.1 ± 0.6*	0.2 ± 0.7*	0.2 ± 0.5*	0.13 ± 0.5*	0 ± 0*
P value	0.79	< 0.001	< 0.001	< 0.001	< 0.001	0.014	0.015	0.007	0.042

* Significant when compared to the other group

Effects of applying nerve blocks to prevent postherpetic neuralgia in patients with acute herpes zoster: a systematic review and meta-analysis

¹Department of Preventive Medicine, College of Medicine, Korea University,
²Department of Anesthesiology and Pain Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul,
³Department of Anesthesiology and Pain Medicine, Kangwon National University Hospital, Chuncheon, Korea

Hyun Jung Kim^{1,*}, Hyeong Sik Ahn^{1,*}, Jae Young Lee², Seong Soo Choi²,
Yu Seon Cheong³, Koo Kwon², Syn Hae Yoon², and Jeong Gill Leem²

Background: Postherpetic neuralgia (PHN) is a common and painful complication of acute herpes zoster. In some cases, it is refractory to medical treatment. Preventing its occurrence is an important issue. We hypothesized that applying nerve blocks during the acute phase of herpes zoster could reduce PHN incidence by attenuating central sensitization and minimizing nerve damage and the anti-inflammatory effects of local anesthetics and steroids.

Methods: This systematic review and meta-analysis evaluates the efficacy of using nerve blocks to prevent PHN. We searched the MEDLINE, EMBASE, Cochrane Library, ClinicalTrials.gov and KoreaMed databases without language restrictions on April, 30 2014. We included all randomized controlled trials performed within 3 weeks after the onset of herpes zoster in order to compare nerve blocks vs active placebo and standard therapy.

Results: Nine trials were included in this systematic review and meta-analysis. Nerve blocks reduced the duration of herpes zoster-related pain and PHN incidence of at 3, 6, and 12 months after final intervention. Stellate ganglion block and single epidural injection did not achieve positive outcomes, but administering paravertebral blockage and continuous/repeated epidural blocks reduced PHN incidence at 3 months. None of the included trials reported clinically meaningful serious adverse events.

Conclusions: Applying nerve blocks during the acute phase of the herpes zoster shortens the duration of zoster-related pain, and somatic blocks (including paravertebral and repeated/continuous epidural blocks) are recommended to prevent PHN. In future studies, consensus-based PHN definitions, clinical cutoff points that define successful treatment outcomes and standardized outcome-assessment tools will be needed. (Korean J Pain 2017; 30: 3-17)

Table 1 Evidence base for the efficacy of peripheral nerve block in treating different headache disorders

Headache disorder	Type of nerve block studied	Evidence level*
Acute migraine	GON	2B ⁸
Chronic migraine	GON	2A ^{9 10}
Cluster headache	GON, suboccipital	1B ^{11 12}
Occipital neuralgia	GON	2B ¹³
Chronic daily headache	GON	2B ¹⁴
Other trigeminal autonomic cephalalgias		
SUNCT/SUNA	Supraorbital, supratrochlear	4 ⁵
Paroxysmal hemicrania/hemicrania continua	Supraorbital, supratrochlear	4 ¹⁵
Other painful cranial neuralgias	Supraorbital, auriculotemporal	4 ^{16 17}

*Based on the Oxford Centre for Evidence-based Medicine Levels of Evidence.

GON, greater occipital nerve; SUNCT, short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing; SUNA, short-lasting unilateral neuralgiform headache attacks with cranial autonomic features.

Key points

- ▶ Peripheral nerve blocks have a role in acute and transitional treatment of acute migraine, chronic migraine, cluster headache and painful cranial neuralgias.
- ▶ Patient position and anatomical landmarks are key for their successful delivery.
- ▶ Corticosteroids are frequently used for greater occipital nerve blocks.
- ▶ Supraorbital, supratrochlear and auriculotemporal nerve blocks involve a combination of lidocaine and/or bupivacaine.
- ▶ Uncommon but important adverse effects include transient dizziness, light-headedness, transient headache exacerbation, and rarely localised lipoatrophy and alopecia with corticosteroids.

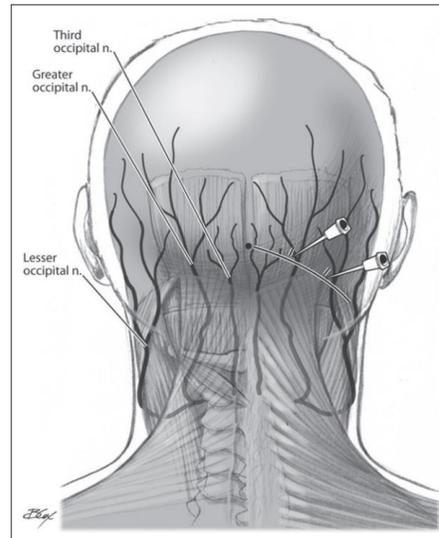


Fig 1.—Greater and lesser occipital nerve blocks.

Review Article

Expert Consensus Recommendations for the Performance of Peripheral Nerve Blocks for Headaches – A Narrative Review

Andrew Blumenfeld, MD; Avi Ashkenazi, MD; Uri Napchan, MD; Steven D. Bender, DDS;
Brad C. Klein, MD; Randall Berliner, MD; Jessica Ailani, MD; Jack Schim, MD;
Deborah I. Friedman, MD, MPH; Larry Charleston IV, MD; William B. Young, MD;
Carrie E. Robertson, MD; David W. Dodick, MD; Stephen D. Silberstein, MD; Matthew S. Robbins, MD

Headache Disorder	Nerve(s) Blocked	Evidence
Primary headache disorders		
Migraine	GON, STN, SON	Retrospective ²³⁻²⁵ Prospective, noncontrolled ^{12,26}
Cluster headache	GON	Case series ^{4,13} Open label ¹⁴ Retrospective ¹⁵
Chronic daily headache	GON	Double blind, placebo controlled ^{7,8} Case series ⁴ Open label ²⁷ Prospective, noncontrolled ²⁸
Hemicrania continua	GON, SON	Prospective, randomized controlled ²⁰
New daily persistent headache	GON	Case series ^{4,18}
Secondary headache disorders		
Cervicogenic headache	GON, LON, SON	Case series ^{30,31} Retrospective ²⁵ Prospective, noncontrolled ³² Prospective, comparative ³³ Double blind, placebo controlled ³⁴
Post-traumatic headache	GON	Retrospective ³⁵
Post-dural puncture headache	GON, LON	Prospective, comparative ³⁶
Cranial neuralgias		
Supraorbital neuralgia	SON	Case series ³⁷⁻³⁹
Auriculotemporal neuralgia	ATN	Case series ⁴⁰

ATN = auriculotemporal nerve; GON = greater occipital nerve; LON = lesser occipital nerve; SON = supraorbital nerve; STN = supratrochlear nerve.

Erfolgreiche Ultraschall-gezielte beidseitige proximale Blockade des Nervus occipitalis major in Rückenlage bei konservativ therapierefraktärem postspinalen Kopfschmerz

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Hintergrund:

Die Inzidenz postspinaler Kopfschmerzen liegt abhängig von Nadeltyp und -stärke sowie Geschlecht und Alter bei 1% bis 30%. Bei konservativ (Flüssigkeitsgabe, Analgetika, Koffein) therapierefraktären Schmerzen wird häufig ein epiduraler Blutpatch durchgeführt. Dieser hat zwar eine sehr hohe initiale Erfolgsrate, ist jedoch technisch aufwändig und kann potentiell zu epiduralen Blutungen und Infektionen führen.

Erste Fallberichte beschreiben als neue Therapieoption eine beidseitige distale Blockade des Nervus occipitalis major (1).

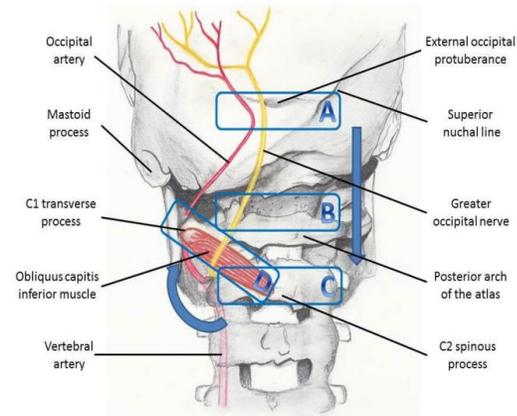


Abb. 1: Skizzierte Darstellung des Nervenverlaufs mit anatomischen Orientierungspunkten und Schnittebenen.
© M. Greher

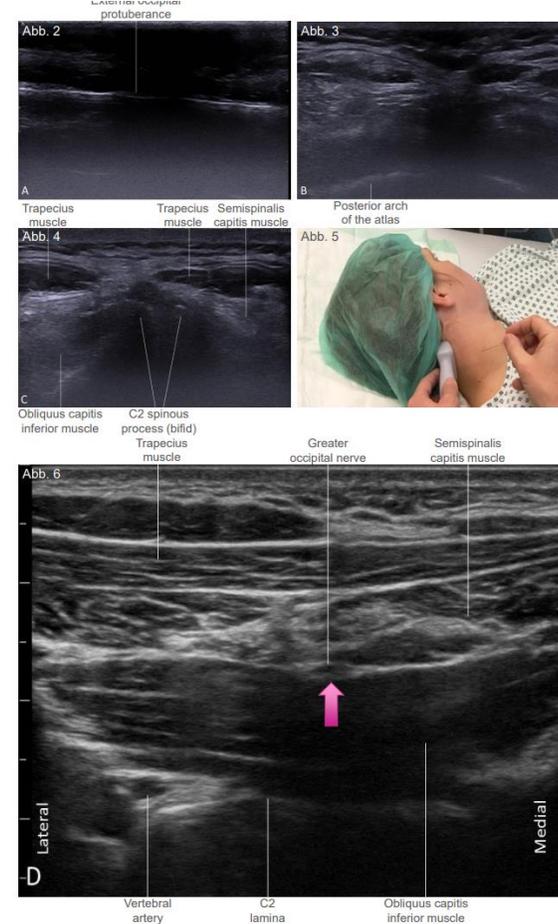


Abb. 2-6: Sonographie bei der proximalen Technik (A-C) zum systematischen Auffinden des N. occipitalis major. Abb. 5: Sondenposition bei der proximalen Technik. © M. Greher

Falldarstellung:

- PatientIn: 33 Jahre, weiblich
- Operation: ventrale Schenkelhalsplastik in Spinalanästhesie
- Am 3. postoperativen Tag Vorstellung mit ausgeprägten, typisch lageabhängigen Kopfschmerzen
- Konservativ therapierefraktär, ausschließlich flache Rückenlage toleriert
- Verwendung der proximalen Technik (2)
- Rückenlage mit Kopfdrehung
- Darstellung des Nervus occipitalis major (Abb.6, Pfeil) mittels Linearschallkopf (Sonosite X-Porte, 15 MHz)
- Blockade mit jeweils 5ml Ropicavain 0,5% / 2mg Dexamethason

➔ Die Patientin war sofort beschwerdefrei und konnte noch am gleichen Tag zufrieden entlassen werden.

Diskussion:

Mit der distalen Technik in Höhe der Linea nuchae fand sich in der retrospektiven Studie an 21 Patienten mit postspinalen Kopfschmerz eine signifikante Besserung bei der Gruppe mit VAS-Ausgangswerten zwischen 4 und 6 (1). Wir konnten 2015 anatomisch zeigen, dass die proximale Methode auf Höhe C2 eine höhere Erfolgsquote hat (2), weshalb im vorliegenden Fall erstmals diese Technik angewandt wurde.

Schlussfolgerung:

Die Ultraschall-gezielte beidseitige Blockade des Nervus occipitalis major sollte bei konservativ therapierefraktärem postspinalen Kopfschmerz als weniger invasive Therapieoption vor einem epiduralen Blutpatch in Betracht gezogen werden. Die vorteilhaftere proximale Technik auf Höhe C2 ist auch in Rückenlage bei Kopfdrehung gut durchführbar.

References:

1. Akçol F. et al: Ultrasound-guided bilateral greater occipital nerve block for the treatment of post-dural puncture headache. Pak J Med Sci 2015;31(1):111-15
2. Greher M. et al: Sonographic visualization and ultrasound-guided blockade of the greater occipital nerve: a comparison of two selective techniques confirmed by anatomical dissection. Br J Anaesth 2010;104:637-42

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Ultraschall-gezielter Caudalblock (epidural) bei akuter Diskusproblematik tief lumbal

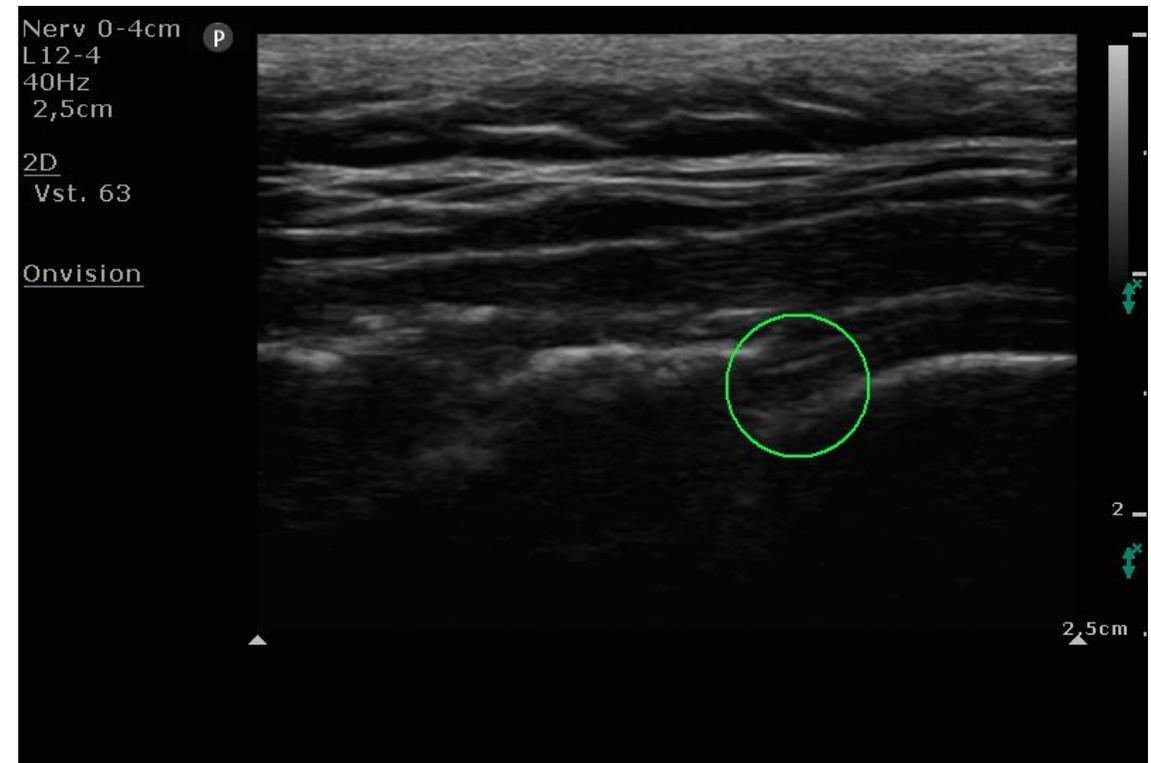
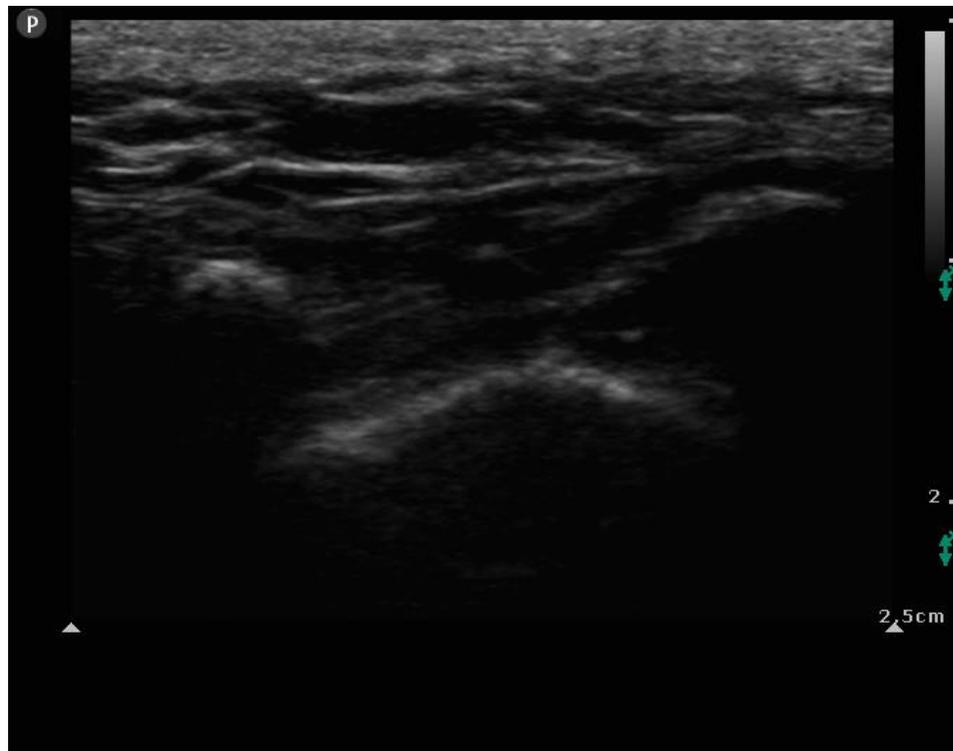




Fig. 7. Setup for a percutaneous peripheral nerve stimulator of the femoral nerve. (Courtesy of B. Ilfeld, MD, MS, San Diego, CA.)

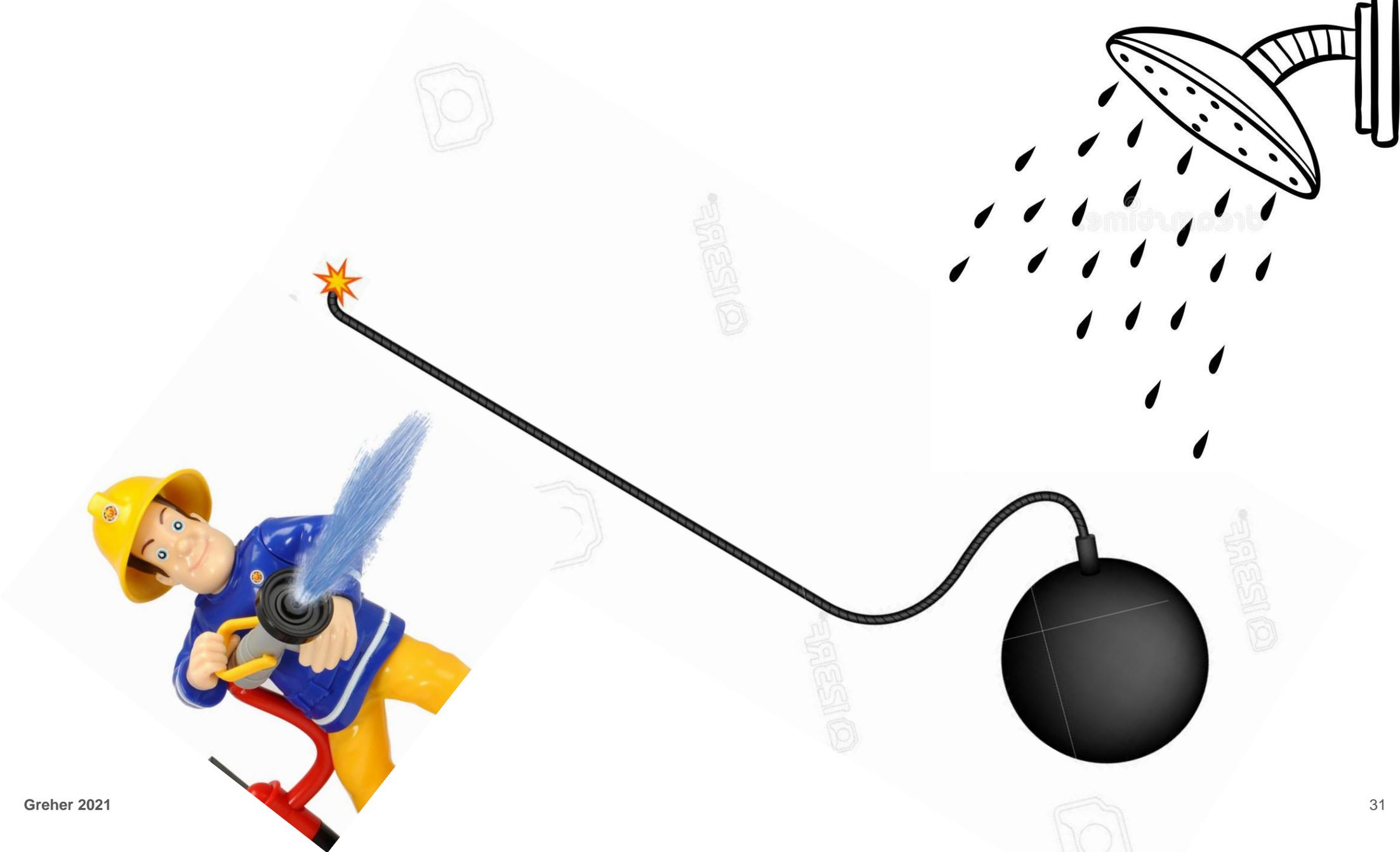
Is preoperative genicular radiofrequency ablation effective for reducing pain following total knee arthroplasty? A pilot randomized clinical trial

Puneet Mishra,¹ David Edwards,¹ Marc Huntoon ,² Christopher Sobey,¹ Gregory Polkowski,³ John Corey,¹ Kelly Louise Mishra ,¹ Andrew Shinar,³ Stephen Engstrom,³ Cassandra Palmer,⁴ Stephen Bruehl¹

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Fig. 2. A hand-held cryoneurolysis device with a 5.5-cm, 22 cryoprobe. (Courtesy of B. Ilfeld, MD, MS, San Diego, CA.)



RA zur Akutschmerztherapie



13. Symposium für
Ultraschall-gezielte Nervenblockaden
Samstag, 2. Oktober 2021, 09 – 15.00 Uhr
Schulungszentrum Herz-Jesu Krankenhaus
Hainburger Straße 66
1030 Wien



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Anmeldung bitte bis spätestens 24. September 2021.

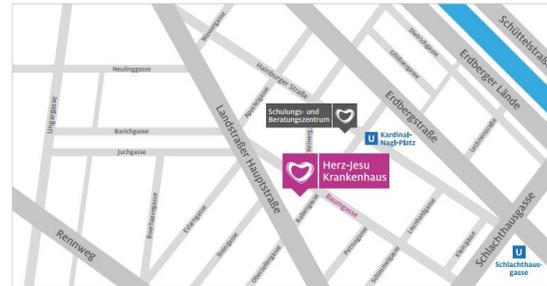
Teilnahmegebühr:

Online-Paket 09 – 12.15 Uhr | 150 Euro

Vorort-Paket 09 – 15.00 Uhr | 360 Euro inkl. Mittagessen

Nach Erhalt Ihrer Anmeldung übersenden wir Ihnen Ihre Anmeldebestätigung und alle Informationen zur Überweisung der Teilnahmegebühr. Mit Eingang ihrer Zahlung auf unserem Konto bis spätestens 28. September 2021 ist Ihre Teilnahme an diesem Symposium fixiert. Bei Fragen wenden Sie sich bitte an Gabriele Maria Hutecek unter gabrielemaria.hutecek@kh-herzjesu.at oder unter +43 1 7122684-8603. Die Teilnehmerin/der Teilnehmer erklärt sich zu einer möglichen Veröffentlichung von Fotos, die im Zusammenhang mit der Veranstaltung entstehen, einverstanden.

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Lageplan und Anfahrt mit öffentlichen Verkehrsmitteln:
Öffentlich erreichen Sie das Schulungs- und Beratungszentrum des Herz-Jesu Krankenhauses direkt mit der U-Bahnlinie U3 (Station Kardinal-Nagl-Platz).

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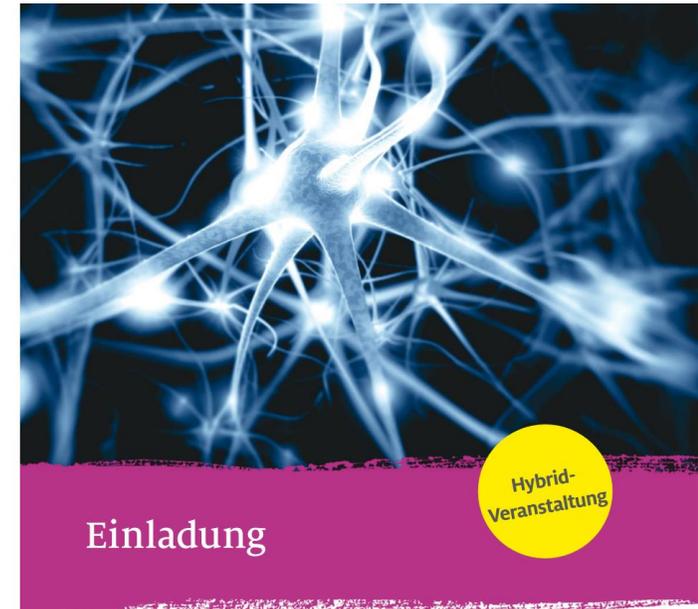


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Die Veranstaltung erfolgt in Kooperation mit der Ärztekammer Wien.
Die Veranstaltung wurde für das Fach Anästhesiologie und Intensivmedizin für das Diplomfortbildungsprogramm der Österreichischen Ärztekammer eingereicht: Online-Paket zählt 4 DFP-Punkte, Vorort-Paket 6 DFP-Punkte.



Einladung

13. Symposium für Ultraschall-gezielte Nervenblockaden

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