



Регионарная аналгезия в абдоминальной хирургии. Дань моде или необходимость?

**Дмитриев Д.В.
БУС 11.,
Киев, 17-19 апреля,
2019**





Then & Now

In recognition of the 90th anniversary of the International Anesthesia Research Society and Anesthesia & Analgesia, we will republish summaries of our earliest articles and our current state of knowledge on the subject, highlighting how our specialty has advanced.

Regional Analgesia for Postoperative Pain: Then & Now

Spencer S. Liu, MD

After-Pain Following the Use of Conductive Anesthesia

Ralph H. Fouser, D.D.S., and S.D. Salem

Anesthesia and Analgesia October 1922: Vol. 1, Pp. 75–78

Then Conductive anesthesia has the distinction of being one of the most important factors in the development of the present high state of perfection of our modern methods of dental practice, but there is still much to be desired, which will be developed with our ever-increasing experience. Of the many methods and fads of modern dentistry, conductive anesthesia has held to an ever-increasing popularity especially when its use rests upon the scientific basis with which it must be employed to insure the greatest degree of success. Nearly all of the professions

have had access to a knowledge of conductive anesthesia. The technique is mastered with study and experience, but there is one feature of this method of anesthesia that is a most important one in our complete success, and it is one that has many times been neglected, but often has given us serious concern, *e.g., the pain following the operation, which many times may be prevented with a little more study and care in our use of this method of anesthesia, as the successful termination of local anesthesia is not only a complete anesthesia but the elimination of the after-pain to as great extent as possible.*

Вывод. Необходимо использовать локальную анестезию для уменьшения послеоперационной боли!

Д.В. Дмитрієв. 11-й Британо-Український Симпозіум. Київ, 2019



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Regional Analgesia for Postoperative Pain

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Now Drs. Fouser and Salem's comments 90 years ago in only the second issue of *Anesthesia & Analgesia* are remarkably prescient regarding the current importance of regional analgesia ("conductive anesthesia" back then) for postoperative analgesia. Control of pain in general has become a recognized humanitarian right and multiple society (e.g., American Society of Anesthesiologists), regulatory (The Joint Commission), and humanitarian agencies (World Health Organization) advocate and support analgesia.¹ Indeed, in July 2007, the *Journal* devoted multiple articles and editorials to the current state of pain control. So where are we now, 90 years after Drs. Fouser and Salem

first lamented the neglect of postoperative analgesia despite excellent anesthesia? Although no longer neglected, consistent control of postoperative pain remains elusive to this day. The most recent survey on hospitalized and ambulatory patients' attitudes and experience with pain control in 2003 indicated that our success remains incomplete.² Pain is a chief patient concern, because more patients were primarily concerned about postoperative pain (59%) than were concerned about success of surgery (51%). Unfortunately, 73% of patients continue to experience moderate to severe pain after surgery. Thus, substantial room for improvement remains in this field even after 90 years.

Вывод. Многие госпитали используют регионарную анальгезию в рутинной практике!



Anesthesia and Analgesia—September-October, 1944

spasms, but it does not prevent its spasmogenic action. Demerol, therefore, is similar to morphine in its central analgetic action although not quite as potent. It differs from morphine in producing a spasmolytic rather than a spasmogenic effect.

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Regional Analgesia for Intra-abdominal Surgery. By Norman R. James, L. R. C. P. & S. (Ed.), D. A. (R. C. P. & S., Eng.) Anesthetist, Emergency Medical Service. Formerly Anesthetist, North Staffordshire Royal Infirmary and Royal Hospital, Wolverhampton; Assistant to the Department of Anesthetics, University of Oxford. Octavo. Pp. 57 with 27 illustrations. Published by J. & A. Churchill, Ltd., London, 1943.

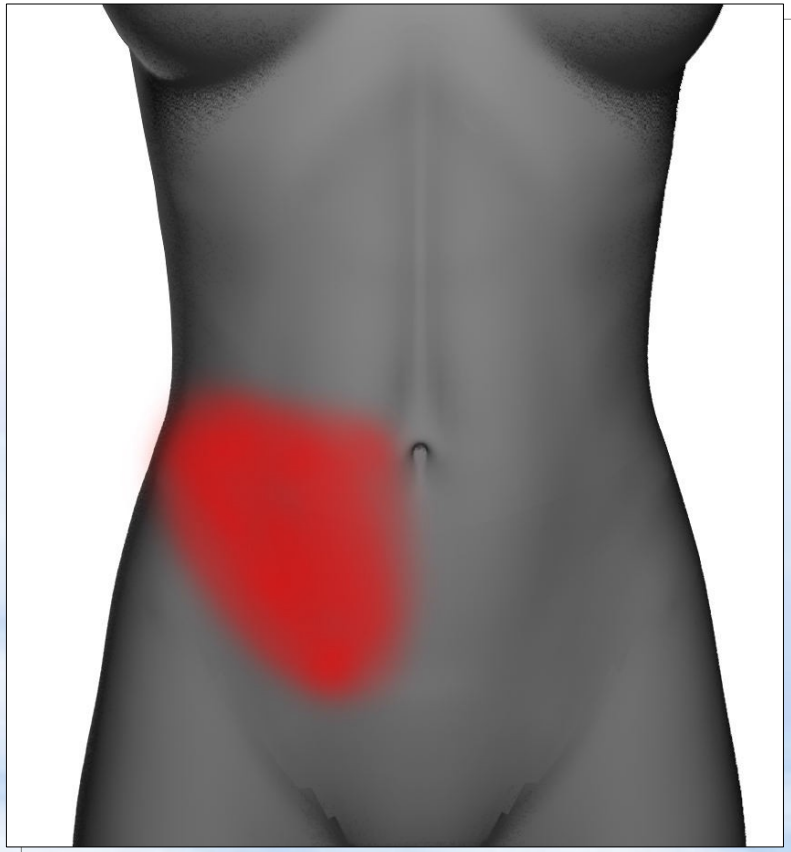
ALTHOUGH ANESTHESIOLOGISTS are able to fit general anesthesia to most surgical patients, there are occasions when regional analgesia with or without a light general anesthetic may be definitely indicated.

For this purpose Dr. James strongly advocates the use of drugs supplied in powder form and contained in sterile glass ampules. The powder, when dissolved in the appropriate amount of saline, gives a fresh, active analgesic solution of known strength and uniform reliability. Amethaine (amethocaine hydrochloride) in 100 mg. doses, he

Вывод. Хорошее дополнение к общей анестезии!



ЖИВОТ



**Аппендэктомия
открытым доступом:**

**-Правосторонний
латеральный TAP-блок;**

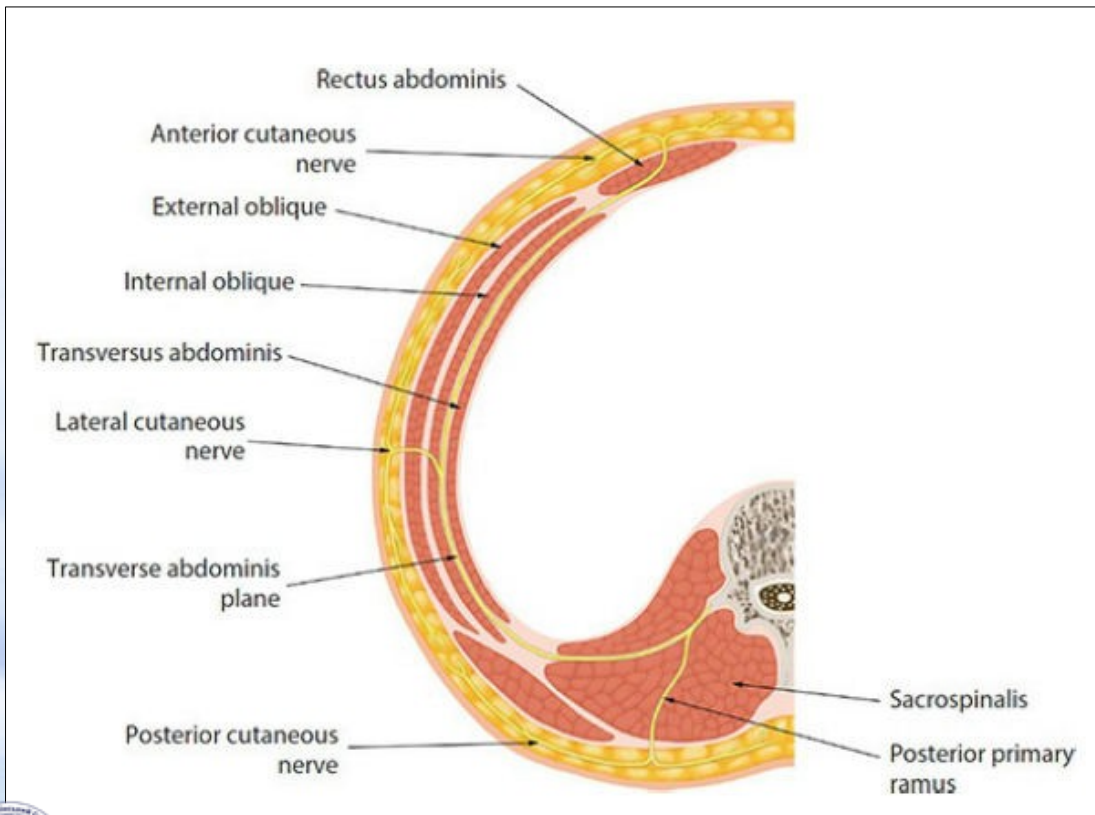
**-Правосторонний QLB-
блок;**

Латеральный TAP-блок: распределение блокады



ТАР-блок

Цель:



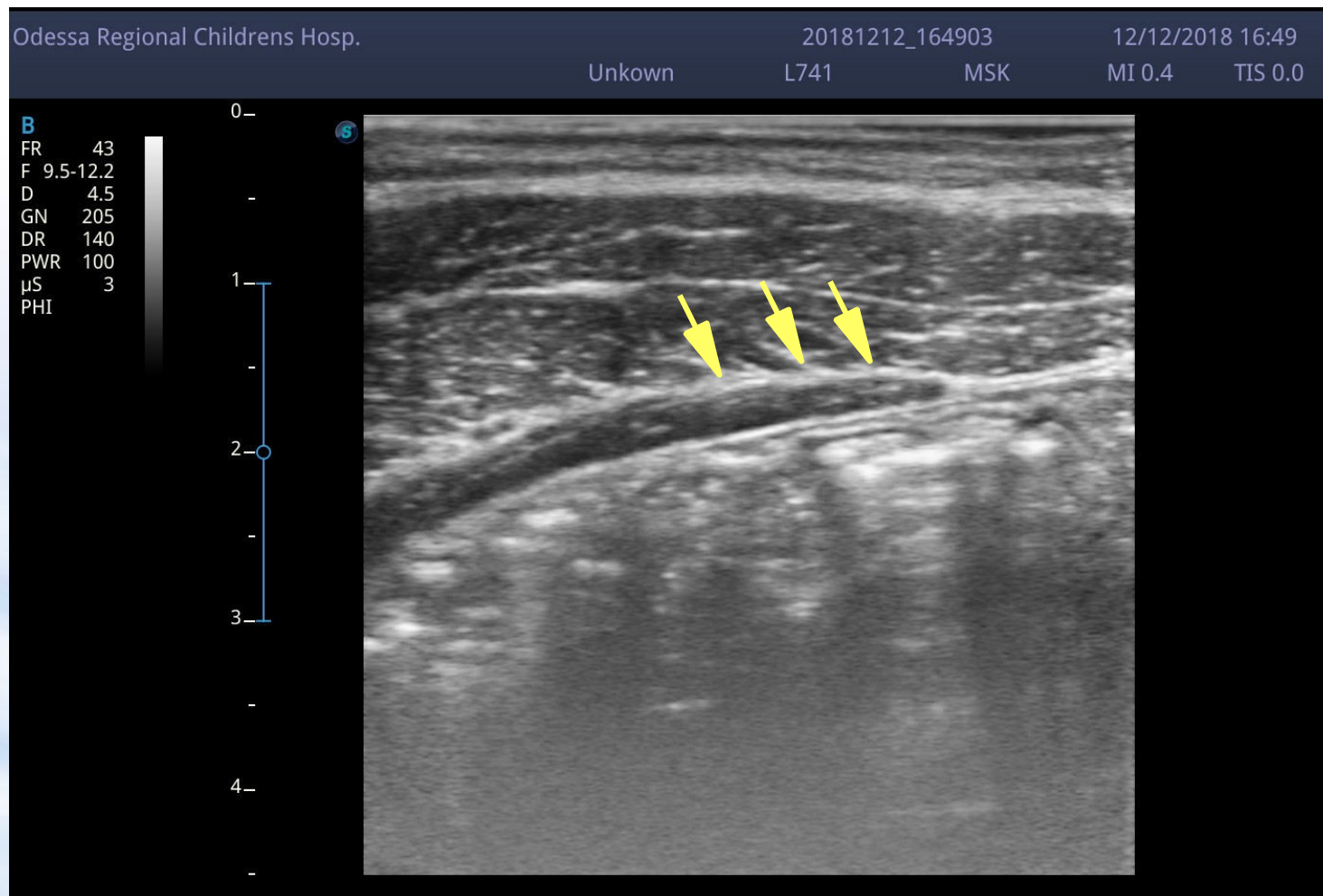
Поперечное пространство живота (Ttransversus Abdominis Pline)

- Расположено между внутренней косой и поперечной мышцами живота.
- Содержит межреберные, подреберные и L₁-сегментарный нервы.
- Позволяет достичь анестезии переднелатеральной части живота, включая париетальную брюшину.



ЖИВОТ

Латеральный ТАР-блок



ТАР-блок

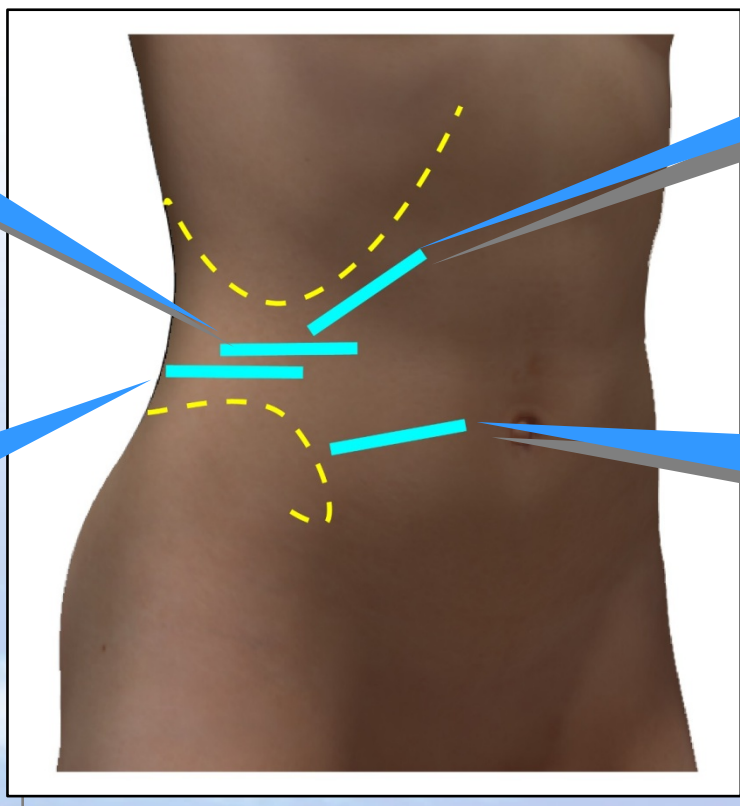
Варианты доступа

Латеральный
T10-T12

Субкостальный
T6-T9

Задний
T11-T12

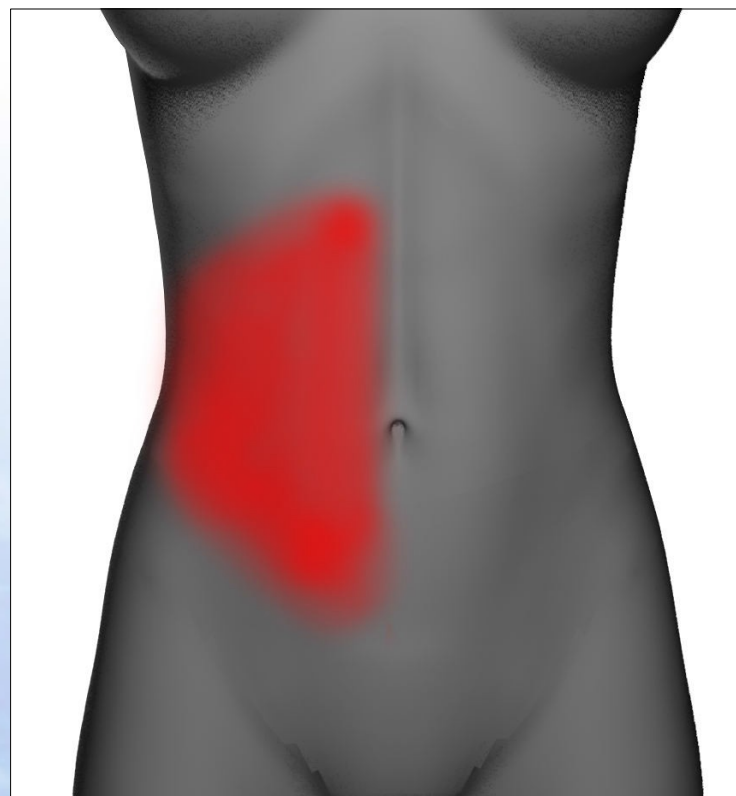
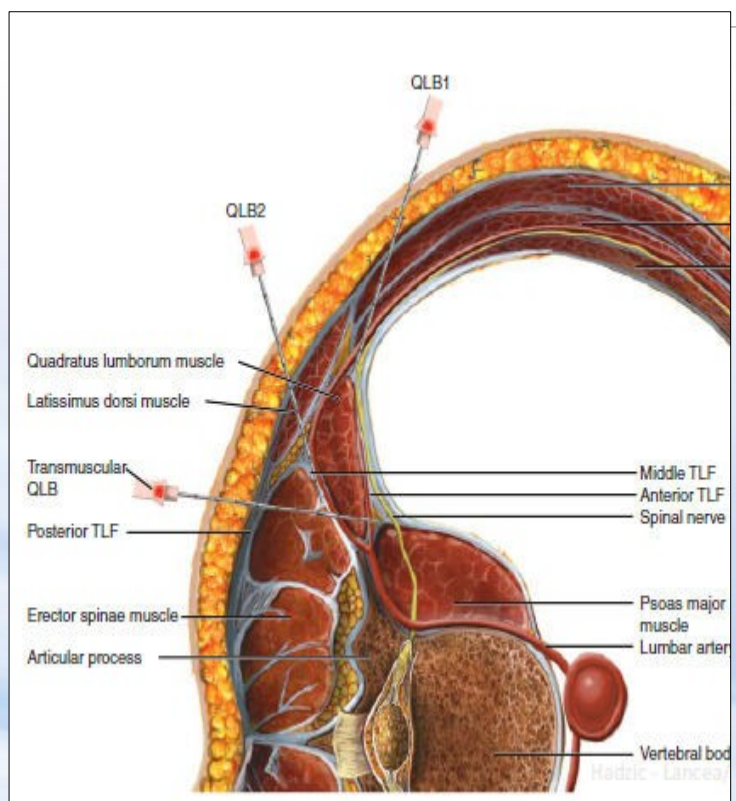
Передний
(илиоингвинальный)
T10-L1





ЖИВОТ

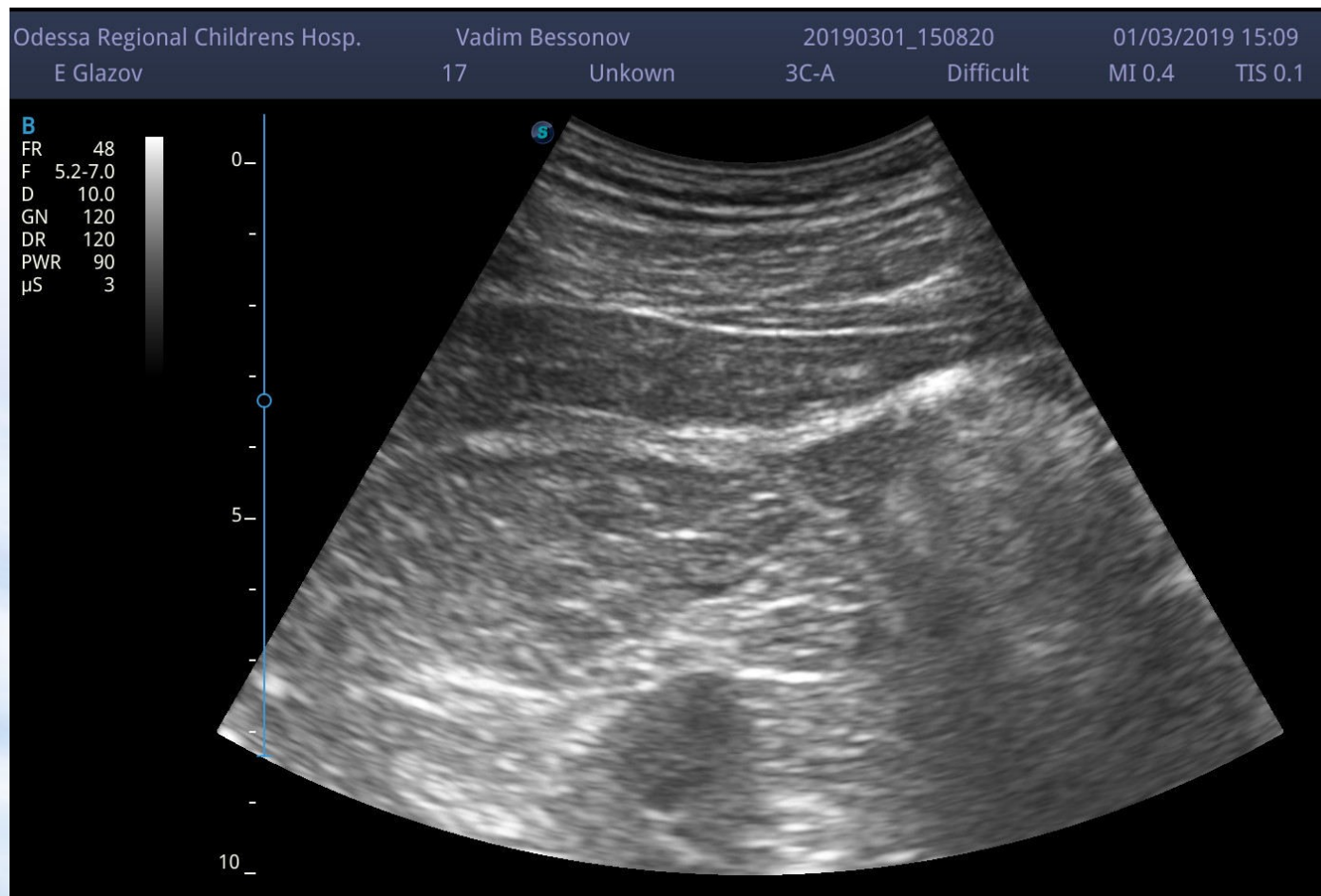
Блокада квадратной мышцы поясницы





Живот

Блокада квадратной мышцы поясницы





Quadratus Lumborum Block

Описание вариантов исполнения

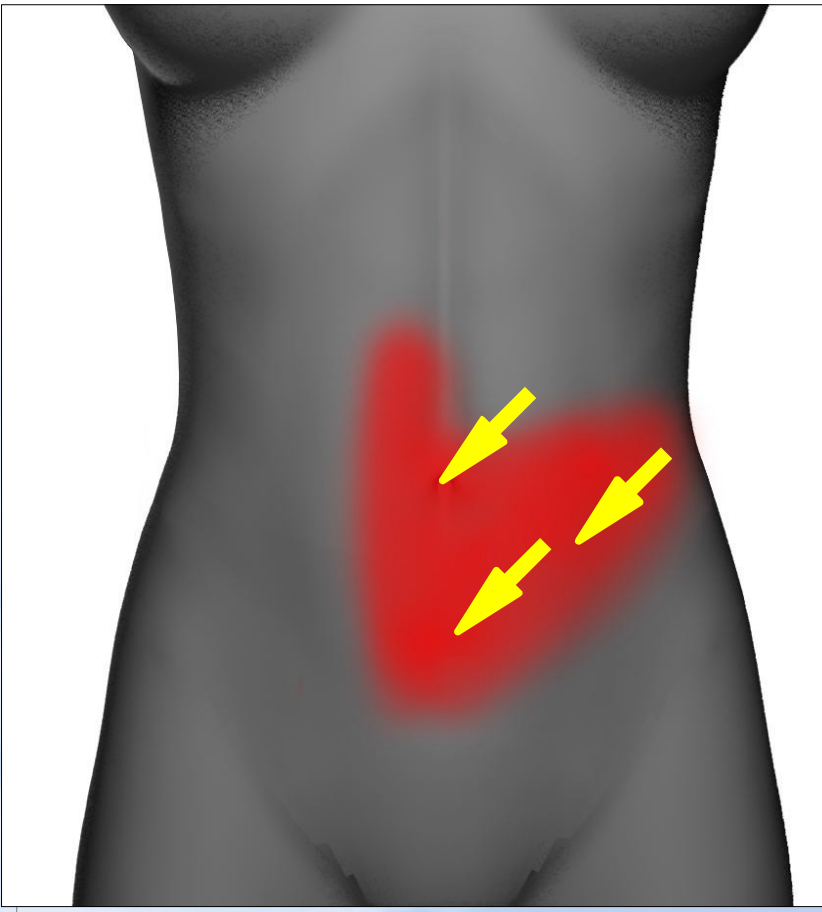
	QLB1	QLB2	TQLB
Показания	Абдоминальная хирургия ниже пупка	Абдоминальная хирургия выше и ниже пупка, требующая интраоперационной висцеральной блокады а также доступ до уровня T6	
Блокируемые дерматомы	L1	От T4 до T12-L1. Блокируются передние и латеральные кожные ветви.	
Слабость в ногах	Нет сообщений	Нет сообщений	Потенциально
Распространение к поясничному сплетению	Нет сообщений	Нет сообщений	Потенциально

Quadratus Lumborum Block

Описание вариантов исполнения

	QLB1	QLB2	TQLB
Доступ	Боковая поверхность живота между нижним краем реберной дуги и крылом подвздошной кости. In-Plane		
Потенциальные осложнения	Осложнения связанные с неверной идентификацией анатомически. Пункция кишки, печени, почки, селезенки.		
Место введения	Потенциальное пространство медиальнее мышц брюшной стенки, латеральнее QL, на стыке поперечной и тораколумбальной фасций, кнаружи от поверхностного ее листка.	Позади QL, кнаружи от среднего листка тораколумбальной фасции.	Впереди от QL, между m.psoas major, снаружи от поверхностного листка тораколумбальной фасции и поперечной фасции.
Уровень сложности	Средний	Средний	Высокий

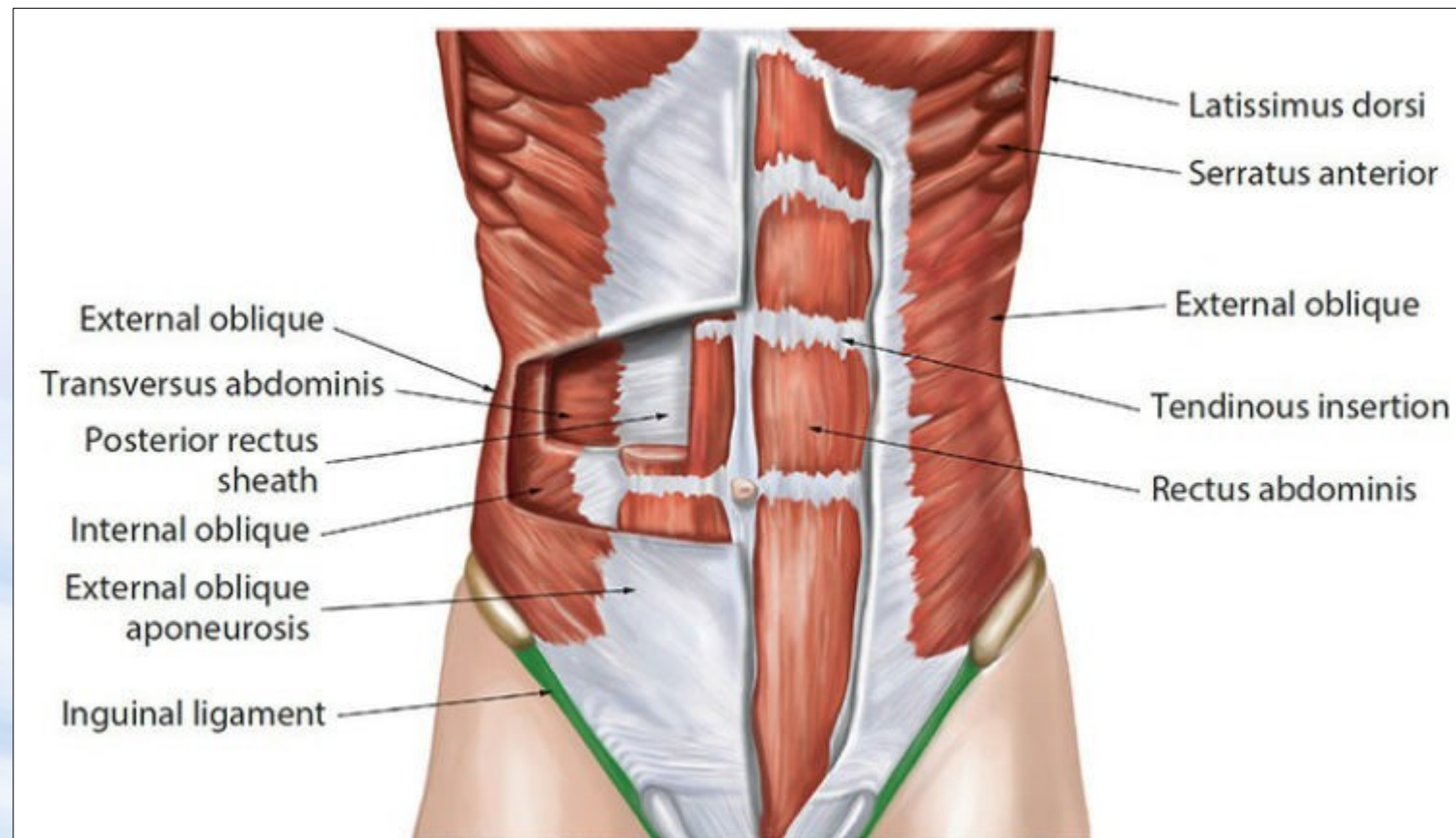
ЖИВОТ



**Аппендэктомия
лапароскопически:**

-комбинация:
левосторонний ТАР
и правосторонний
блок прямой мышцы
живота

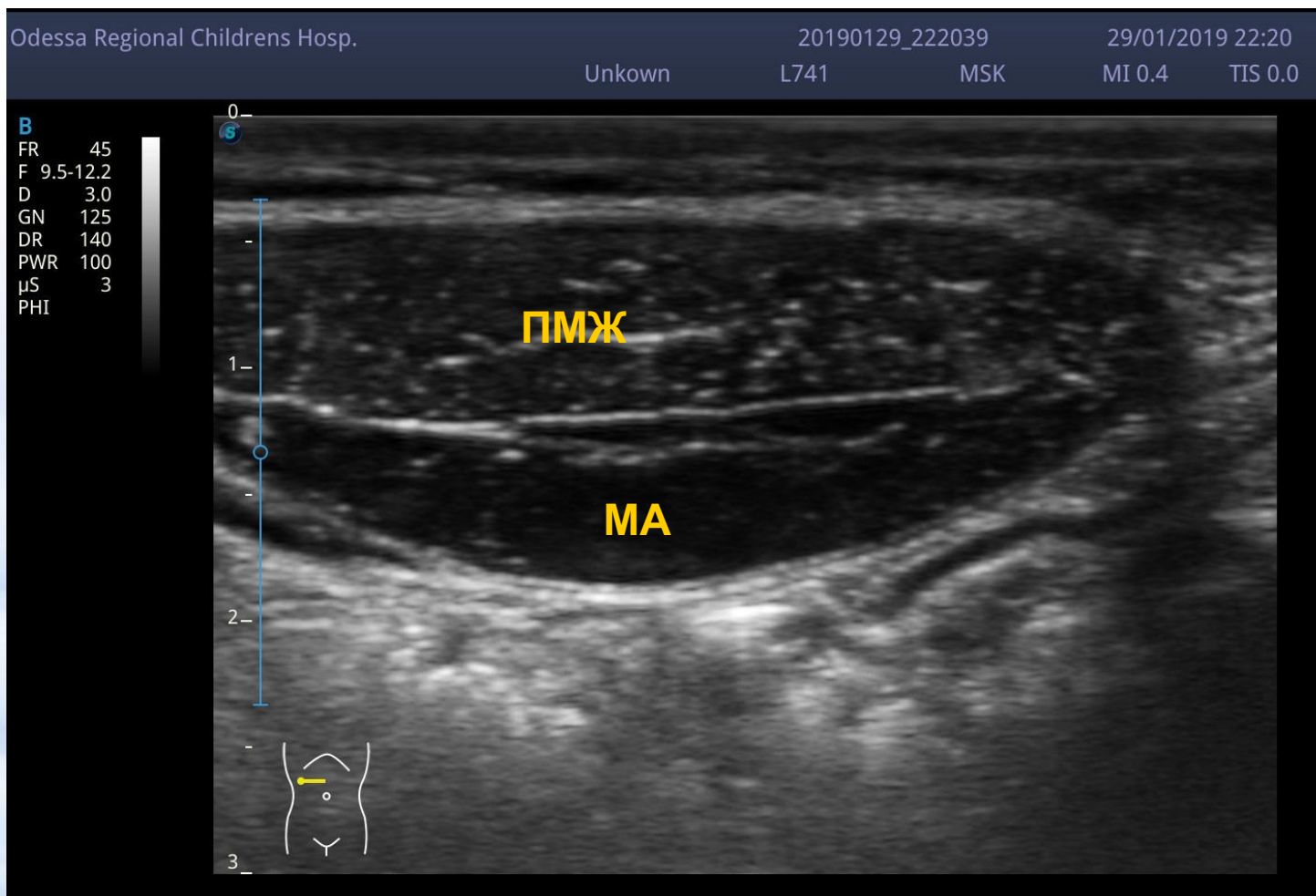
Блокада влагалища прямой мышцы живота



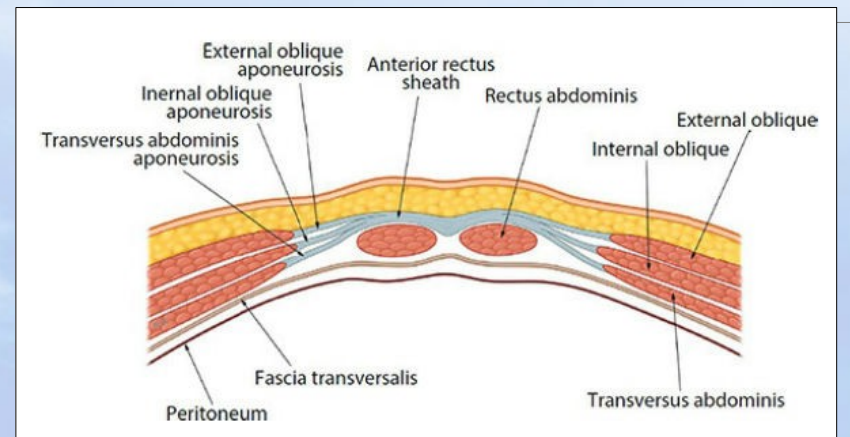
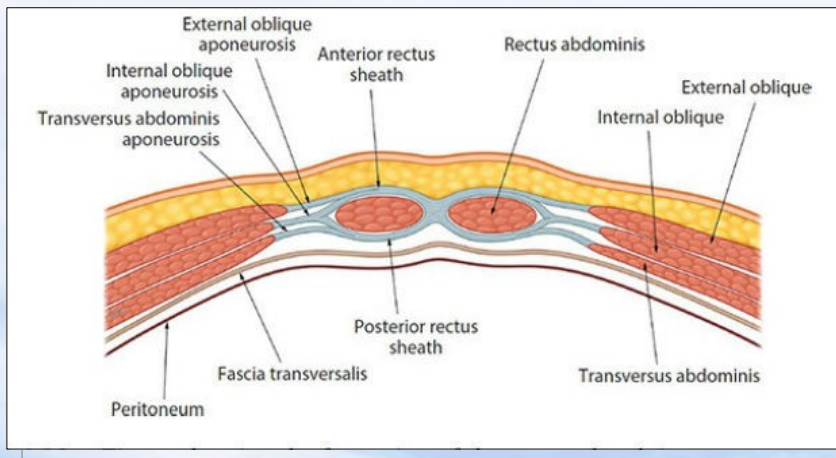
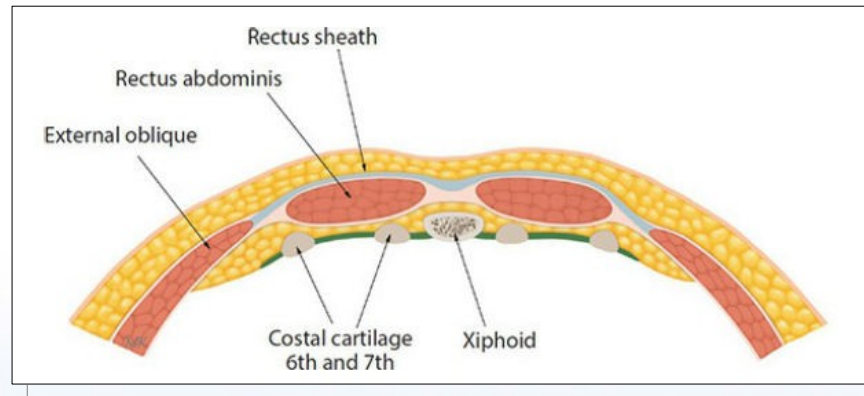


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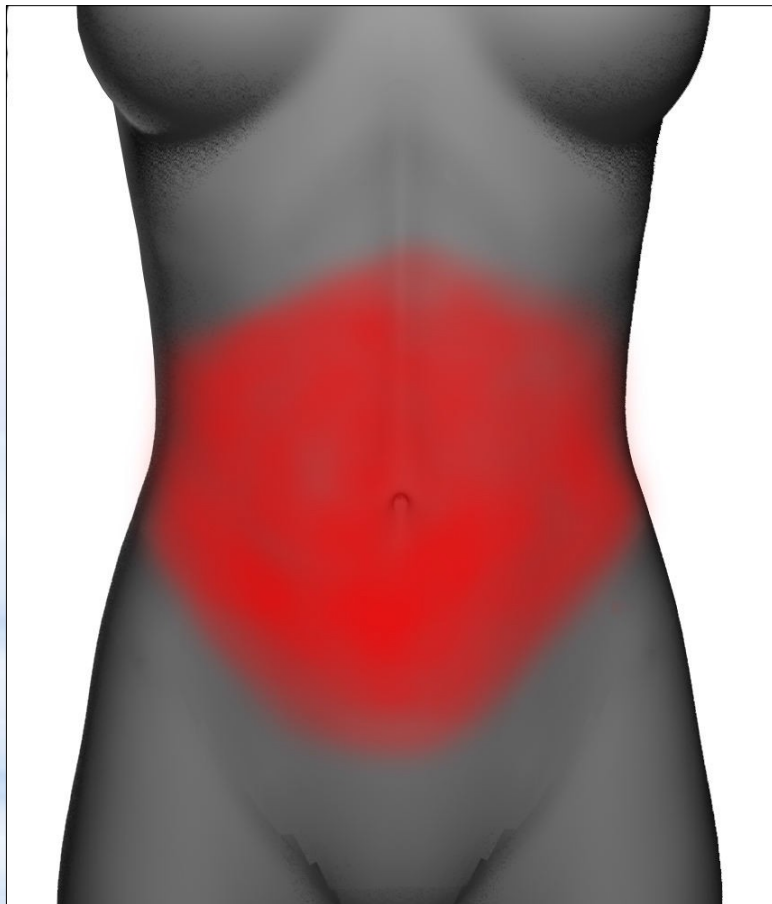
Блокада влагалища прямої м'язи живота



Блокада влагалища прямой мышцы живота



ЖИВОТ



Срединная лапаротомия:

- **Разлитой перитонит**
- **Травма органов брюшной полости**
- комбинация: билатеральный QL2-блок**
 - Альтернатива ЭА.
 - Прост в выполнении.
 - Не требует специальных наборов
 - Безопасен.

ЖИВОТ



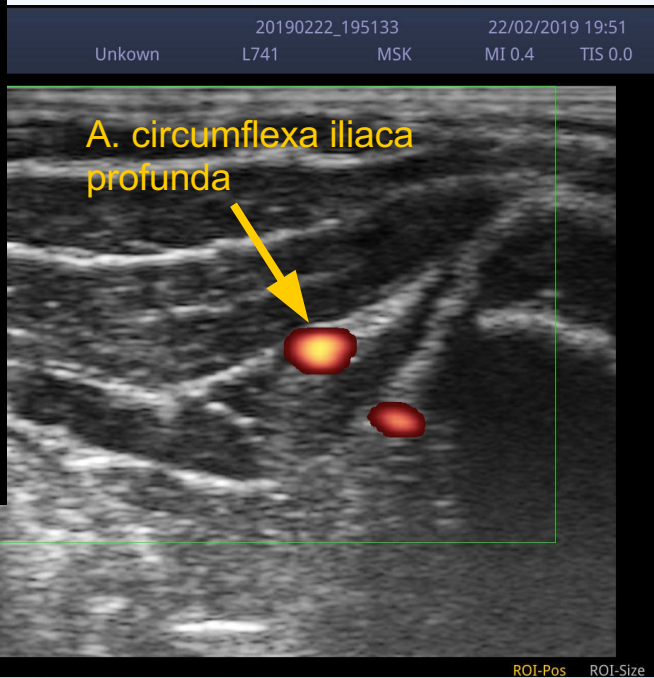
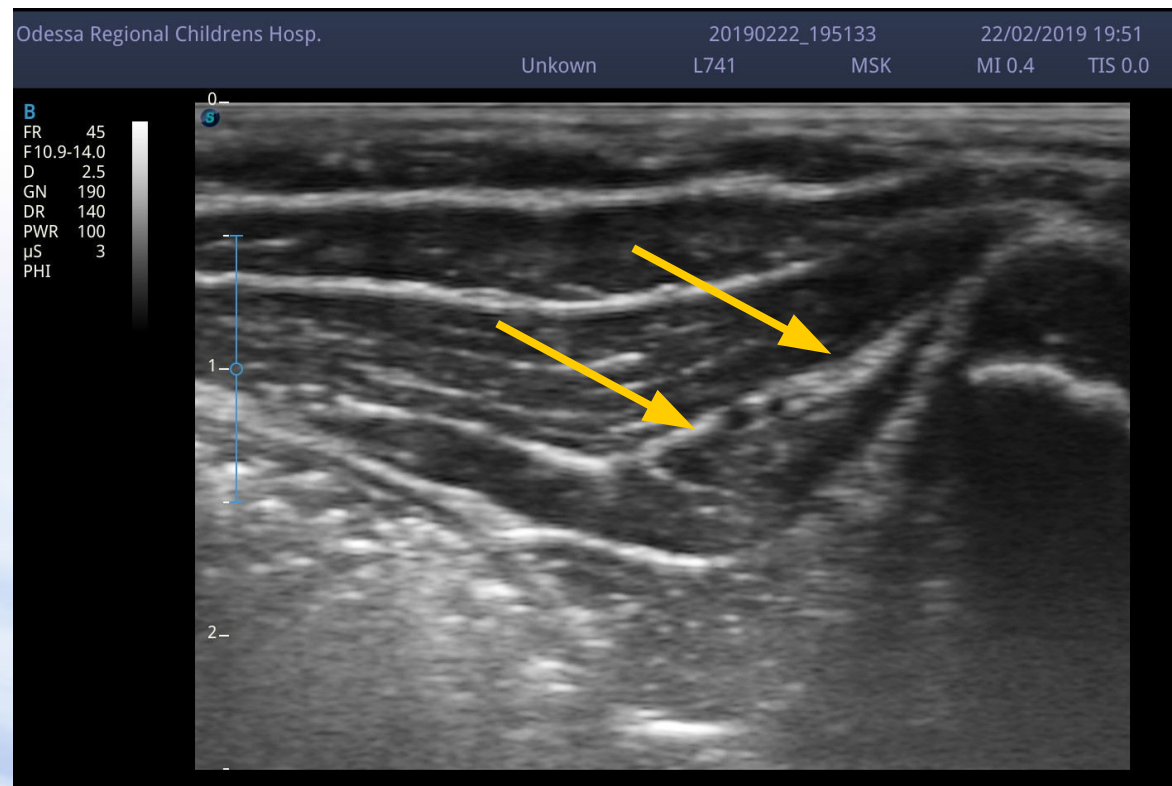
Грыжесечение:

- унилатеральный
илиоингвинальный блок



ЖИВОТ

Илиоингвинальный блок



Editorial

Regional Anesthesia for Postoperative Pain Control

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Вывод. *Необходимо использовать для контроля послеоперационной боли*





REVIEW

Perioperative regional anaesthesia and postoperative longer-term outcomes [version 1; referees: 3 approved]

Jan Jakobsson¹, Mark Z. Johnson^{2,3}

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³School of Medicine, University College Dublin, Dublin, Ireland

Conclusions

Regional anaesthesia is effective at reducing pain and opioid consumption during the early postoperative phase. The impact of regional anaesthesia on the risk for cognitive side effects of surgery, PD, and POCD seems minor. Data on the effects of local anaesthesia, local infiltration, and regional anaesthesia on quality of recovery assessed by multi-domain tools are sparse. The documentation around long-term outcomes and the potential beneficial effects on morbidity and mortality is also weak, and further high-quality studies are warranted. The potential effect on cancer progression is not proven. There are several ongoing prospective randomised studies that may help define whether regional anaesthesia techniques could not only provide effective postoperative pain but also impact cancer progression. However, it should be acknowledged that the number of patients needed to have sufficient power to show any potential significant effect is large, such studies are expensive, and long follow-up times are required.

Вывод. Снижает болевой синдром и использование опиоидных анальгетиков



Regional analgesia for postoperative pain in pediatric outpatient surgery *

Barry Shandling ¹, David J. Steward ¹

Of 156 children undergoing elective inguinal herniotomy under general anesthesia, 81 also had a regional nerve block using Bupivacaine. All were treated as outpatients and recovery was assessed by postanesthetic room nurses and by interrogating the parents as to the child's behavior at home. It was concluded that the use of supplemental regional anesthesia reduced the general anesthetic requirements and the need for postoperative analgesics, thereby providing more rapid recovery to normal activity.

**Вывод. Снижает использование анальгетиков,
быстрое восстановление активности**



Regional anaesthesia to prevent chronic pain after surgery: a Cochrane systematic review and meta-analysis†

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Study ID	Regional technique	Timing of intervention	Adjuvants	Outcomes		Follow-up
				Binary	Continuous	
Plastic surgery of the breast						
Bell and colleagues, 2001 ¹⁶	Local infiltration	Single-shot, pre-incision vs control	None	Pain/no pain	Allodynia/hyperalgesia	6 months
Breast cancer surgery						
Baudry and colleagues, 2008 ¹¹	Local infiltration	Single-shot, pre-incision vs control	None	Pain/no pain	McGill results not reported	18 months
Ibarra and colleagues, 2011 ¹³	Single shot, paravertebral block	Single shot, pre-incision vs control	None	Phantom; neuropathic pain		3 and 5 months
Kairaluoma and colleagues, 2006 ¹³	Single shot, paravertebral block	Single shot, pre-incision vs control	None	Numerical Rating Scale > 3	Analgesic consumption	12 months
Fassoulaki and colleagues, 2005 ¹⁸	Topical application	Post-incision, continuous postoperative vs control	Gabapentin	Pain/no pain	Analgesic consumption	6 months
Caesarean section						
Lavand'homme and colleagues, 2007 ⁴⁵	Wound irrigation	Pre-incision, continuous postoperative vs control	None	Pain/no pain	Analgesic consumption	6 months
Shahin and colleagues, 2010 ⁵⁵	Peritoneal instillation	Post-incision, single shot vs placebo	None	Pain/no pain	Numerical Rating Scale	8 months
Iliac crest bone graft harvesting Singh and colleagues, 2007 ⁵³	Wound irrigation	Post-incision, continuous postoperative vs control	None	Pain/no pain	VAS, pain frequency, functional activity score, overall satisfaction	4.7 yr
Hernia repair						
Burney and colleagues, 2004 ³⁷	Spinal	Single shot, pre-incision vs control	None	?	Short Form (36) Health Survey	6 months
Mounir and colleagues 2010 ³²	Wound infiltration	Single shot post-incision vs placebo	None	Pain/no pain	None	6 months
Laparotomy						
Lavand'homme and colleagues, 2005 ⁴⁴	Epidural	Pre-incision, continuous postoperative vs control	Ketamine, Clonidine	Pain/no pain	Mental Health Inventory	12 months
Katz and colleagues, 2004 ¹⁴	Epidural	Single shot, pre- vs postoperative vs none	None	Pain/no pain	Pain Disability Index and Mental Health Inventory	6 months
Amputation						
Karanikolas and colleagues, 2011 ⁴⁰	Epidural	Pre- vs intra- vs postoperative vs all vs none	None	Pain/no pain	VAS, phantom pain frequency, McGill	6 months
Katsuly-Liapis and colleagues, 1996 ⁴¹	Epidural	Pre- vs postoperative vs none	None	Pain/no pain		12 months
Pinzur and colleagues, 1996 ⁴⁷	Nerve sheath irrigation	Intra- and continuous postoperative vs none	None	Pain/no pain	McGill	6 months
Reuben and colleagues, 2006 ⁴⁸	Nerve sheath irrigation	Single shot, post-incision vs control	Clonidine	Phantom pain, stump pain		12 months
Prostatectomy						
Haythornthwaite and colleagues. 1998 ¹⁹	Epidural	Pre-incision vs postoperative	None	Pain/no pain	Allodynia/hyperalgesia	6 months

**Вывод. Снижает
риски развития
хронического
болевого синдрома**





The use of perineural catheters in pediatric population

Simić I.¹, Simić D.^{1,2}, Stanković Z.¹, Petrov I.², Stević M.^{1,2}, Dučić S.^{1,2}

¹ University Children Hospital, Belgrade, Serbia

² Medical faculty, University of Belgrade, Serbia

Use of PCs improves the control of postoperative pain, reduces the use of analgetics and opioids, postoperative nausea and vomiting, time spent in the hospital as well as costs and improves the satisfaction of children and their parents.

Вывод. Улучшает контроль послеоперационной боли, снижает ПОТР, снижает использование опиодных аналгетиков.



ORIGINAL ARTICLE

The effectiveness of ambulatory continuous peripheral nerve blocks for postoperative pain management in children and adolescents

Mihaela Visoiu¹, Lendi N. Joy², Jan S. Grudziak³ & Jacques E. Chelly⁴

- 1 Department of Anesthesiology, Acute Interventional Perioperative Pediatric Pain Service, Children's Hospital of Pittsburgh of University of Pittsburgh Medical Center, Pittsburgh, PA, USA
- 2 Acute Interventional Perioperative Pediatric Pain Service, Children's Hospital of Pittsburgh of University of Pittsburgh Medical Center, Pittsburgh, PA, USA
- 3 Department of Orthopedics, Children's Hospital of Pittsburgh of University of Pittsburgh Medical Center, Pittsburgh, PA, USA
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Efficacy of home pediatric CPNBs

M. Visoiu et al.

Table 5 Opioid rescue overtime with continuous peripheral nerve blocks

Catheter location	PACU opioid <i>n</i>	Opioid at home <i>n</i>	Daily opioid at home			
			D0 <i>n</i>	D1 <i>n</i>	D2 <i>n</i>	D3 <i>n</i>
Interscalene	30 (60%) 50	30 (100%) 30	4 (80%) 5	25 (96%) 26	19 (90%) 21	12 (86%) 14
Infrascavicular	8 (62%) 13	8 (89%) 9	3 (100%) 3	5 (100%) 5	3 (60%) 5	4 (67%) 6
Lumbar plexus	16 (84%) 19	10 (83%) 12	— —	5 (63%) 8	4 (67%) 6	7 (86%) 8
Femoral	170 (66%) 257	184 (98%) 188	43 (88%) 49	142 (96%) 148	121 (94%) 129	91 (90%) 101
Sciatic gluteal	19 (49%) 39	26 (93%) 28	2 (100%) 2	17 (89%) 19	14 (82%) 17	16 (84%) 19
Sciatic popliteal	5 (33%) 15	10 (100%) 10	— —	5 (83%) 6	6 (86%) 7	9 (90%) 10
L2 Paravertebral	3 (50%) 6	2 (33%) 6	0 (N/A) 1	2 (33%) 6	2 (33%) 6	2 (33%) 6
Other	0 (N/A) 2	— —	— —	— —	— —	— —
Total	251 (63%) 401	270 (96%) 282 ^a	52 (87%) 60	201 (93%) 217	169 (89%) 189	141 (73%) 162

PACU = postanesthesia care unit; D0 = day of surgery; D1 = postoperative day 1; D2 = postoperative day 2; D3 = to postoperative day 3; *n* = number of children in each group that had medication use documented; other = 1 supraclavicular catheter and 1 saphenous catheter. Data are presented as frequency (%), rounded to the nearest whole number, and are calculated using the number of patients with pain medication documented.

^aSixty-five patients did not have accurate medication consumption documented. Two patients were excluded from PACU analyses; one had bilateral surgical procedures and the blocks were carried out for only one side and the other one because the patient bypassed the PACU.

Вывод.

Улучшает контроль
послеоперационной
боли, снижает ПОТР,
снижает
использование
опиодных
аналгетиков.



Clinical Study

Comparison of the Effect of Lidocaine Adding Dexketoprofen and Paracetamol in Intravenous Regional Anesthesia

Ali Akdogan and Ahmet Eroglu

Analgesic requirement

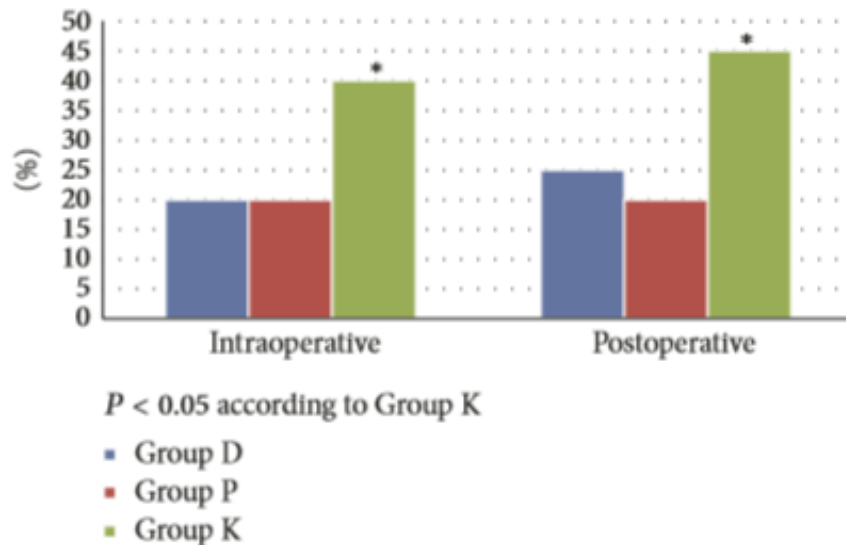


FIGURE 2: Analgesic requirement characteristics during the intraoperative and postoperative periods.

According to our results, the addition of 50 mg dexketoprofen and 3 mg/kg paracetamol to 3 mg/kg lidocaine shortened sensorial and motor block onset periods and prolonged motor block and sensorial block termination periods when compared with the patients to whom adjuvant was not added in line with the studies conducted. Furthermore, it was found that it reduced intraoperative analgesia need and intraoperative and postoperative VAS values were lower; no significant difference existed in hemodynamic parameters. In the study conducted, no significant value was found when groups that adjuvant was added to were compared.

The Analgesic Effect of Dexketoprofen When Added to Lidocaine for Intravenous Regional Anaesthesia: a Prospective, Randomized, Placebo-controlled Study

S YURTLU¹, V HANCI¹, E KARGI², G ERDOĞAN¹, BG KÖKSAL¹, Ş GÜL³, RD OKYAY¹, H AYOĞLU¹ AND İÖ TURAN¹

¹Department of Anaesthesiology and Reanimation, ²Department of Plastic and Reconstructive Surgery, and ³Department of Neurosurgery, Zonguldak Karaelmas University, School of Medicine, Zonguldak, Turkey

TABLE 4:
Intra- and postoperative pain relief requirements for patients undergoing elective hand or forearm soft-tissue surgery who received intravenous regional anaesthesia with dexketoprofen (IVRA), intravenous regional anaesthesia with separate intravenous dexketoprofen (i.v.), or control

Parameter	Control ^a (n = 15)	IVRA ^b (n = 15)	i.v. ^c (n = 15)
Patients requiring intraoperative fentanyl	12	3 ^d	6 ^d
Intraoperative fentanyl requirement, µg	61.67 ± 48.97	10.00 ± 20.70 ^d	23.33 ± 31.99 ^d
Time to first postoperative analgesic request, min	58.46 ± 58.29	540.67 ± 285.49 ^{d,e}	321.00 ± 302.82 ^d
24-h paracetamol requirement, mg	1566.7 ± 562.7	300.0 ± 253.5 ^{d,e}	766.6 ± 622.9 ^d

Data presented as mean ± SD or n of patients.

^a40 ml 0.5% lidocaine + 2 ml saline IVRA + 2 ml dexketoprofen 50 mg i.v.; ^b40 ml 0.5% lidocaine + 2 ml saline IVRA + 2 ml 0.9% saline i.v.; ^c40 ml 0.5% lidocaine + 2 ml dexketoprofen 50 mg IVRA + 2 ml 0.9% saline i.v.

^dP < 0.05 versus control group; ^eP < 0.05 versus i.v. group; Mann-Whitney U-test was used for continuous data and Fisher's exact test was used for categorical data.

In conclusion, the present study found that the addition of dexketoprofen 50 mg to lidocaine for IVRA improved postoperative analgesia and decreased the need for supplementary intraoperative analgesia. The optimal dose of dexketoprofen remains to be determined.

Вывод. 50 мг декскетопрофена улучшает послеоперационную аналгезию



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

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.

аналгезію





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