SFAR le CONGRÈS

du 23 au 25 Septembre 2021

PALAIS DES CONGRÈS DE PARIS

ADARPEF



QUOI DE NEUF EN ANESTHESIE LOCO-REGIONALE PEDIATRIQUE?



M. DE QUEIROZ

Département Anesthésie-Réanimation Pédiatrique

Hôpital Femme Mère Enfant

Bron / Lyon

Hospices Civils de Lyon

WWW.SFAR-LECONGRES.COM

Nouveaux blocs?

Adjuvants?

Nouveauté pur caudale?



Nouveaux blocs paroi abdominale?

- Innervation paroi
  - Nerfs intercostaux T6-T11
  - Nerf sub costal T12
  - L1 => nerf ilio-inguinal ilio-hypogastrique
  - Branches ant et latérales séparation jonction carré des lombes/fascia transversalis
  - Anastomoses
- **T6/T12 cheminent dans espace entre m OI et transverse = Transversus Abdominis Plane**
- **L1/n II IH plan post du QLB, sortie vers EIAS**
- **Fascia Thoraco-Lombaire / Fascia transversalis / Plan transverse**

Fascial plane blocks: a narrative review of the literature RAPM 2021

David H Kim,[1,2] Sang Jo Kim,[1,2] Jiabin Liu,[1,2] Jonathan Beathe,[1,2] Stavros G Memtsoudis [1,2]

Revoir l'anatomie….

Original research

Standardizing nomenclature in regional anesthesia: an ASRA-ESRA Delphi consensus study of abdominal wall, paraspinal, and chest wall blocks

RAPM 2021

El-Boghdadly

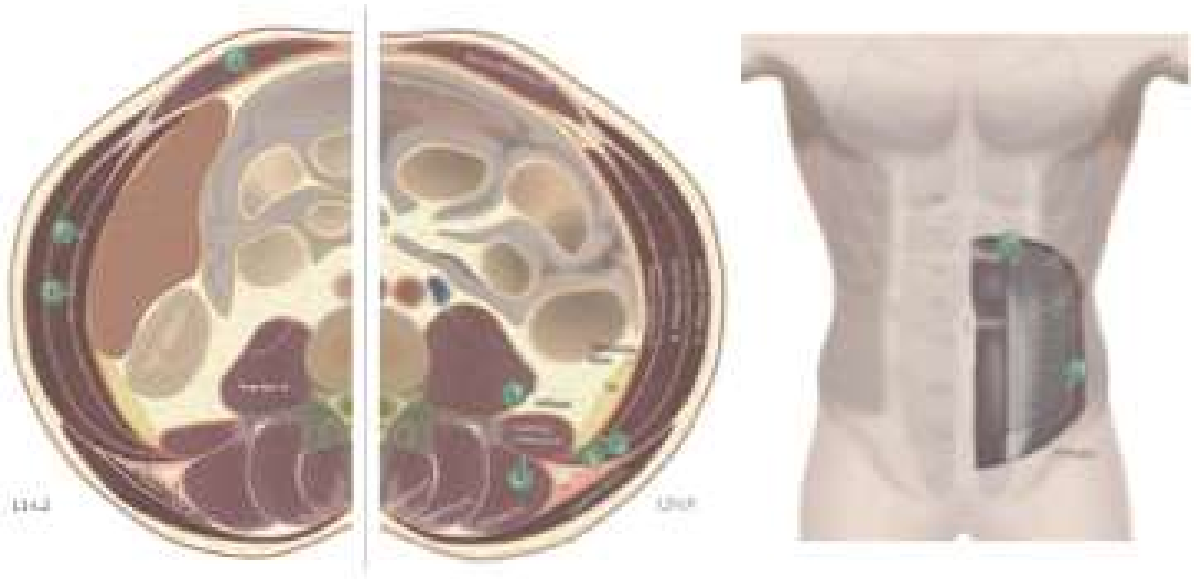
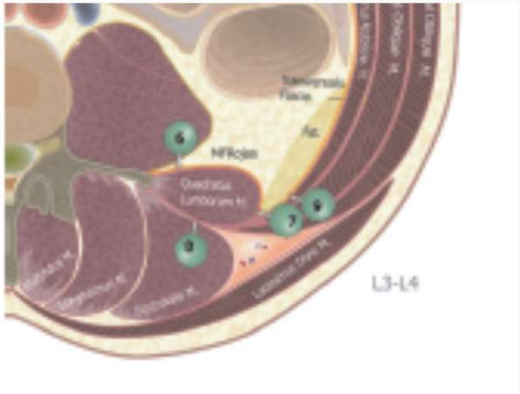


Figure 3 Illustrations of recommended names and anatomical locations of injection for abdominal wall. (1) Rectus sheath block; (2) ilioinguinal iliohypogastric nerves block; (3) transverse abdominis plane (TAP); (4) midaxillary TAP block; (5) subcostal TAP block; (6) anterior quadratus lumborum block (QLB); (7) lateral QLB; (8) posterior QLB; (9) transversalis fascia plane block.

BLOC CARRE DES LOMBES
Quadratus Lumborum Block





Inj / m CDL
CDL1 = inj lat
CDL2 = inj post
CDL3 = inj ant

El-Boghdadly RAPM 2021

Diffusion espace paravertébral => analgésie pariétale et viscérale

The Pathway of Injectate Spread With the Transmuscular Quadratus Lumborum Block: A Cadaver Study

Mette Dam, MD,* Bernhard Moriggl, MD, PhD,† Christian K. Hansen, MD,* Romed Hoermann,† Thomas F. Bendtsen, MD, PhD,‡ and Jens Børglum, MD, PhD*

Received: 8 October 2019 | Revised: 14 January 2020 | Accepted: 1 February 2020
DOI: 10.1111/pan.13837

RESEARCH REPORT

Pediatric Anesthesia WILEY

A Prospective, randomized comparative study between ultrasound-guided posterior quadratus lumborum block and ultrasound-guided ilioinguinal/ iliohypogastric nerve block for pediatric inguinal herniotomy

Artid Samerchua[1] | Prangmalee Leurcharusmee[1] | Kachain Panichpichate[1] | Nutchanart Bunchungmongkol[1] | Mullika Wanvoharn[1] | Kanokkan Tepmalai[2] | Jiraporn Khorana[2] | Sireekarn Chantakhow[2]

PEDIATRIC ANALGESIA

ULTRASOUND ARTICLE

Quadratus Lumborum Block Versus Transversus Abdominis Plane Block in Children Undergoing Low Abdominal Surgery

A Randomized Controlled Trial

Gözen Öksüz, MD, Bora Bilal, MD,* Yavuz Gürkan, MD,† Aykut Urfalıoğlu, MD,* Mahmut Arslan, MD,* Gökçe Gişi, MD,* and Hafize Öksüz, MD**

RAPM 2017

Comparison of quadratus lumborum block and caudal block for postoperative analgesia in pediatric patients undergoing inguinal hernia repair and orchiopexy surgeries: a randomized controlled trial

Gözen Öksüz ,[1] Mahmut Arslan,[1] Aykut Urfalıoğlu,[1] Ahmet Gökhan Güler,[2] Şeyma Tekşen,[1] Bora Bilal,[1] Hafize Öksüz[1]

RAPM 2020

RESEARCH REPORT

WILEY Pediatric Anesthesia

Ultrasound guided quadratus lumborum block compared to caudal ropivacaine/ morphine in children undergoing surgery for vesicoureteric reflex

Makoto Sato

QLB ≥

Pediatric Anesthesia

Pediatric Anesthesia ISSN 1155-5645

RESEARCH REPORT

Dermatomal spread following posterior transversus abdominis plane block in pediatric patients: our initial experience

09/2016

Maria A. Hernandez, Tricia Vecchione & Karen Boretsky

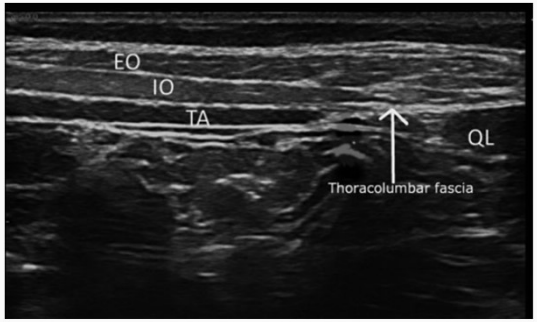
#SFAR201900301

LE TAP BLOC EST-IL UNE ALTERNATIVE AUX CURARES POUR LA CHIRURGIE LAPAROSCOPIQUE DE L'ENFANT ? ETUDE RANDOMISÉE CONTRÔLÉE EN DOUBLE AVEUGLE.

Anesthésie / Douleur

A. Galuszkiewicz [1], *M. Maniora [1], S. Bringuier [1], L. Hertz [1], C. Macq [1], P. Pirat [1], C. Dadure [1], C. Sola [1].
CHU LAPEYRONIE - Montpellier (France)

T7 = 40%
T8 = 67%
T9= 93%
T12/L1= 100%



	Curare N=57	TAP Bloc + Curare N=51	TAP Bloc N=55	P value
Age (ans)	9,96 ± 2,53	9,84 ± 2,39	10,8 ± 2,28	0,079
ASA (I/ II)	56 (98) / 1 (2)	47 (92) / 4 (8)	49 (89) / 6 (11)	0,143
Sexe (F/M)	21 (37) / 36 (63)	25 (49) / 26 (51)	19 (35) / 35 (65)	0,289
Poids (kg)	35,3 ± 11,4	34,6 ± 11,7	38,2 ± 12,3	0,233
Nalbuphine 24ièresh postop (mg/kg)	0,2 [0,2-0,4]	0,2 [0,2-0,35]	0,2 [0,2-0,3]	0,241
Pplat 5 mn post insufflation (mmH_2O)	16,9 ± 2,6	17,9 ± 3,11	17,1 ± 2,5	0,509
ENV Confort Chirurgical				
- 5 min post insufflation	9,25 [8-10]	10 [8-10]	9 [8-10]	0,141
- Fermeture chirurgicale	10 [9-10]	10 [9-10]	10 [8-10]	0,843

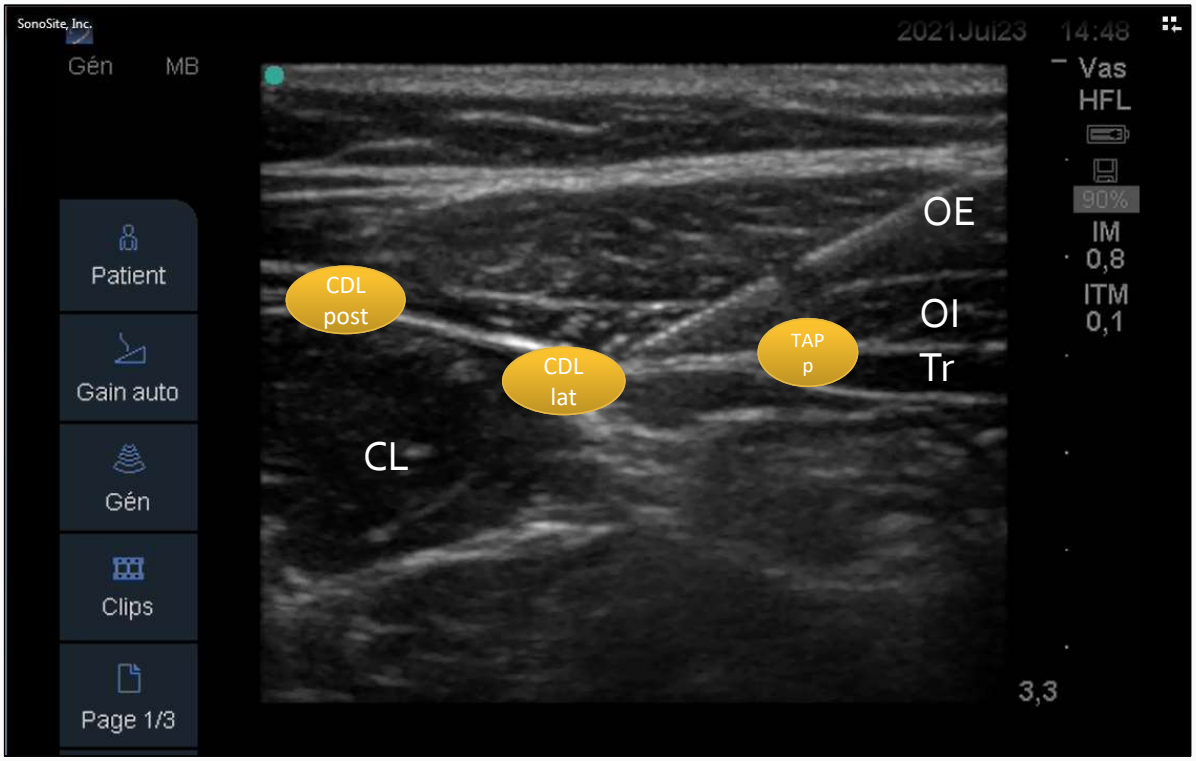
Pediatric Anesthesia

Pediatric Anesthesia 2010 20: 1022–1027 doi:10.1111/j.1460-9592.2010.03432.x

Improved analgesia with the ilioinguinal block compared to the transversus abdominis plane block after pediatric inguinal surgery: a prospective randomized trial

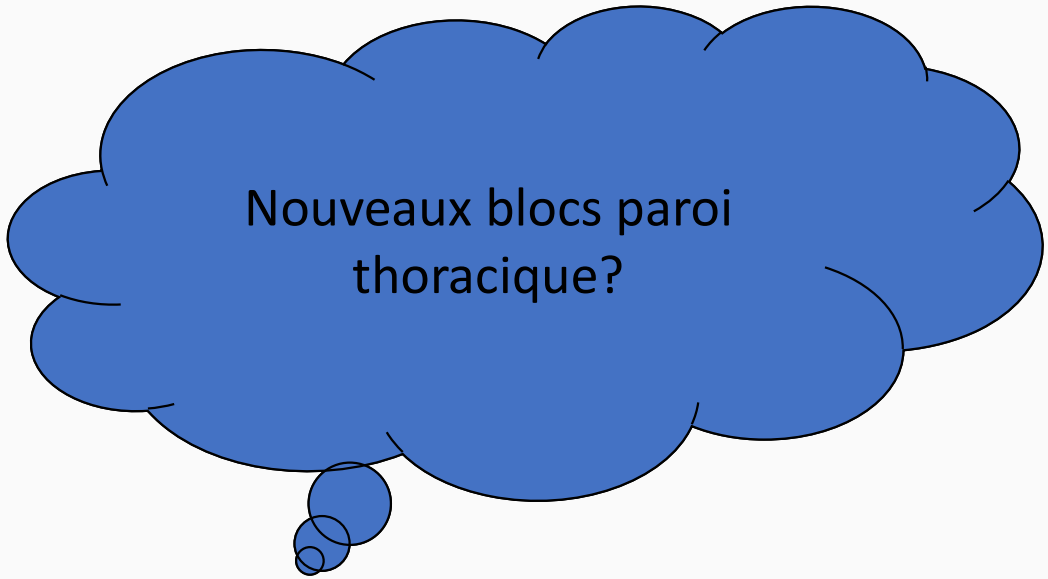
MICHAEL J. FREDRICKSON FANZCA*, CLINTON PAINE MBCHB† AND JAMES HAMILL FRACS‡
*Department of Anaesthesiology, University of Auckland, †Department of Anaesthesia, Starship Children's Hospital and ‡Department of Surgery & Urology, Starship Children's Hospital, Auckland, New Zealand

BIIIH > TAP



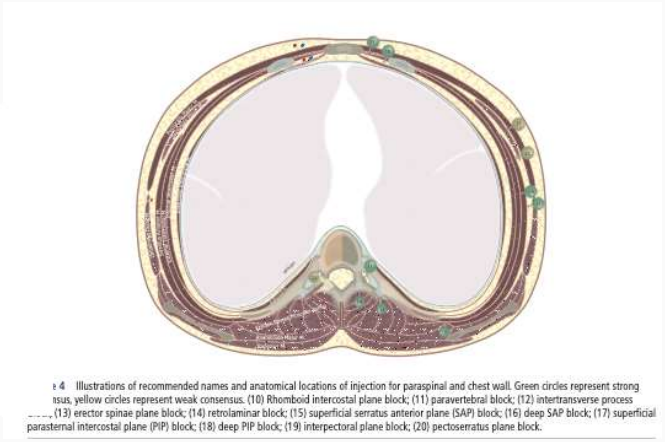


TAPp = QLB lat?
Diffusion chez l'enfant

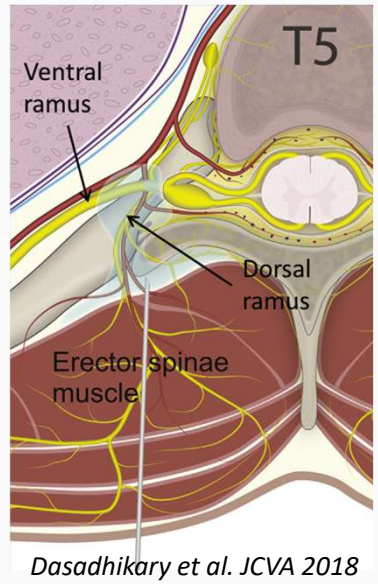

Nouveaux blocs paroi thoracique?

Original research

Standardizing nomenclature in regional anesthesia: an ASRA-ESRA Delphi consensus study of abdominal wall, paraspinal, and chest wall blocks RAPM 2021

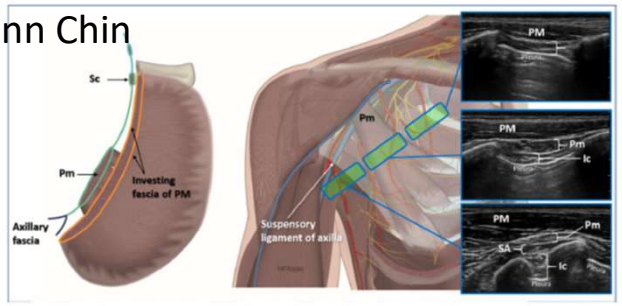


4 Illustrations of recommended names and anatomical locations of injection for paraspinal and chest wall. Green circles represent strong nsus, yellow circles represent weak consensus. (10) Rhomboid intercostal plane block; (11) paravertebral block; (12) intertransverse process (13) erector spinae plane block; (14) retrolaminar block; (15) superficial serratus anterior plane (SAP) block; (16) deep SAP block; (17) superficial parasternal intercostal plane (PIP) block; (18) deep PIP block; (19) interpectoral plane block; (20) pectoserratus plane block.



Dasadhikary et al. JCVA 2018

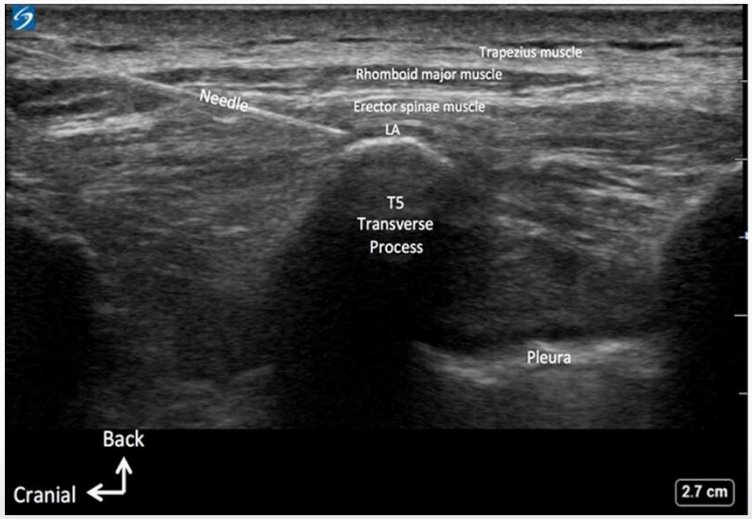
Ki Jinn Chin



PEC



SAP



ESP

Received: 16 August 2019 | Revised: 21 December 2019 | Accepted: 23 December 2019
DOI: 10.1111/pan.13804

SYSTEMATIC REVIEW

Pediatric Anesthesia WILEY

Early experience with erector spinae plane blocks in children

Erica L. Holland | Adrian T. Bosenberg

TABLE 1 (Continued)

	Seattle children's	Literature review
Urology	30 (18%)	24 (19%)
Pyeloplasty	18	2
Ureteral re-implantation	5	
Uretero-ureterostomy	2	
Ureterostomy	1	
Cystolithotomy	1	
Antegrade Continent Enema Procedure (ACE)	1	
Bladder augmentation	1	
Mitrofanoff	1	
Varicocelectomy, Hydrocelectomy, Orchiopexy		21
Hypospadias		1
Cardiac	14 (9%)	10 (8%)
Repair aortic coarctation (thoracotomy)	10	1
Repair double aortic arch (thoracotomy)	1	
Aortopexy (thoracotomy)	1	
Diaphragmatic plication (thoracotomy)	1	1
Division vascular ring (thoracotomy)	1	3
Patent ductus arteriosus		2
Median sternotomy		3
General surgery	120 (73%)	85 (66%)
Thoracic	27 (16%)	22 (17%)
Thoracotomy	4	6
Video-assisted thoracoscopy	9	4
Pectus excavatum/carinatum (Nuss/Ravitch)	13	6
Robotic thymectomy	1	
Rib graft/costal cartilage resection		6
Gastrostomy tube	64 (39%)	
Open or laparoscopic	54	
Closure	10	
Open abdominal procedures	20 (12%)	56 (44%)
Biopsy abdominal mass	2	
Cholecystectomy	1	
Closure ileostomy/colostomy	5	
Epigastric/Ventral hernia repair	4	
Excision lesion costal margin	1	
Neuroblastoma resection	1	
Neurofibromatosis excision	1	
Duodenal atresia repair	1	
Kasai	1	
Diaphragmatic hernia repair	2	
Partial nephrectomy	1	
Inguinal hernia		47
Laparoscopic abdominal procedures	5 (3%)	5 (4%)
Heller Myotomy	3	
Nephrectomy	1	
Bowel resection	1	
Cholecystectomy		4
Other general surgery procedures	4	2
Venous malformation excision	2	
Excision back lipoma	1	1
Simple mastectomy	1	

Received: 18 January 2021 | Revised: 13 June 2021 | Accepted: 25 June 2021
DOI: 10.1111/pan.14255

SYSTEMATIC REVIEW

Pediatric Anesthesia WILEY

Effects of erector spinae plane block on postoperative pain in children undergoing surgery: A systematic review and meta-analysis of randomized controlled trials

Rong Luo[1,2] | Xin Tong[3] | Weidong Yan[4] | Haibei Liu[1,2] | Lei Yang[1,2] | Yunxia Zuo[1,2]

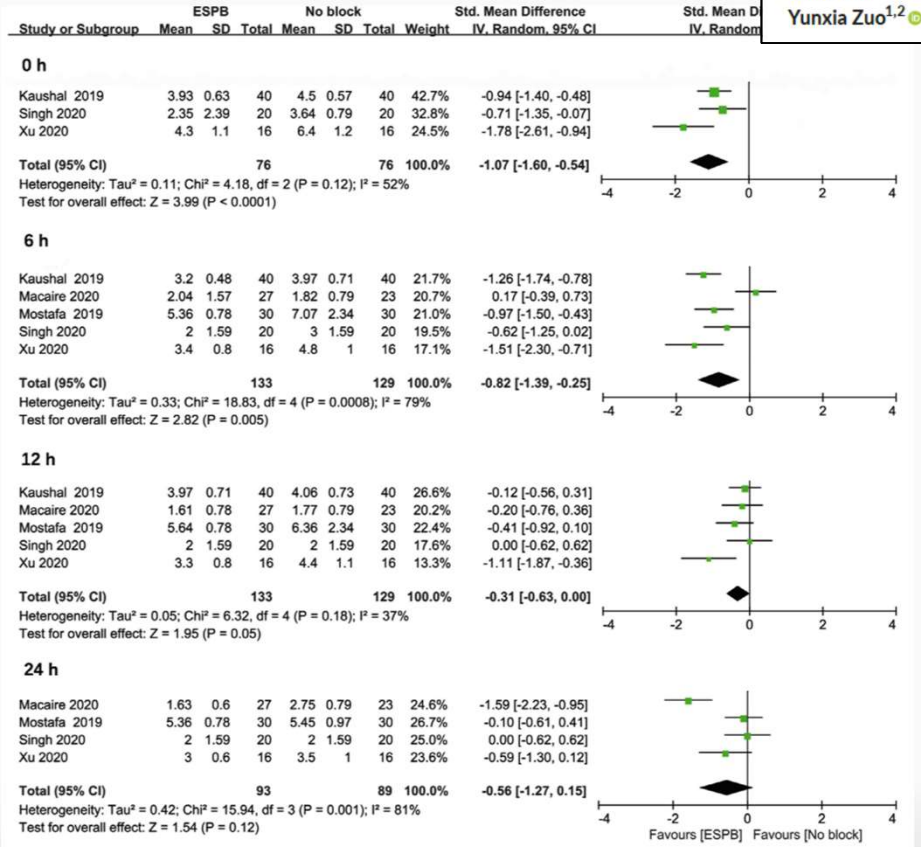


FIGURE 3 Forest plot of postoperative pain scores at rest at 0, 6, 12, and 24 h for the erector spinae plane block versus no block. ESPB, erector spinae plane block;IV, inverse variance

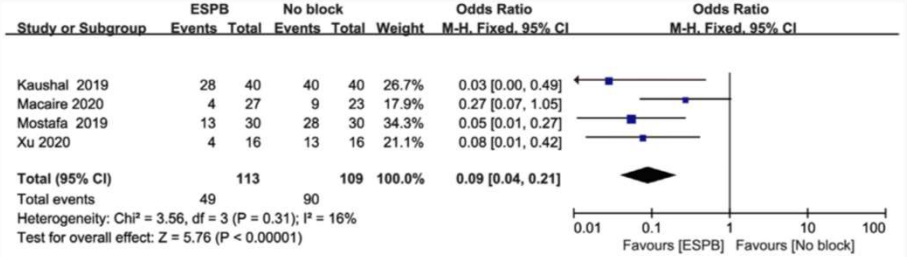


FIGURE 4 Forest plot of the number of patients receiving rescue analgesics for the ESPB versus no block. ESPB, erector spinae plane block; M-H, Mantel-Haenszel method

Conclusions: This review provides low-quality evidence that erector spinae plane block exhibits superior analgesia compared to no block in children. Due to the limited data, evidence regarding the comparison with other regional blocks remains unclear. Future large-sized and well-designed randomized controlled trials are needed.

Journal of Clinical Anesthesia 57 (2019) 24–28

Contents lists available at ScienceDirect

Journal of Clinical Anesthesia

journal homepage: www.elsevier.com/locate/jclinane

Original Contribution

Erector Spinae Plane Block vs Quadratus Lumborum Block for pediatric lower abdominal surgery: A double blinded, prospective, and randomized trial

Can Aksu (MD) (Assistant Professor)[a,*], Mehmet Celal Şen (MD) (Assistant Professor)[b], Mustafa Alper Akay (MD) (Assistant Professor)[b], Canan Baydemir (MD) (Professor)[c], Yavuz Gürkan (MD) (Professor)[a]

Table 2
Postoperative FLACC scores at different time intervals.

	FLACC 0	FLACC 1	FLACC 3	FLACC 6
ESPB	0 (0-1)	0 (0-0)	0 (0-0)	0 (0-0)
QLB	0 (0-1)	0 (0-0)	0 (0-0)	0 (0-0.2)
p	0.521	0.958	0.161	0.341

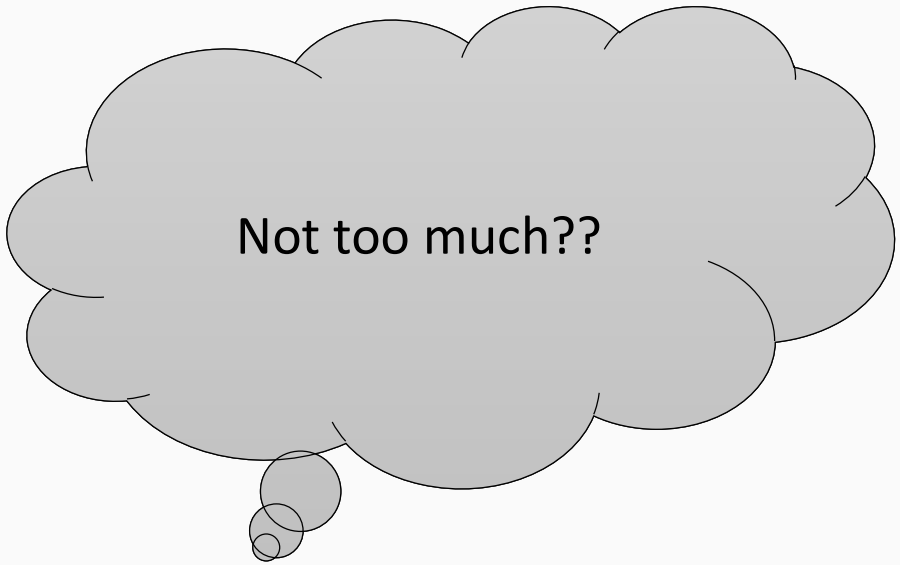
Data are expressed as median (percentiles 25–75).

> Anesth Essays Res. Apr-Jun 2019;13(2):274-279. doi: 10.4103/aer.AER_81_19.

Ultrasound-Guided Erector Spinae versus Ilioinguinal/Iliohypogastric Block for Postoperative Analgesia in Children Undergoing Inguinal Surgeries

El-Sayed M El-Emam [1], Enas A Abd El Motlb [1]

ESPB > BIIIH


Not too much??

SERRATUS PLANE BLOCK

Contents lists available at ScienceDirect

Journal of Cardiothoracic and Vascular Anesthesia

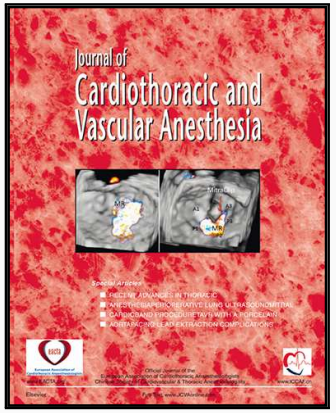
journal homepage: www.jcvaonline.com



Case Report

The "Feasibility" And "Safety" Of Ultrasound Guided Bilateral Two Level Serratus Anterior Plane Block in Children With Median Sternotomy Pain: A Case Series

Ilke Kupeli, MD*,[1], Adisa Šabanović Adilović, MD†



Comparison of the efficacy of Ultrasound-guided Serratus anterior plane block, Pectoral Nerves II block and Intercostal Nerve block for the management of postoperative thoracotomy pain after pediatric cardiac surgery

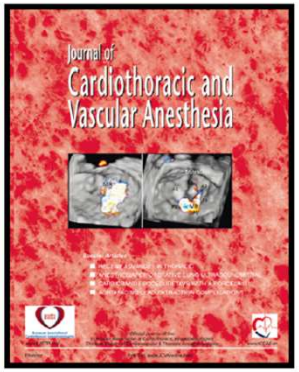
2018

Accepted Manuscript

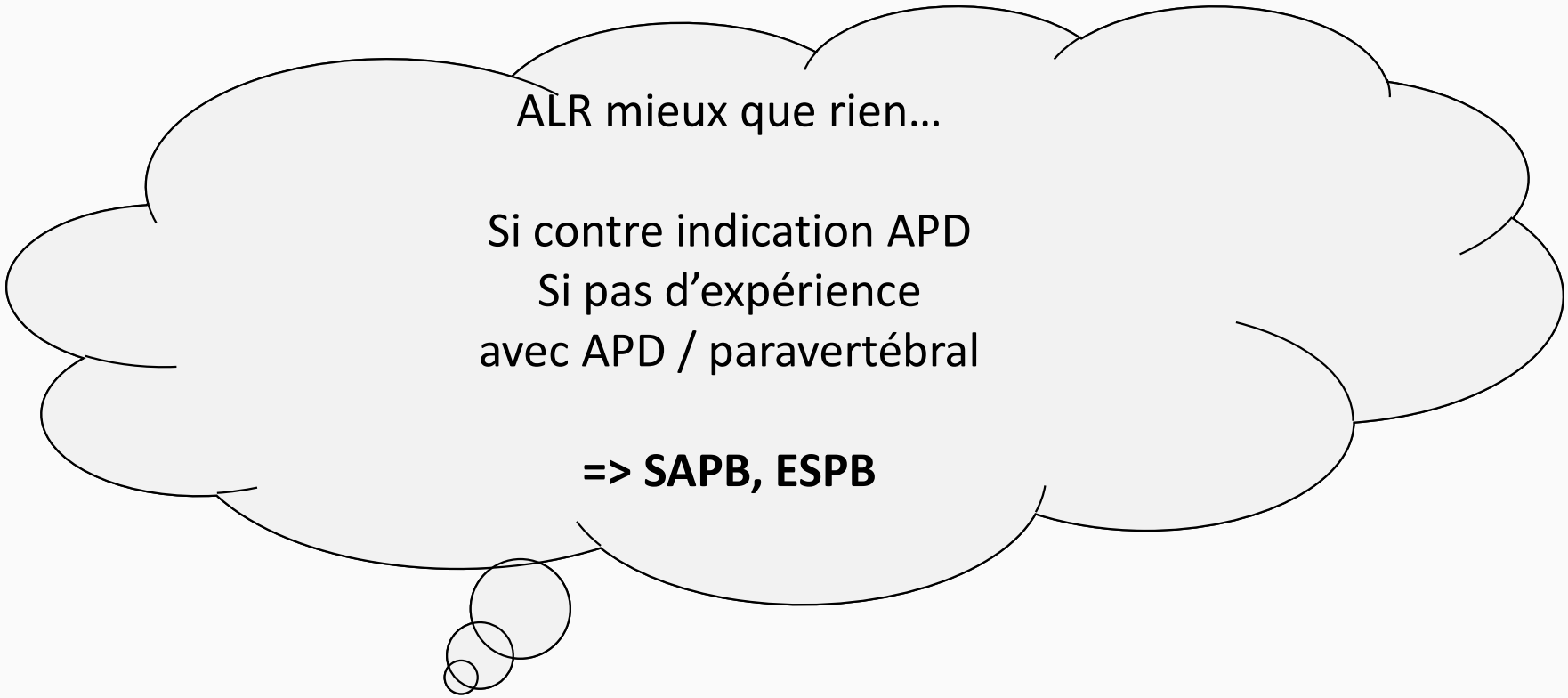
Ultrasound-Guided Serratus Anterior Plane Block for Pain Management Following Minimally Invasive Repair of Pectus Excavatum

Gulbin Tore Altun MD , Mustafa Kemal Arslantas MD , Pelin Corman Dincer MD , Zeynep Zuhal Aykaç MD

PII: S1053-0770(19)30323-4
DOI: https://doi.org/10.1053/j.jvca.2019.03.063
Reference: YJCAN 5229



SAPB = PEC2 > ICNB


ALR mieux que rien…
Si contre indication APD
Si pas d'expérience
avec APD / paravertébral
=> SAPB, ESPB

Des nouveautés pour la caudale?

Echec caudale 1%
Ponction dure mère : 0,08%
Suresh PRAN Anesth Analg 2015

Pediatric Anesthesiology

ORIGINAL CLINICAL RESEARCH REPORT

Real-Time Ultrasound Improves Accuracy of Caudal Block in Children

Adam C. Adler, MD, MS, FAAP, FASE,* Craig A. Belon, MD, PhD,* Danielle M. Guffey, MS,† Charles G. Minard, PhD,† Nihar V. Patel, MD,* and Arvind Chandrakantan, MD, MBA, FAAP, FASA*



Correction et amélioration succès /écho Débutants+++

Pediatric Anesthesia

RESEARCH REPORT

Confirmation of success rate of landmark-based caudal blockade in children using ultrasound: A prospective analysis

Karen R. Boretsky, Carlos Camelo, David B. Waisel, Veronique Falciola, Cornelius Sullivan, Elena Brusseau, Elizabeth Eastburn, Andrea Gomez-Morad, Wasin Luckanavanich,

First published: 08 April 2020 | https://doi.org/10.1111/pan.13865 | Citations: 4

Pediatric Anesthesia

Pediatric Anesthesia ISSN 1155-5645

ORIGINAL ARTICLE

2015

Should we abandon landmark-based technique for caudal anesthesia in neonates and infants?

Seyed Ali Mirjalili[1], Kiarash Taghavi[2], Geoff Frawley[3,4] & Susan Craw[5]


Et les adjuvants?

Review > Reg Anesth Pain Med. 2021 May;46(5):422-432. doi: 10.1136/rapm-2020-102024. Epub 2021 Jan 15.

Efficacy and safety of caudal dexmedetomidine in pediatric infra-umbilical surgery: a meta-analysis and trial-sequential analysis of randomized controlled trials

Ushma Jitendra Shah [1 2], Derek Nguyen [3], Niveditha Karuppiaah [2 4], Janet Martin [1 4], Herman Sehmbi [5]

Findings Data from 19 included RCTs (n=1190) suggested that compared with control (mean duration 346 min), the addition of caudal dexmedetomidine significantly prolonged the duration of analgesia (ratio of means 2.14, 95% CI 1.83 to 2.49, p<0.001; 'moderate' evidence). Trial-sequential analysis showed adequate 'information size' for the primary outcome. Caudal dexmedetomidine also reduced the number of analgesic administrations ('low' evidence), total acetaminophen dose ('moderate' evidence) and the risk of emergence delirium ('moderate' evidence). There were no significant differences in adverse effects such

Pediatric Anesthesia

Pediatric Anesthesia ISSN 1155-5645

2015

SYSTEMATIC REVIEW

Alpha-2 adrenoceptor agonists as adjuncts to peripheral nerve blocks in children: a meta-analysis

Märit Lundblad[1,2], Mehdi Trifa[3], Olfa Kaabachi[4], Sonia Ben Khalifa[3], Amjed Fekih Hassen[3], Thomas Engelhardt[5], Staffan Eksborg[6] & Per-Arne Lönnqvist[1,2]

Received: 17 April 2018 | Revised: 12 July 2018 | Accepted: 23 July 2018

DOI: 10.1111/pan.13469

RESEARCH REPORT

WILEY Pediatric Anesthesia

Caudal and intravenous dexmedetomidine similarly prolong the duration of caudal analgesia in children: A randomized controlled trial

Yusheng Yao[1] | Chao Yu[2] | Xiaolan Zhang[3] | Yanhua Guo[1] | Xiaochun Zheng[1,4]

In conclusion, caudal and IV dexmedetomidine 1 μg/kg as a local anesthetic adjuvant for pediatric caudal block significantly prolong the duration of postoperative analgesia without increasing the incidence of adverse events. However, given the off-label status of dexmedetomidine in children and the few data regarding neurotoxicity, dexmedetomidine should be primarily administered intravenously.

Regional Anesthesia and Acute Pain Medicine

Section Editor: **Richard Brull**

META-ANALYSIS

Anesth Analg 2017

Effect of an Intravenous Dexamethasone Added to Caudal Local Anesthetics to Improve Postoperative Pain: A Systematic Review and Meta-analysis Wit Trial Sequential Analysis

Hiromasa Kawakami, MD,* Takahiro Mihara, MD, PhD,*† Nobuhito Nakamura, MD,* Koui Ka, MD,* and Takahisa Goto, MD, PhD†

≥0.5 mg/kg IV

Regional Anesthesia and Acute Pain Medicine

Section Editor: **Richard Brull**

META ANALYSIS

AA 2018

Dexamethasone as an Adjuvant for Caudal Blockade in Pediatric Surgical Patients: A Systematic Review and Meta-analysis

Matthew A. Chong, MD,* Daniel J. Szoke, MD,* Nicolas M. Berbenetz, MD,† and Cheng Lin, MD*

Saleh *et al. BMC Anesthesiology* (2018) 18:178
https://doi.org/10.1186/s12871-018-0637-y

BMC Anesthesiology

RESEARCH ARTICLE Open Access

Role of dexamethasone in the para-vertebral block for pediatric patients undergoing aortic coarctation repair. randomized, double-blinded controlled study

Amany H. Saleh[1,2*], Passaint F. Hassan[1], Mohamed Elayashy[1], Hamza M. Hamza[1], Mona H. Abdelhamid[1], Mai A. Madkour[1], Pierre Z. Tawadros[1], Heba Omar[1], Mohamed M. Kamel[1], Marwa Zayed[1] and Mohamed Helmy[1]

Accepted: 29 December 2017

DOI: 10.1111/pan.13338

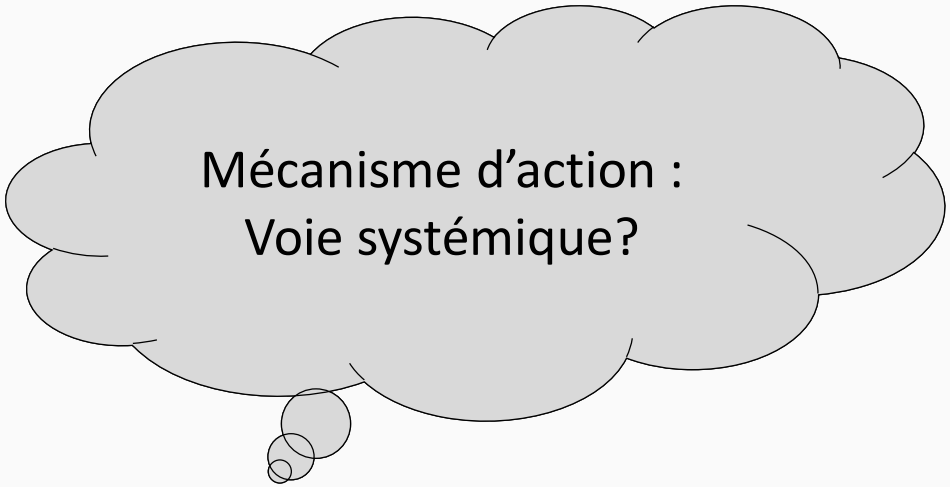
SYSTEMATIC REVIEW

WILEY Pediatric Anesthesia

Caudal and intravenous dexamethasone as an adjuvant to pediatric caudal block: A systematic review and meta-analysis

Change Zhu | Saiji Zhang | Zhiqing Gu | Yiru Tong | Rong Wei

Conclusion: Caudal and intravenous dexamethasone could provide longer duration of postoperative analgesia and reduced the incidence of postoperative vomiting with comparable adverse effects than plain caudal block. However, any additive to the caudal space carries with it the potential for neurotoxicity and that caution should always be exercised when weighting the risks and benefits of any additive. The result was influenced by small numbers of participants and significant heterogeneity.


Mécanisme d’action :
Voie systémique?

PEDIATRIC ANALGESIA

SPECIAL ARTICLE 2018

The European Society of Regional Anaesthesia and Pain Therapy/American Society of Regional Anesthesia and Pain Medicine Recommendations on Local Anesthetics and Adjuvants Dosage in Pediatric Regional Anesthesia

Santhanam Suresh, MD, Claude Ecoffey, MD,† Adrian Bosenberg, MB, ChB, FFA(SA),‡ Per-Anne Lonnqvist, MD,§ Gildasio S. de Oliveira Jr, MD, MSCi,|| Oscar de Leon Casasola, MD,** José de Andrés, MD, PhD,†† and Giorgio Ivani, MD‡‡*

Adjuvants for Neuraxial and Peripheral Blocks

Initial Word of Caution/Disclaimer: With the exception of clonidine and preservative-free morphine none of the other adjuvant agents mentioned in this practice advisory guideline are registered for spinal/epidural administration. None of the agents are registered for injection close to peripheral nerve structures. Thus, the decision to use the drugs mentioned below as adjuvants to PRA will be governed by the individual practitioner's decision, departmental policy, and the existing medicolegal situation.

Dexmedetomidine has been used to prolong postoperative analgesia when used as an adjunct to neuraxial blocks (ie, caudal block). Because toxicity data are very limited in children, the dose used should be the minimally necessary to achieve the benefits and minimize potential adverse effects. (Evidence A2)

Evidence-Based Conclusions and Clinical Advice for Peripheral Nerve Block Adjuvants

- Alpha-2 adrenoceptor agonists (eg, dexmedetomidine) can be used as an adjunct to prolong the duration of peripheral nerve blocks in children.[58] Because toxicity data are very limited in children, the dose used should be the minimally necessary to achieve the benefits and minimize potential adverse effects. (Evidence A1)

Corticosteroids (eg, dexamethasone) have been used in small studies in pediatric patients as a neuraxial adjuvant. Based on the current clinical evidence, the advisory committee does not recommend the use of corticosteroids as a neuraxial adjuvant in children. (Evidence B2)

CONCLUSION

- « Nouveaux » blocs?
  - Préférer TAP post, QLB ou BIIIH
  - ESP, SAP, PEC si peu d'expérience en péridurale thoracique ou paravertébral
  - Mieux que pas d'ALR
- Echo pour caudale
  - Surtout quand difficultés techniques et/ou enseignement
- Adjuvants
  - Clonidine : **central**/IV
  - Dex : central? / IV
  - Dexamethasone : IV (posologie?)


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ENFIN!!!!

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