



QUOI DE NEUF EN ALR

Sébastien BLOC

D. Barouk – M. Bucciero – G. Dufour
F. Le Sache – C. Quemeneur



CONFLITS D'INTERET

Ge Healthcare - Bbraun – Gamida – Aguettant



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▶ Start Menti

0	0	0	0
Surtout en orthopédie	Souvent sans AG associée	Pour toutes les chirurgies	Rarement



Allez sur **menti.com** et utilisez le code **7416 7312**

0

Techniques
récentes

0

Indications
supplémentaires

0

Position dans
parcours patient

0

Utilisations
nouvelles



ANESTHESIA & ANALGESIA



The NEW ENGLAND
JOURNAL of MEDICINE

BJA

British Journal of Anaesthesia



ANESTHESIOLOGY

Trusted Evidence: Discovery to Practice

Regional Anesthesia & Pain Medicine

Anaesthesia

Peri-operative medicine, critical care and pain

Anaesthesia
Critical Care
& Pain Medicine

EJA

Anatomie

Technique

Indications



Douleur
Transitionnelle

Parcours
patients

Pharmacologie

Douleur
Aigue

Douleur
Chronique

PRATIQUE

REGIONAL ANAESTHESIA

Assistive artificial intelligence for ultrasound image interpretation in regional anaesthesia: an external validation study

James S. Bowness^{1,2,*}, David Burckett-St Laurent³, Nadia Hernandez¹, Pearse A. Keane^{5,6}, Clara Lobo⁷, Steve Margetts⁸, Eleni Moka⁹, Amit Pawa^{10,11}, Meg Rosenblatt¹², Nick Sleep⁸, Alasdair Taylor¹³, Glenn Woodworth¹⁴, Asta Vasalauskaite⁸, J. Alison Noble¹⁵ and Helen Higham^{1,16}

BJA 2023

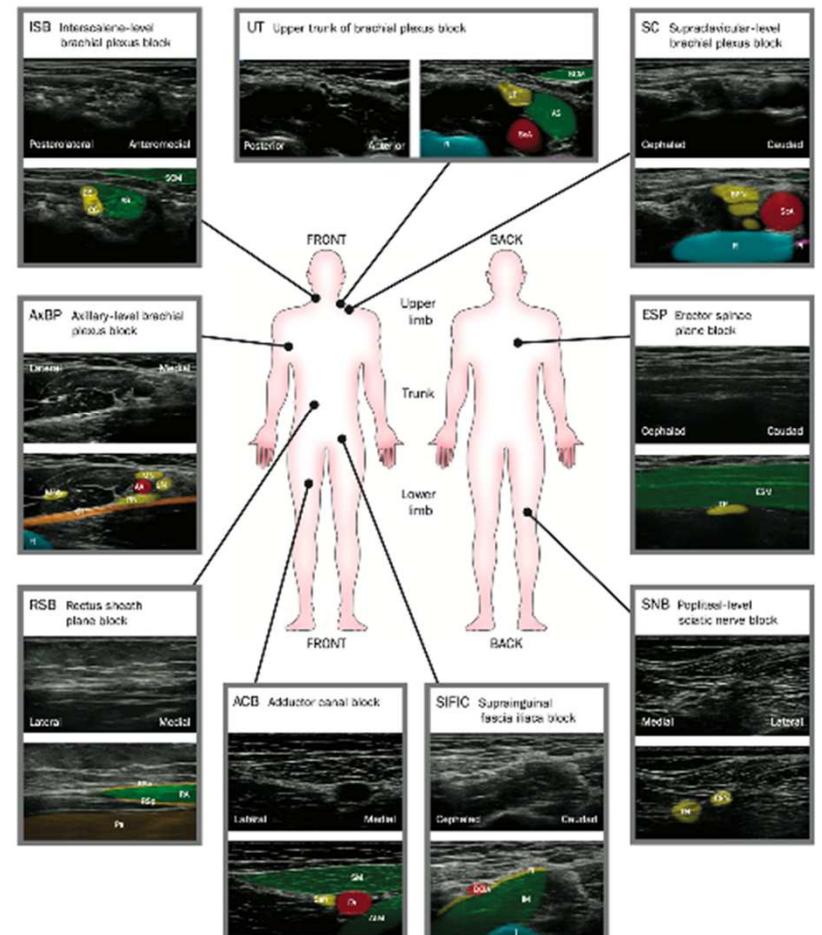
Création image

Evaluation of the impact of assistive artificial intelligence on ultrasound scanning for regional anaesthesia

James S. Bowness^{1,2,*}, Alan J. R. Macfarlane^{3,4}, David Burckett-St Laurent⁵, Catherine Harris², Steve Margetts⁸, Megan Morecroft⁶, David Phillips⁷, Tom Rees⁷, Nick Sleep⁸, Asta Vasalauskaite⁸, Simeon West⁷, J. Alison Noble⁸ and Helen Higham^{1,9}

Interprétation image

Colour overlays produced by ScanNav Anatomy Peripheral Nerve Block



PRATIQUE

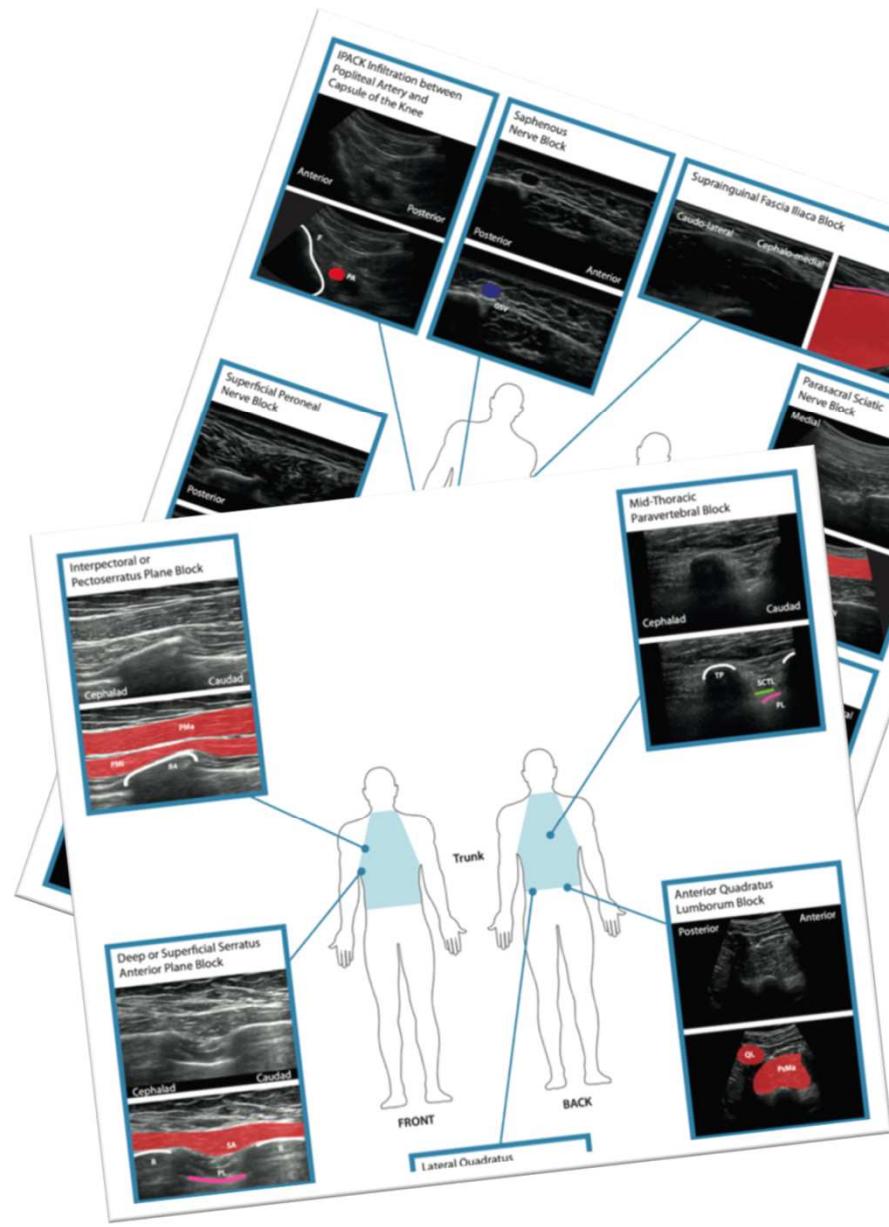
Regional & Pain Medicine

Recommendations for anatomical structures to identify on ultrasound for the performance of intermediate and advanced blocks in ultrasound-guided regional anesthesia

Toby Ashken ¹, James Bowness ^{2,3}, Alan James Robert Macfarlane ^{4,5}, Lloyd Turbitt ⁶, Boyne Bellew ^{7,8}, Nigel Bedforth ⁹, David Burkett-St Laurent ¹⁰, Alain Delbos ¹¹, Kariem El-Boghdady ^{12,13}, Nabil M Elkassabany ¹⁴, Jenny Ferry ³, Ben Fox ¹⁵, James L H French ¹⁶, Calum Grant ¹⁷, Ashwan Gupta ¹⁸, Rajnish K Gupta ¹⁹, Yavuz Gürkan ²⁰, Nat Haslam ²¹, Helen Higham ²², Rosemary M G Hogg ²³, David F Johnston ⁶, Rachel Joyce Kearns ^{24,25}, Clara Lobo ²⁴, Sonya McKinlay ^{4,5}, Edward R Mariano ^{25,26}, Stavros Memtsoudis ^{27,28}, Peter Merjavy ²⁹, Madan Narayanan ³⁰, J Alison Noble ²³, David Phillips ³, Meir Rosenblatt ³², Amy Sadler ¹⁷, Maria Paz Sebastian ³³, Eric S Schwenk ³⁴, Alasdair Taylor ¹¹, Athmaja Thottungal ³⁵, Luis Fernando Valdés-Vilches ³⁶, Thomas Volk ³⁷, Simeon West ¹, Morné Wolmarans ³⁸, Jonathan Womack ³⁹, Amit Pawa ^{12,40}

2022

consensus
recommendations
for core structures
to identify during
the performance of
intermediate and
advanced blocks



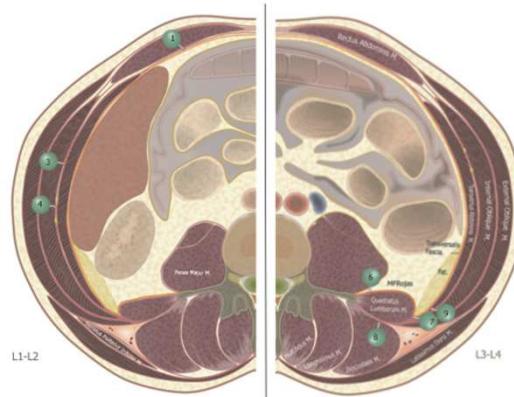
Block and scan	Strong recommendations	Weak recommendations
Pectoralis major		Pleura
Pectoralis minor		
Lateral cord of brachial plexus		
Medial cord of brachial plexus		
Posterior cord of brachial plexus		
Axillary vein		
Infraclavicular level brachial plexus block: block view	Axillary artery	Axillary vein
Pectoralis major		
Pectoralis minor		
Lateral cord of brachial plexus		
Medial cord of brachial plexus		
Posterior cord of brachial plexus		
Supraclavicular level brachial plexus block: orientation scanning	Subclavian artery	Upper trunk of brachial plexus
First rib		Middle trunk of brachial plexus
Trunks/divisions of the brachial plexus		Lower trunk of brachial plexus
Pleura		Transverse cervical artery
		Dorsal scapular artery
		Anterior scalene
		Middle scalene
Supraclavicular level brachial plexus block: block view	Subclavian artery	Upper trunk of brachial plexus

TECHNIQUES

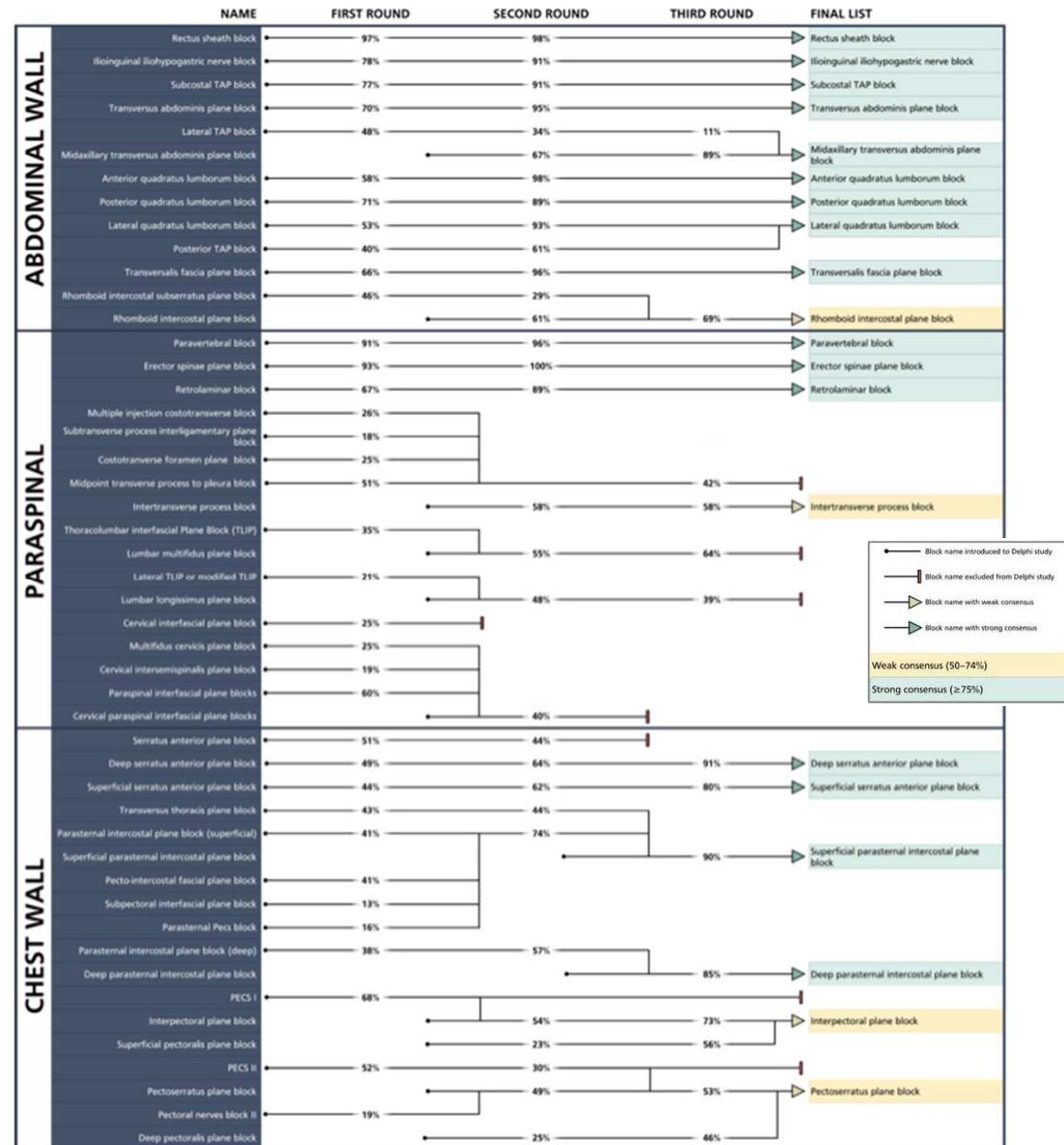
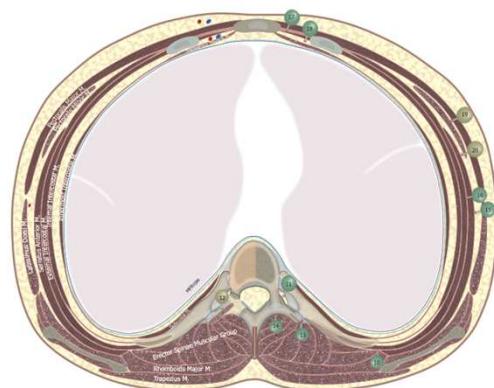
Regional Anesthesia & Pain Medicine

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

Kariem El-Boghdady ^{1,2}, Morné Wolmarans, ³ Angela D Stengel, ⁴ Eric Albrecht, ⁵ Ki Jinn Chin, ⁶ Hesham Elsharkawy, ^{7,8} Sandra Kopp, ⁹ Edward R Mariano, ^{10,11} Jeff L Xu, ^{12,13} Sanjib Adhikary, ¹⁴ Basak Altiparmak, ¹⁵ Michael J Barrington, ¹⁶ Sébastien Bloc, ^{17,18} Rafael Blanco, ¹⁹ Karen Boretsky, ²⁰ Jens Borglum, ²¹ Margaretha Breebaart, ²² David Burckett-St Laurent, ²³ Xavier Capdevila, ²⁴ Brendan Carvalho, ²⁵ Alwin Chuan, ²⁶ Steve Coppers, ²⁷ Ioana Costache, ²⁸ Mette Dam, ²⁹ Christian Egeler, ³⁰ Mario Fajardo, ³¹ Jeff Gadsden, ³² Philippe Emmanuel Gauthier, ³³ Stuart Alan Grant, ³⁴ Admir Hadzic, ^{35,36} Peter Hebbard, ³⁷ Nadia Hernandez, ³⁸ Rosemary Hogg, ³⁹ Margaret Holtz, ⁴⁰ Rebecca L Johnson, ⁴¹ Manoj Kumar Karmakar, ⁴² Paul Kessler, ⁴³ Kwesi Kwofie, ⁴⁴ Clara Lobo, ⁴⁵ Danielle Ludwin, ⁴⁶ Alan Macfarlane, ⁴⁷ John McDonnell, ⁴⁸ Graeme McLeod, ^{49,50} Peter Merjavy, ⁵¹ EML Moran, ⁵² Brian D O'Donnell, ⁵³ Teresa Paras, ⁵⁴ Amit Pawa, ^{55,56} Anahi Perlas, ⁵⁷ Maria Fernanda Rojas Gomez, ⁵⁸ Xavier Sala-Blanch, ^{59,60} Andrea Saporito, ⁶¹ Sanjay Kumar Sinha, ⁶² Ellen M Sofrin, ⁶³ Athmaja Thottungal, ⁶⁴ Ban C H Tsui, ⁶⁵ Serkan Tulgar, ⁶⁶ Lloyd Turbitt, ⁶⁷ Vishal Uppal, ⁶⁸ Geert J van Geffen, ⁶⁹ Thomas Volk, ^{70,71} Nabil M Elkassaby, ^{72,73} 2020



Harmonization and standardization of nomenclature may improve education, research



TECHNIQUE WALANT



Aiguille dédiée - Echographie



Garrot chimique : petit volume

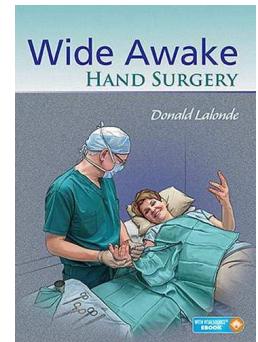
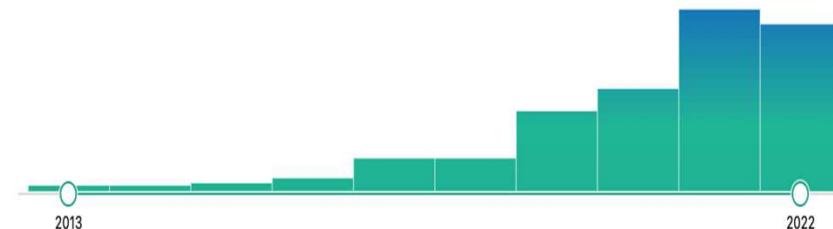


1

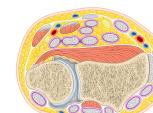
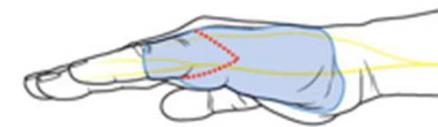
Lidocaine 10 mg.ml^{-1}
Adrénaline $1/200\,000$

2

Bicarbonate 8.4%



Connaissance



Tronculaire Analgésiques
Ropivacaine

SYNDROME DE LOGE

Risk of ACS:
Low
Moderate
High



Opinion:
RA may be considered in most cases
RA may be considered with caution
RA should not be considered

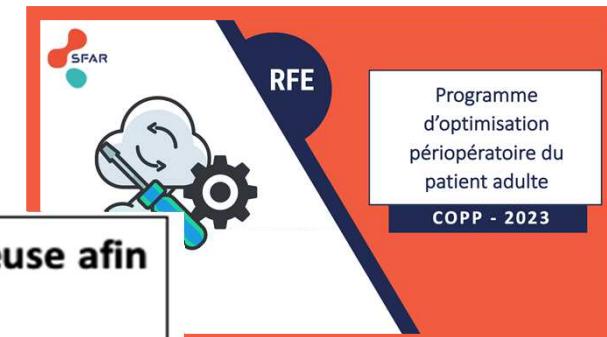
LESION NERVEUSE TRAUMATIQUE

CONCLUSION

This preliminary study demonstrated no evidence of greater nerve dysfunction after acute nerve injury repair for patients undergoing PNB as primary anaesthetic, compared with those who received GA.

Dwyer T. RAPM 2021
Yin J. RAPM 2023

ALR INTEGREE AUX PARCOURS



R3.4 - Il est recommandé d'administrer des anesthésiques locaux par voie péri-nerveuse afin de réduire la survenue de complications postopératoires en chirurgie des membres.

GRADE 1+ (Accord fort)

R3.5 - Il est recommandé de réaliser une analgésie locorégionale après une chirurgie thoracique ou abdominale majeure (y compris vasculaire) par voie ouverte pour réduire la survenue de complications postopératoires.

GRADE 1+ (Accord fort)

R3.6 - Il est probablement recommandé de réaliser une analgésie locorégionale pour une chirurgie thoracique par vidéotoracoscopie, une chirurgie pariétale thoraco-abdomino-pelvienne ou une chirurgie rachidienne, afin de réduire l'incidence des complications postopératoires.

GRADE 2+ (Accord fort)

R3.7 - Il est probablement recommandé d'utiliser la lidocaïne par voie intraveineuse en périopératoire de chirurgie abdomino-pelvienne laparoscopique afin de réduire l'incidence des complications postopératoires.

GRADE 2+ (Accord fort)



EM. Soffin et al. BJA. 2017
TJP Batchelor. EJCS. 2019
Noss C. JCVA. 2018
C Chiu. BMC Anesth. 2018
B Debono. Spine J. 2021

INDICATION

Regional & Pain Medicine

A multisociety organizational consensus process to define guiding principles for acute perioperative pain management

Edward R Mariano ,^{1,2} David M Dickerson,^{3,4} Joseph W Szokol,⁵ Michael Harned,⁶ Jeffrey T Mueller,⁷ Beverly K Philip,^{8,9} Jaime L Baratta,¹⁰ Padma Gulur,¹¹ Jennifer Robles,^{12,13} Kristopher M Schroeder,¹⁴ Karla E K Wyatt,^{15,16} Jason M Schwalb,¹⁷ Eric S Schwenk ,¹⁰ Richa Wardhan,¹⁸ Todd S Kim,¹⁹ Kent K Higdon,²⁰ Deepak G Krishnan,^{21,22} Ashley M Shilling,²³ Gary Schwartz,^{24,25} Lisa Wiechmann,²⁶ Lisa V Doan ,²⁷ Nabil M Elkassabany,²⁸ Stephen C Yang,²⁹ Iyabo O Muse ,³⁰ Jean D Eloy,³¹ Vikas Mehta,³² Shalini Shah,³³ Rebecca L Johnson ,³⁴ Michael J Englesbe,³⁵ Amanda Kallen,³⁶ S Bobby Mukkamala,³⁷ Ashley Walton,³⁸ Asokumar Buvanendran³⁹

2021



IDENTIFIER



Conduct a preoperative evaluation including assessment of medical and psychological conditions, concomitant medications, history of chronic pain, substance abuse disorder, and previous postoperative treatment regimens and responses, to guide the perioperative pain management plan



Use a validated pain assessment tool to track responses to postoperative pain treatments and adjust treatment plans accordingly



Offer multimodal analgesia, or the use of a variety of analgesic medications and techniques combined with nonpharmacological interventions, for the treatment of postoperative pain in adults



Provide patient and family-centered, individually tailored education to the patient (and/or responsible caregiver), including information on treatment options for managing postoperative pain, and document the plan and goals for postoperative pain management.



Provide education to all patients (adult) and primary caregivers on the pain treatment plan, including proper storage and disposal of opioids and tapering of analgesics after hospital discharge



Adjust the pain management plan based on adequacy of pain relief and presence of adverse events



Have access to consultation with a pain specialist for patients who have inadequately controlled postoperative pain or are at high risk of inadequately controlled postoperative pain at their facilities (e.g., long-term opioid therapy, history of substance use disorder)

ANTICIPER

EDUQUER

EVALUER

ORIENTER

LIVRE BLANC DE LA DOULEUR

Évaluation préopératoire des patients à risque de douleurs postopératoire

Fabrice Ferré, Anesthésiste-Réanimateur.

IDENTIFIER

ANTICIPER



Livre Blanc de la Douleur

La douleur postopératoire et sa chronicisation

Valeria Martinez, Présidente de la SFETD

Axel Maurice Szamburski, Président du Comité Douleur et Anesthésie Locorégionale de la SFAR.



Participation de la SFCTO, de la SOFCOT & de l'AFC.
Synthèse de la littérature & fiches pédagogiques
Une démarche innovante et interdisciplinaire
Améliorer la pertinence et la qualité des soins



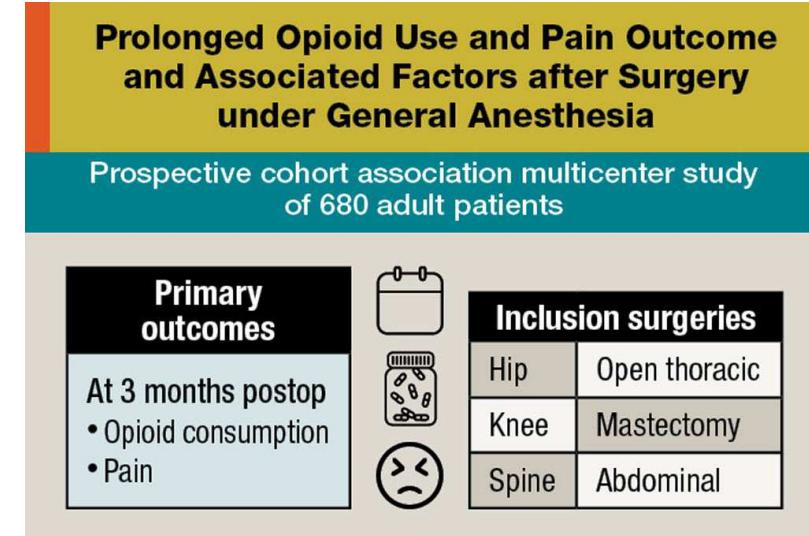
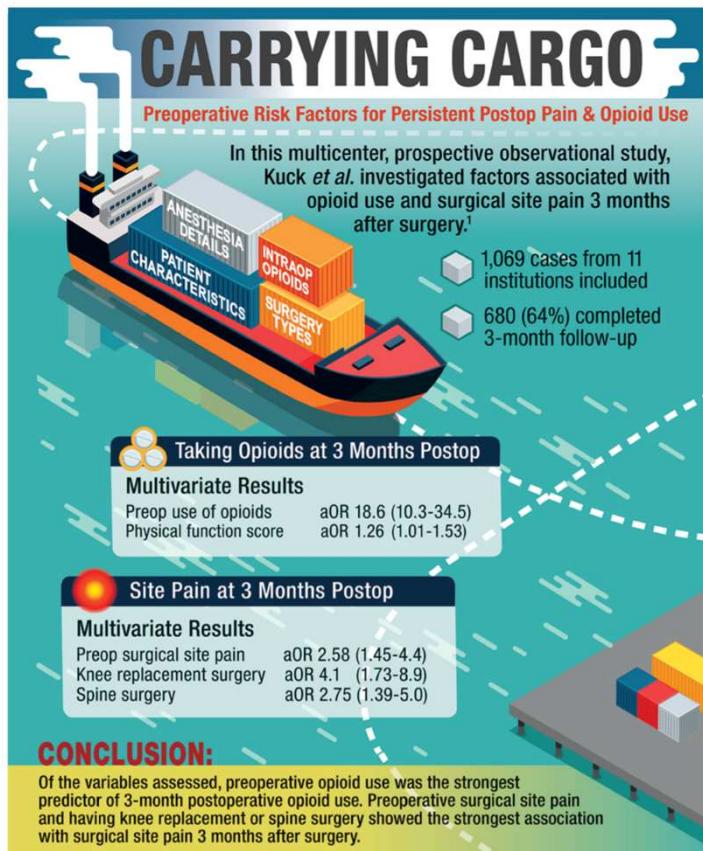
RECHERCHER & IDENTIFIER

Les principaux facteurs de risques

- ▶ Douleur préopératoire
Incluant les douleurs hors site opératoire
- ▶ Consommation d'opiacés au long court
- ▶ Chirurgies pro-nociceptives
Thoracotomie, chirurgie mammaire, sternotomie, prélèvement de crête, chirurgie du rachis, arthroplasties, amputation, reprises chirurgicales, durée de chirurgie > 3 h, etc.
- ▶ Anxiété, dépression, catastrophisme, toxicomanie

Preoperative opioid use was the strongest predictor of opioid use 3 months postoperatively

Kuck K, et al. ANESTHESIOLOGY, 2023.



- Retrospective review of intraop data
- 3-month postop telephone survey



Evaluated

- Demographics
- Case characteristics
- Pain and psychosocial scores



Preop opioid use was associated with opioid use at 3 months postop odds ratio, 18.6 (credible interval, 10.3 - 34.5)

Preoperative opioid use was the strongest predictor of opioid use 3 months postoperatively

Kuck K, *et al.* ANESTHESIOLOGY, 2023.



Comment prescrire des opioïdes de palier III au domicile (OP3) ?

ALR PER & POSTOPERATOIRE

Fiche 5 | Prise en charge
anesthésique préventive peropératoire.

Isabelle Leblanc, Anesthésiste-Réanimatrice.



Mauvaise hyperalgésie
postopératoire

= Risque de chronicisation
de la douleur

Anti Hyperalgésiques
(kétamine, lidocaïne)

Épargne morphinique
(ALR, moins d'opiacés)

Analgésie multimodale
(antalgiques, ALR)

= Réduction de l'hyperalgésie
postopératoire



La kétamine et la lidocaïne

LES ANTI HYPERALGÉSIFIQUES

► La kétamine
Antagoniste des récepteurs NMDA, aux propriétés analgésiques, anti hyperalgésiques, anti-inflammatoires.

Dose recommandée : bolus de 0,25 à 0,5 mg/kg à l'induction, suivi d'une administration continue de 0,125 à 0,25 mg/kg/h, qui sera stoppée 30 min avant la fin de la chirurgie.^[1]

► La lidocaïne intraveineuse

Des propriétés analgésiques, anti hyperalgésiques, anti-inflammatoire, indications sélectionnées.

Dose recommandée : 1 à 2 mg/kg en bolus intraveineux à l'induction puis en perfusion à la dose de 1 à 2 mg/kg/h.^[1]



L'anesthésie d'épargne morphinique

ALR, INFILTRATION

► Tolérance et hyperalgésie :
induites par de fortes doses d'opiacés notamment avec le remifentanil à des doses supérieures à 0,2 µg/kg/min.

► ALR, infiltration d'anesthésiques locaux.

► Efficacité non démontrée dans la prévention de la DCPC, de l'anesthésie sans opiacé ou d'épargne en opiacés en associant les α2-agonistes comme la dexmédétomidine.^[4]



Propofol vs Halogénés

L'AG

► L'état actuel de la littérature ne permet pas de conclure sur l'effet protecteur de ces techniques.^[2]

► Le protoxyde d'azote ne montre pas d'effet sur le traitement de la DCPC.^[5]



L'analgésie multimodale optimale

ANTALGIIQUES & ALR

► Analgésie médicamenteuse balancée optimale : l'analgésie débute avant l'intervention ALR pour une efficacité optimale en postopératoire.

► Risques de développement de DCPC à 6 et 12 mois : une douleur sévère qui dure pendant les 24 premières heures postopératoires augmente le risque de DCPC.^[6]

EVALUATION

SPECIAL ARTICLE

Practice Advisory for Preoperative and Intraoperative Pain Management of Thoracic Surgical Patients: Part 1

Benu Makkad, MBBS/MD,* Timothy Lee Heinke, MD,† Raiyah Sheriffdeen, MD,‡ Diana Khatib, MD,§
Jessica Louise Brodt, MD,|| Marie-Louise Meng, MD,¶ Michael Conrad Grant, MD,#
Bessie Kachulis, MD,** Wanda Maria Popescu MD,†† Christopher L. Wu, MD,‡‡ and Bruce Allen Bollen, MD§§

SPECIAL ARTICLE

Practice Advisory for Preoperative and Intraoperative Pain Management of Cardiac Surgical Patients: Part 2

Benu Makkad, MBBS/MD,* Timothy Lee Heinke, MD,† Raiyah Sheriffdeen, MD,‡ Diana Khatib, MD,§
Jessica Louise Brodt, MD,|| Marie-Louise Meng, MD,¶ Michael Conrad Grant, MD,#
Bessie Kachulis, MD,** Wanda Maria Popescu MD,†† Christopher L. Wu, MD,‡‡ and
Bruce Allen Bollen, MD§§¶¶

A

Risk Factors for Persistent Pain after Cardiac Surgery

Patient Related Factors

- Younger age*
- Female gender
- Higher body mass index*
- Higher NYHA class
- Pre-operative and postoperative angina
- Use of anti-depressant medications

Social Factors

- On disability benefits
- medical consultation for retirement

Surgery Related Factors

- History of previous surgery (excluding sternotomy)
- Coronary artery bypass grafting surgery
- IMA for coronary revascularization
- skeletonized IMA graft (protective)
- Distal to proximal dissection of the great saphenous vein*
- Closure of leg wound in two layers*

B

Risk Factors for Persistent Opioid Use after Cardiac Surgery

Patient Related Factors

- Young age
- Female gender
- Black race
- Higher co-morbidities
- CHF
- Chronic lung disease
- Anxiety
- Diabetes
- Chronic pain disorders (osteoarthritis, rheumatoid arthritis and back pain)
- Alcoholism
- Preoperative NSAIDs, nitrates benzodiazepines and muscle relaxants

Social Factors

- Disability status
- Dual eligibility for Medicare and Medicaid
- Living in the southern United States

Surgery Related Factors

- Valve surgery (protective)
- Increased length of hospital stay
- Discharge to a facility instead of home
- Preoperative prescription fills
- Prescription size > 450 OME
- Increased amount of opioids prescribed in the perioperative period

INDICATIONS

Table 3. Expert Consensus Recommendations for Intraoperative Management—Regional Techniques

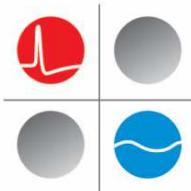
Recommendations	C	L	G
Neuraxial analgesia			
Although perioperative use of thoracic epidural analgesia in cardiac surgery offers superior acute pain control and the associated risks are rare, its routine use is not recommended due to the potential devastating complications in patients with full anticoagulation.	A	2	B
Intrathecal analgesia may be considered in patients undergoing cardiac surgery to decrease perioperative opioid consumption.	A	2	B
Perioperative thoracic epidural analgesia use is not associated with a reduction in the incidence of persistent postoperative pain after cardiac surgery.	B	2	E
Paravertebral block			
Perioperative paravertebral techniques may be considered for acute pain management in patients undergoing cardiac surgery	A	2	B
Fascial plane block techniques			
Perioperative fascial plane blocks alone or in combination can be considered as part of a multimodal pain regimen for acute pain management after cardiac surgery.	A	2	B
Recommendations for local infiltration techniques			
Incisional analgesia			
Perioperative use of continuous wound infiltration catheters for postoperative pain control in patients undergoing cardiac surgery is not recommended.	C		
Intercostal nerve block			
Perioperative intercostal nerve block can be utilized for acute pain management in patients undergoing cardiac surgery via sternotomy.	A	2	B
Perioperative intercostal nerve block with local anesthetics or liposomal bupivacaine may be considered to provide analgesia after minimally invasive cardiac surgery.	B	2	E
Perioperative intercostal cryoanalgesia may be beneficial in patients undergoing thoracoabdominal aneurysm repair.	B	2	B

INDICATIONS ALR DPO



State of the Art Safety Standards in RA
THE EUROPEAN SOCIETY OF REGIONAL
ANAESTHESIA & PAIN THERAPY

prospect

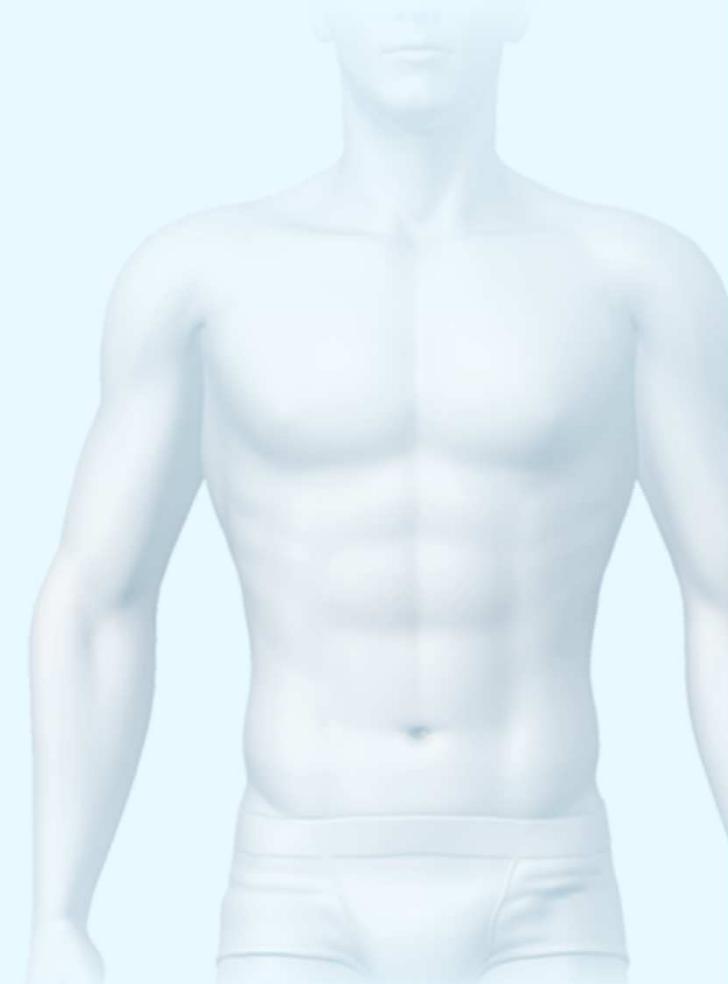


procedure specific postoperative pain management

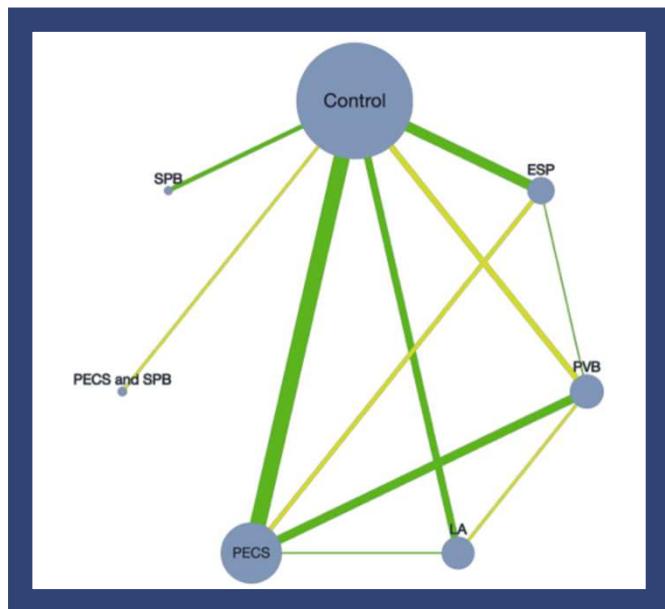
Better Postoperative Pain Management

Recommendations on this website are in the process of being updated. Please check back regularly for both updated content and new procedures

- New: Haemorrhoidectomy 2022
- Abdominal Hysterectomy 2006
- Caesarean Section 2020
- Complex Spine Surgery 2020
- Hallux Valgus Repair Surgery 2019
- Inguinal Hernia Repair 2019
- Laminectomy 2020
- Laparoscopic Cholecystectomy 2017
- Laparoscopic Hysterectomy 2018
- Laparoscopic Sleeve Gastrectomy 2018
- Oncological Breast Surgery 2019
- Open Colorectal Surgery 2016
- Open Liver Resection 2019
- Prostatectomy 2020
- Rotator Cuff Repair Surgery 2019
- Thoracotomy 2015
- Tonsillectomy 2019
- Total Hip Arthroplasty 2019
- Total Knee Arthroplasty 2020
- Video-Assisted Thoracoscopic Surgery 2021

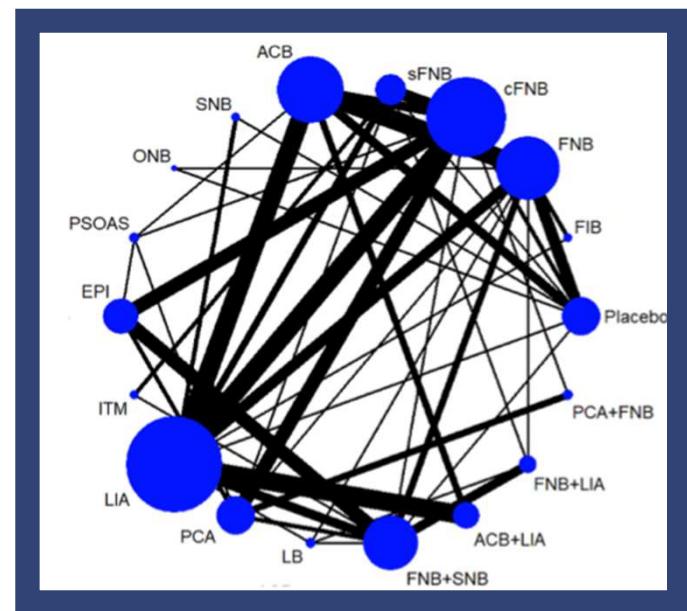


ALR FIRST



In breast surgery, **regional anesthesia modalities were preferable** from an analgesic perspective to **control or LA infiltration**, with a clinically significant decrease in pain score and cumulative opioid consumption, and **limited differences were present between regional anesthetic techniques themselves**

Peripheral nerve block, especially FNB and ACB, is a **better option than other analgesic methods**, and its combination with other methods can be beneficial. Peripheral nerve block is a safe and effective postoperative analgesia method. However, our findings can only provide objective evidence. **Clinicians should choose the treatment course based on the individual patient's condition and clinical situation.**



L Qin et al. J Clin Anesth. 2021
HY Wong et al. Anesthesiology. 2021

ALR – ORGANISATION



90 patients - PTG



Quadruple bloc / Adjuvant
Quadruple bloc vs Adducteur IPACK



Consommation opioïdes
Durée analgésie

Parcours optimisé

Table 5 Mobility

	Placebo group	DexM group
Ability to stand up		
Day 0 (operating day)	29 (66)	27 (69)
Day 1	45 (100)	45 (100)
Day 2	44 (100)	44 (100)
Ability to walk		
Day 0 (operating day)	1 (2)	0 (0)
Day 1	42 (93)	40 (89)
Day 2	44 (100)	44 (100)
Walking distance >50 m		
Day 1	25 (60)	26 (65)
Day 2	39 (89)	39 (89)
Quadriceps motricity (paralysis/paresis/normal)		
Day 0 (operating day)	43 (98)/0 (0)/1 (2)	36 (92)/3 (8)/0 (0)
Day 1	4 (9)/7 (15)/34 (76)	5 (11)/6 (13)/34 (76)
Day 2	0 (0)/0 (0)/44 (100)	0 (0)/2 (5)/42 (95)
Foot elevator (paralysis/paresis/normal)		
Day 0 (operating day)	37 (84)/5 (11)/2 (5)	33 (85)/1 (2)/5 (13)
Day 1	4 (9)/3 (7)/38 (84)	6 (13)/0 (0)/39 (87)
Day 2	0 (0)/0 (0)/44 (100)	1 (2)/1 (2)/42 (96)

ALR – ORGANISATION



90 patients - PTG



Quadruple bloc / Adjuvant
Quadruple bloc vs Adducteur IPACK



Consommation opioïdes
Durée analgésie

	Distal group	Proximal group	P-value ^{†,‡}
Ability to stand up			
Day 0 (operating day)	33/43 (77)	29/45 (64)	0.20
Day 1	44/45 (98)	43/45 (96)	1.00
Day 2	43/43 (100)	43/43 (100)	—
Ability to walk			
Day 0 (operating day)	25/43 (58)	1/45 (2)	<0.001
Day 1	43/45 (96)	41/45 (91)	0.66
Day 2	43/43 (100)	42/43 (98)	1.00
Walking >50 m			
Day 0 (operating day)	14/43 (33)	1/45 (2)	<0.001
Day 1	37/45 (82)	33/45 (73)	0.31
Day 2	39/43 (91)	40/43 (93)	1.00
Quadriceps motricity (paralysis/paresis/normal)			
Day 0 (operating day)	6/14/23 (14/33/53)	41/3/1 (91/7/2)	<0.001
Day 1	1/4/40 (2/9/89)	2/4/39 (4/9/87)	0.75
Day 2	0/0/43 (0/0/100)	0/1/42 (0/2/98)	1.00
Foot elevator (paralysis/paresis/normal)			
Day 0 (operating day)	3/8/32 (7/19/74)	35/8/2 (78/18/4)	<0.001
Day 1	0/0/45 (0/0/100)	2/2/41 (4/4/92)	0.12
Day 2	0/0/43 (0/0/100)	0/0/43 (0/0/100)	—

	All patients (n=90)	Distal group (n=45)	Proximal group (n=45)	P-value ^{*,†}
Cumulative OME consumption				
Cumulative OME H0–H48, mg	30 [20–66]	33 [18–78]	30 [22–51]	0.29
Cumulative OME H0–H24, mg	15 [0–36]	30 [13–59]	15 [0–18]	P<0.001
Cumulative OME H24–H48, mg	15 [0–30]	15 [0–30]	15 [15–38]	0.06
VRS pain scores				
VRS at H0	0 [0–6]	5 [0–8]	0 [0–0]	P<0.001
VRS at H6	0 [0–2]	1 [0–3]	0 [0–0]	P<0.001
VRS at H12	0 [0–0]	0 [0–1]	0 [0–0]	P<0.01
VRS at H18	0 [0–2]	0 [0–2]	0 [0–2]	0.90
VRS at H24	2 [0–3]	1 [0–2]	2 [0–4]	0.06
VRS at H30	1 [0–4]	1 [0–3]	3 [0–5]	0.07
VRS at H36	0 [0–1]	0 [0–0]	0 [0–2]	P<0.01
VRS at H42	0 [0–2]	0 [0–2]	0 [0–2]	0.90
VRS at H48	0 [0–2]	0 [0–1]	0 [0–2]	0.19
Postoperative additional block, n (%)	6 (7)	4 (9)	2 (4)	0.67

C Chassery al. RAPM. 2021
P Marty al. BJA. 2022

ALR – PRATIQUE

Does the addition of iPACk to adductor canal block in the presence or absence of periarticular local anesthetic infiltration improve analgesic and functional outcomes following total knee arthroplasty? A systematic review and meta-analysis
Nasir Hussain ,¹ Richard Brull ,² Brendan Sheehy,¹ Michael Dasu,¹ Tristan Weaver,¹ Faraj W Abdallah ,³ 2021

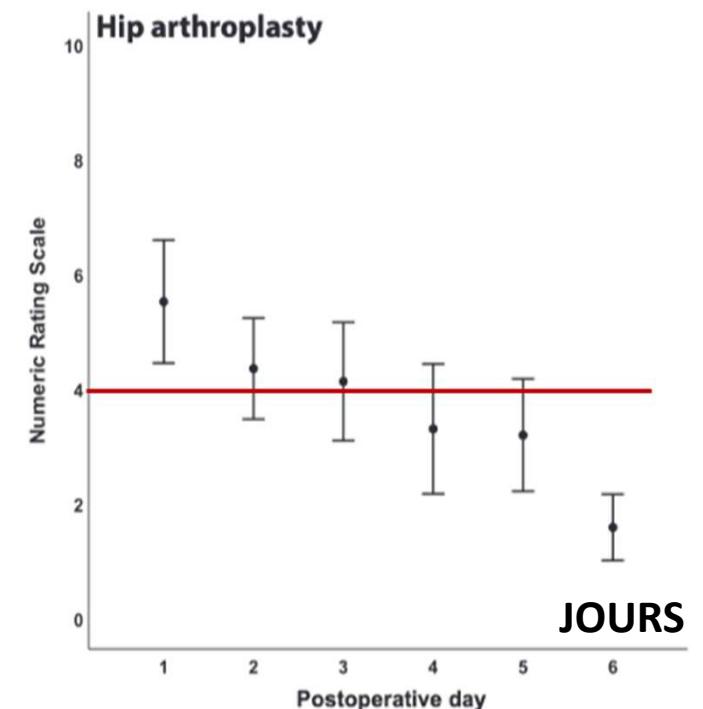
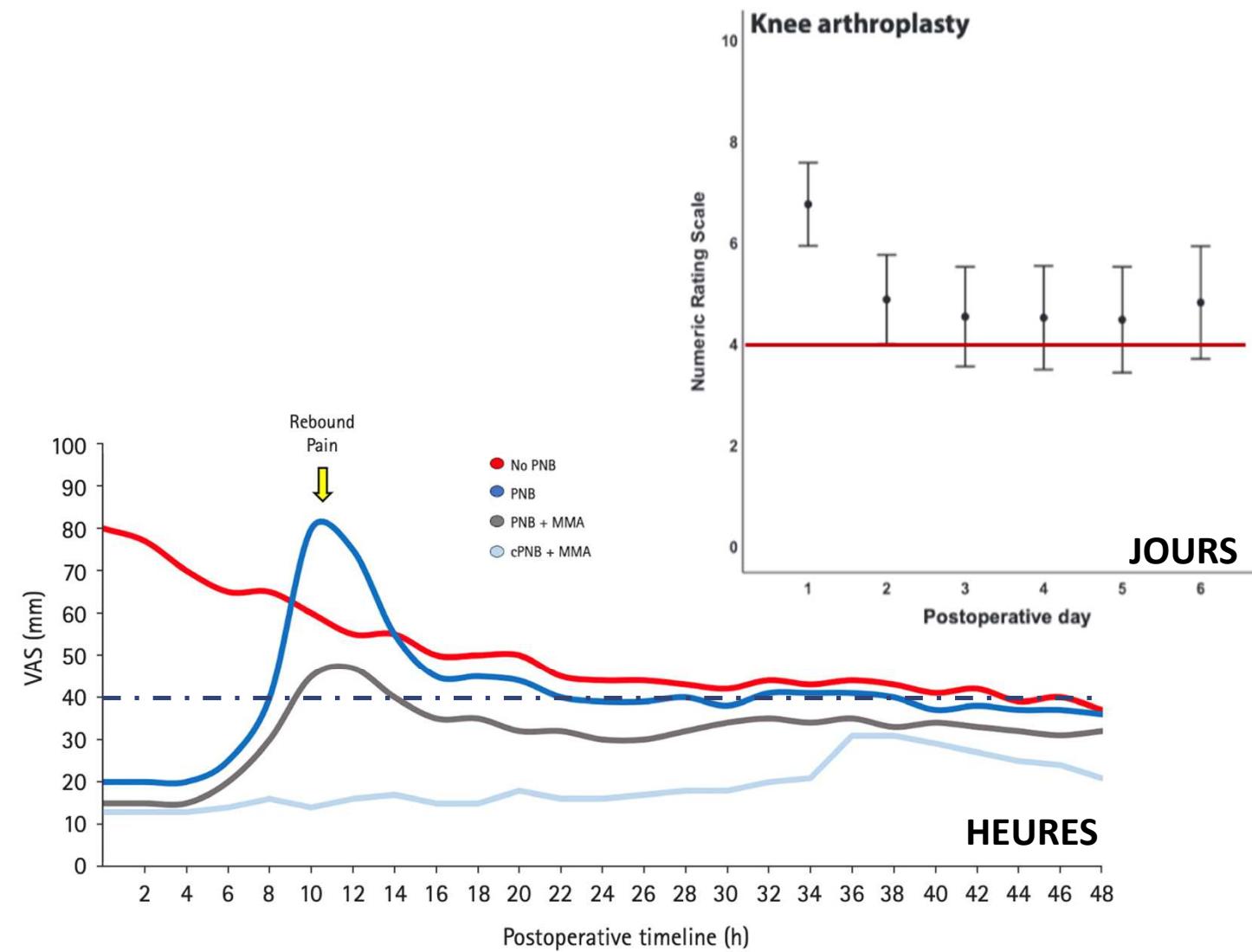
The addition iPACk to ACB in the setting of periarticular LIA does not improve post-TKA analgesic outcomes.

In contrast, moderate-quality evidence suggests that adding iPACk to ACB in the absence of LIA reduces pain severity up to 24 hours and enhances functional recovery, but without a corresponding reduction in opioid consumption.

Table 3 Secondary endpoint results

Outcome	Studies included	ACB (SD) or n/N	ACB + iPACk (SD) or n/N	Mean difference or OR (95% CI)	P value for statistical significance	P value for heterogeneity	χ^2 test for heterogeneity	Quality of evidence (GRADE)
<i>iPACk +ACB vs ACB in the presence of LIA*</i>								
Rest pain at 0 hours (PACU) (cm)	4	1.53 (1.83)	1.28 (1.68)	-0.02 (-0.12 to 0.07)	0.62	0.42	0%	⊕⊕⊕⊖
Rest pain at 12 hours (cm)	4	2.56 (2.43)	2.09 (2.11)	-0.41 (-0.90 to 0.08)	0.10	0.10	53%	⊕⊕⊕⊖
Rest pain at 24 hours (cm)	4	2.63 (2.00)	2.29 (2.21)	-0.19 (-0.52 to 0.13)	0.24	0.57	0%	⊕⊕⊕⊕
Morphine consumption at 24 hours (mg)	4	26.19 (24.06)	18.18 (23.05)	-4.17 (-9.85 to 1.51)	0.15	0.04	65%	⊕⊕⊖⊖
Postoperative function	3	N/A	N/A	-0.90 (-2.65 to 0.84)†	0.31	<0.00001	92%	⊕⊕⊖⊖
<i>iPACk + ACB vs ACB in the absence of LIA†</i>								
Rest pain at 0 hours (PACU) (cm)	5	2.82 (2.55)	1.89 (1.81)	-0.87 (-1.76 to 0.02)	0.06	<0.00001	94%	⊕⊕⊖⊖
Rest pain at 12 hours (cm)	6	3.46 (2.45)	2.53 (2.17)	-0.98 (-1.79 to -0.17)	0.02	<0.00001	97%	⊕⊕⊕⊖
Rest pain at 24 hours (cm)	10	3.45 (2.38)	2.74 (2.21)	-0.69 (-1.18 to -0.20)	0.006	<0.00001	94%	⊕⊕⊕⊖
Morphine consumption at 24 hours (mg)	3	52.65 (45.53)	50.08 (41.45)	-1.21 (-9.71 to 7.29)	0.78	0.82	0%	⊕⊕⊕⊖
Postoperative function	9	N/A	N/A	1.28 (0.45 to 2.11)†	0.003	<0.0001	87%	⊕⊕⊕⊖
Opioid-related side effects	6	32/198	17/200	0.43 (0.21 to 0.91)	0.03	0.36	7%	⊕⊕⊕⊕
Block-related complications	6	0/266	0/268	N/A	N/A	N/A	N/A	⊕⊕⊕⊕

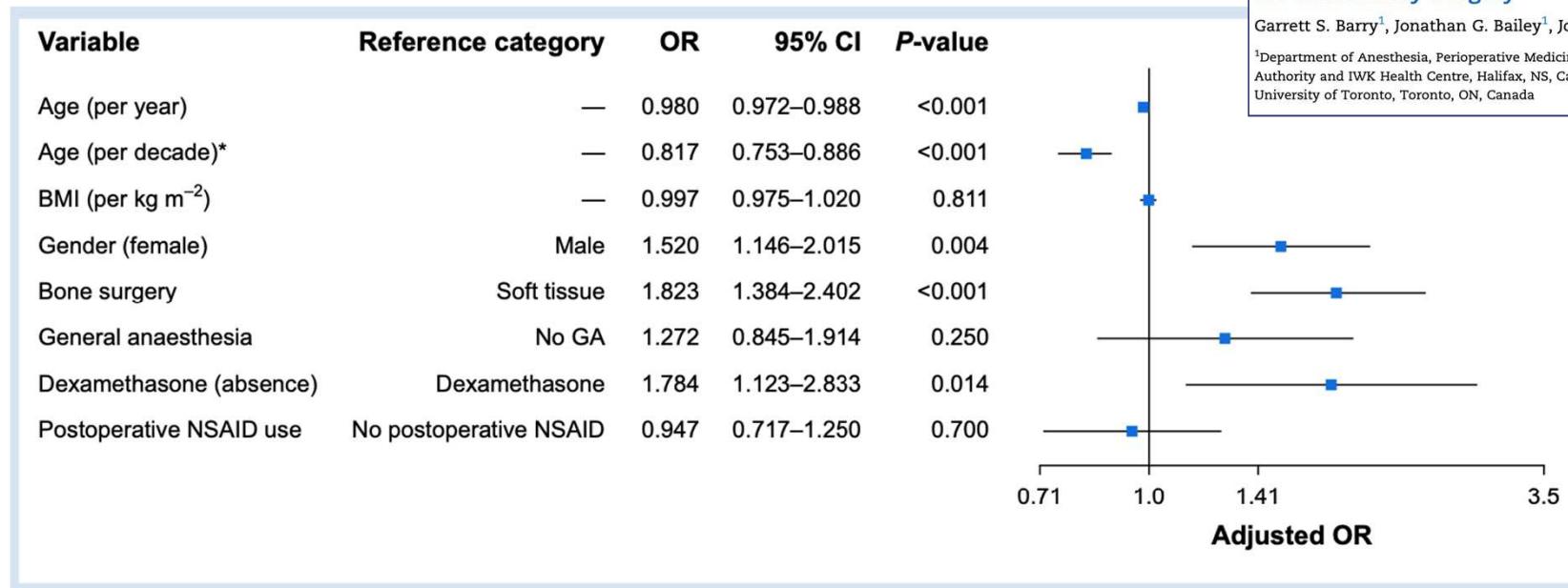
ADAPTE A TRAJECTOIRE DOULOUREUSE



F Munoz-Leyva et al. KJA 2020

ER Mariano et al. Anesthesiology 2020

DEXAMETHASONE



High-dose steroids in high pain responders undergoing total knee arthroplasty: a randomised double-blind trial

2022

BJA
British Journal of Anaesthesia



Niklas I. Nielsen^{1,*†}, Henrik Kehlet^{2,‡}, Kirill Gromov³, Anders Troelsen³, Henrik Husted³, Claus Varnum⁴, Per Kjærsgaard-Andersen⁴, Lasse E. Rasmussen⁴, Lina Pleckaitiene⁵ and Nicolai B. Foss^{1,‡,¶}

Sensory block duration after spinal anaesthesia supplemented with intravenous dexamethasone: a randomised controlled double-blinded trial

2023

Alexis Bikfalvi • Gregory Hofmann • Ahmed Bashawayah • Jean-Benoit Rossel • Erin Gonvers • Eric Albrecht

REVIEW ARTICLES: META-ANALYSIS

ANESTHESIOLOGY
Trusted Evidence. Discovery to Practice

The Facilitatory Effects of Adjuvant Pharmaceutics to Prolong the Duration of Local Anesthetic for Peripheral Nerve Block: A Systematic Review and Network Meta-analysis

Xuan, Chengluan MD, PhD¹; Yan, Wen MD, PhD¹; Wang, Dan MD, PhD²; Li, Cong MD²; Ma, Haichun MD, PhD³; Mueller, Ariel MA⁴; Wang, Jingping MD, PhD²

DEXAMETHASONE



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Perineural (but not systemic) dexamethasone as an adjunct to bupivacaine resulted in a greater duration of an ulnar nerve block when compared with placebo

Maagaard M, et al. ANESTHESIOLOGY, 2023.

Perineural and Systemic Dexamethasone and Ulnar Nerve Block Duration

A Randomized, Blinded, Placebo-controlled Trial in Healthy Volunteers

Hypothesis: Perineural and systemic dexamethasone will prolong ulnar block duration equally (vs. placebo)



Primary outcome: Duration of sensory block

16 healthy volunteers received bilateral ulnar blocks with bupivacaine on 2 trial days

Block adjuncts, day 1:

- Perineural condition: 1 ml saline + 1 ml dexamethasone 4 mg/ml
- Systemic condition: 2 ml saline



Block adjuncts, day 2:

- Placebo condition: 2 ml saline
- Lidocaine condition: 2 ml lidocaine

Dexamethasone route	Nerve block duration vs. placebo
Perineural	↑ 66 min
Systemic	No significant change



Lidocaine added to bupivacaine decreased block duration when compared to placebo (↓189 min)

AUTRES ADJUVANTS

Review Article

Anaesthesia

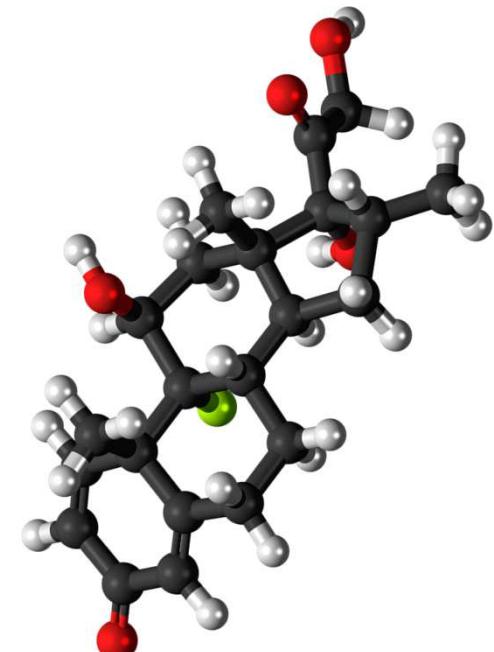
Peri-operative medicine, critical care and pain

Local anaesthetic adjuncts for peripheral regional anaesthesia: a narrative review

N. Desai,^{1,2} K. R. Kirkham³ and E. Albrecht⁴

2021

	Duration of analgesia; min	Onset of sensory block; min	Duration of sensory block; min	Onset of motor block; min	Duration of motor block; min	Block failure	Pain scores at less than or equal to 24 h	Cumulative postoperative opioid consumption at 24 h; morphine equivalents in mg	Side-effects
Historical local anaesthetic adjuncts									
Adrenaline [15]	+66	ND	Increased/ ND	ND	Increased/ ND	ND	Not studied	Not studied	Hypertension Tachycardia
Buprenorphine [20]	+518	ND	Increased/ ND	-0.3	+13	Not studied	Decreased	Not studied	PONV(RR 5) Pruritus(RR 6)
Clonidine[23]	+123	-2	+74	ND	+141	ND	Decreased/ ND	Not studied	Bradycardia (OR 3.1) Arterial hypotension (OR 3.6) Orthostatic hypotension (OR 2.3) Sedation (OR 5.1)
Magnesium [27]	+125	ND	+107	-1	+90	ND	Decreased	Decreased	ND
Novel local anaesthetic adjuncts									
Dexmedetomidine [34, 52]	+264	-9	+228 to 346	-8	+192	ND	Decreased	-10	Bradycardia (OR 7.4) Sedation (OR 11.8)
Dexamethasone [41]	+233 to 488	-1	+233 to 488	-1	+286	ND	Decreased	-19	Increase in mean blood glucose concentration by 0.2 mmol l ⁻¹



C Chassery al. RAPM. 2021
E Albrecht et al. Anaesthesia 2022

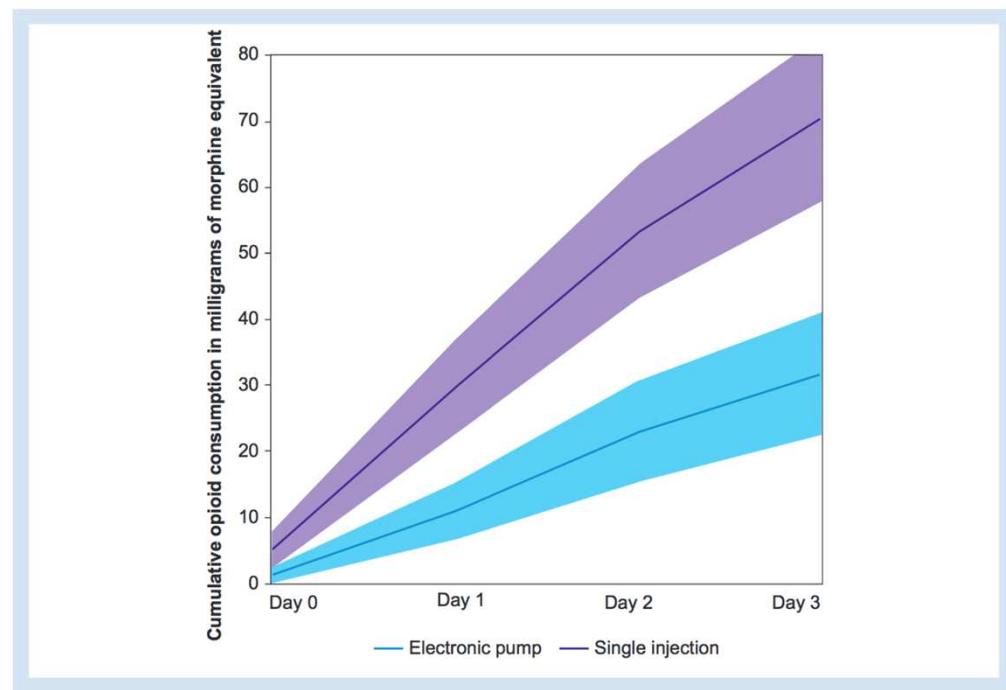
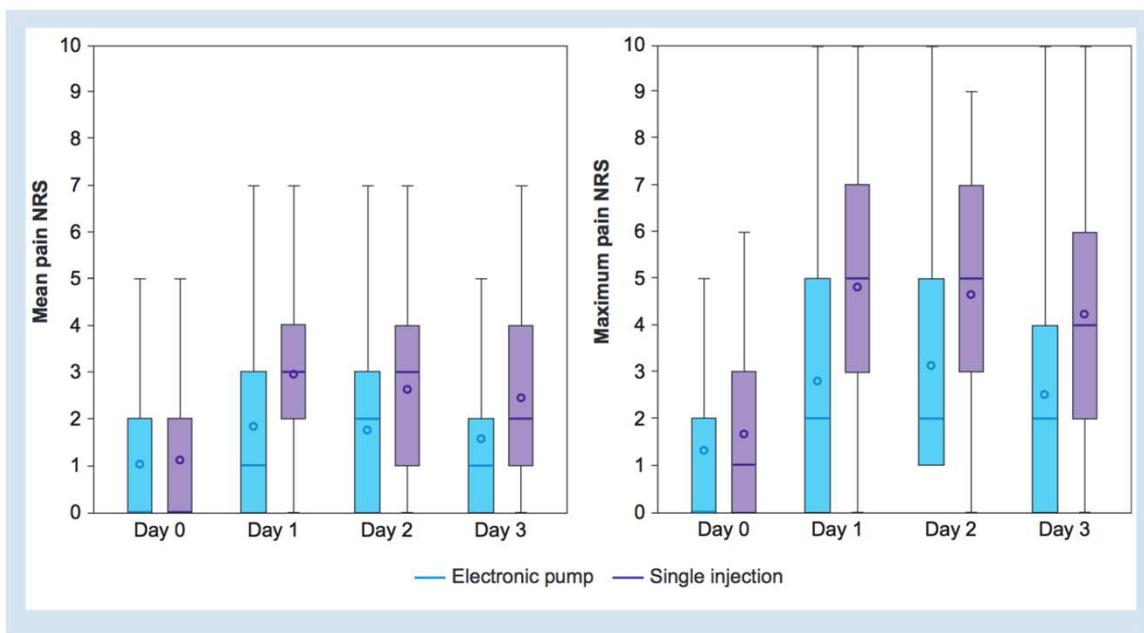
ANALGESIE CONTINUE



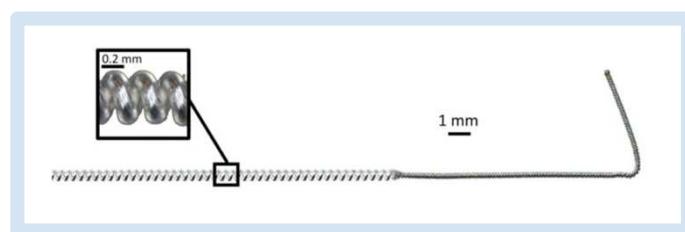
294 patients – Catheter vs Single injection
Home delivery



Shoulder	93 vs 96
Knee	24 vs 22
Ankle & Foot	13 vs 14
Wrist & Hand	2 vs 2



A Maurice-Szamburski et al. BJA. 2022



Ilfeld BM et al. Anesthesiology. 2021

EVALUER

Regional & Pain
Anesthesia & Medicine

A multisociety organizational consensus process to define guiding principles for acute perioperative pain management

Edward R Mariano ,^{1,2} David M Dickerson,^{3,4} Joseph W Szokol,⁵ Michael Harned,⁶ Jeffrey T Mueller,⁷ Beverly K Philip,^{8,9} Jaime L Baratta,¹⁰ Padma Gulur,¹¹ Jennifer Robles,^{12,13} Kristopher M Schroeder,¹⁴ Karla E K Wyatt,^{15,16} Jason M Schwalb,¹⁷ Eric S Schwenk ,¹⁸ Richa Wardhan,¹⁸ Todd S Kim,¹⁹ Kent K Higdon,²⁰ Deepak G Krishnan,^{21,22} Ashley M Shilling,²³ Gary Schwartz,^{24,25} Lisa Wiechmann,²⁶ Lisa V Doan ,²⁷ Nabil M Elkassabany,²⁸ Stephen C Yang,²⁹ Iyabo O Muse ,³⁰ Jean D Eloy,³¹ Vikas Mehta,³² Shalini Shah,³³ Rebecca L Johnson ,³⁴ Michael J Englesbe,³⁵ Amanda Kallen,³⁶ S Bobby Mukkamala,³⁷ Ashley Walton,³⁸ Asokumar Buvanendran³⁹

2021

IDENTIFIER



Conduct a preoperative evaluation including assessment of medical and psychological conditions, concomitant medications, history of chronic pain, substance abuse disorder, and previous postoperative treatment regimens and responses, to guide the perioperative pain management plan



Use a validated pain assessment tool to track responses to postoperative pain treatments and adjust treatment plans accordingly



Offer multimodal analgesia, or the use of a variety of analgesic medications and techniques combined with nonpharmacological interventions, for the treatment of postoperative pain in adults



Provide patient and family-centered, individually tailored education to the patient (and/or responsible caregiver), including information on treatment options for managing postoperative pain, and document the plan and goals for postoperative pain management.



Provide education to all patients (adult) and primary caregivers on the pain treatment plan, including proper storage and disposal of opioids and tapering of analgesics after hospital discharge



Adjust the pain management plan based on adequacy of pain relief and presence of adverse events

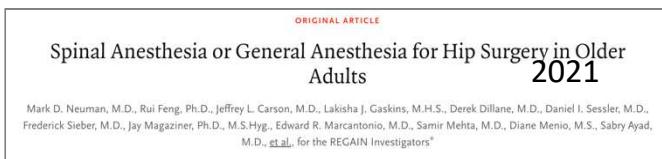


Have access to consultation with a pain specialist for patients who have inadequately controlled postoperative pain or are at high risk of inadequately controlled postoperative pain at their facilities (e.g., long-term opioid therapy, history of substance use disorder)

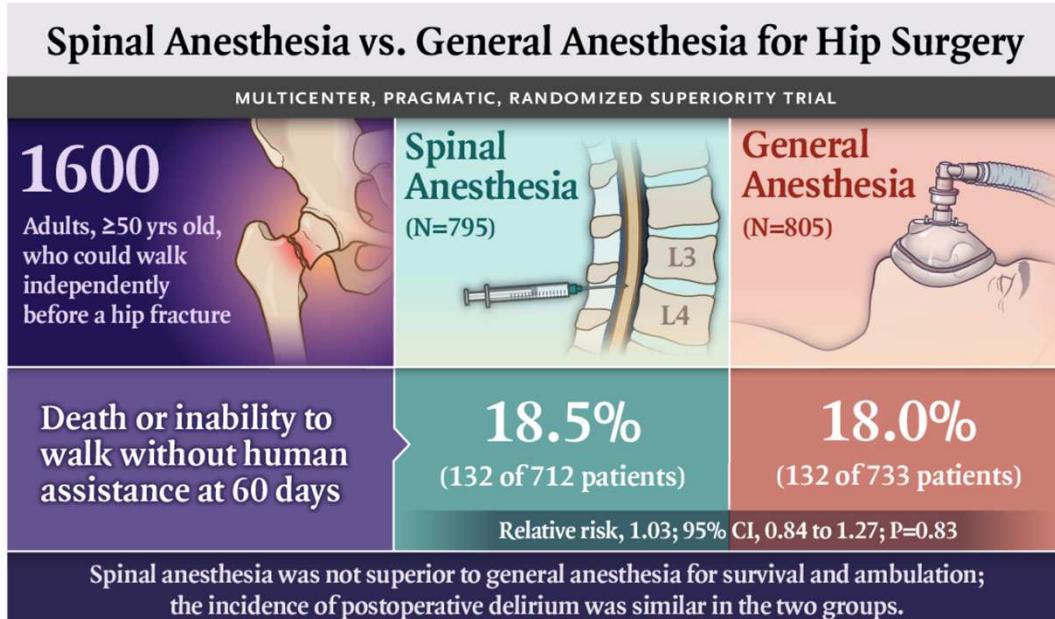
EVALUER

ORIENTER

TECHNIQUE ANESTHESIE

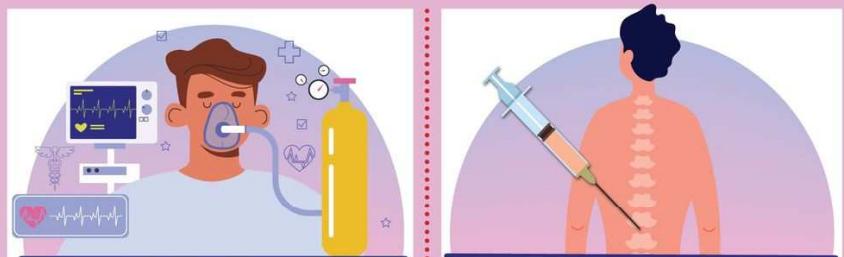


The NEW ENGLAND
JOURNAL of MEDICINE



No Difference in 30-Day Major Complications between General Anesthesia and Neuraxial Anesthesia

Found in multicenter retrospective cohort study of outpatient total joint arthroplasty patients



General anesthesia group:

Discharged from recovery room faster

More likely **NOT** to achieve same-day discharge status

2.3% of the 1,520 general anesthesia patients experienced major complications at 30 days



Neuraxial group:

Less pain and less nausea and vomiting in postoperative period

More likely to achieve same-day discharge status

1.8% of the 10,003 neuraxial anesthesia patients experienced major complications at 30 days

aOR 0.85, 95% CI: 0.56-1.27, p=0.39

Primary outcome of 30-day major complications:
mortality, myocardial infarction, deep vein thrombosis, pulmonary embolism, stroke, acute renal failure

AG vs RA

HOSPITAL vs AMBULATOIRE

Table 1 Comparison of spinal anesthesia (SA) and general anesthesia (GA) for outpatient total joint arthroplasty

Perioperative factor	Evidence favors SA	Evidence favors GA	Comments
Perioperative mortality	+		Consensus based on existing evidence ⁶ ; however, unknown advantage in patients qualifying for outpatient TJA
Pulmonary complications			
Acute renal failure			
Infections			
Deep vein thrombosis Pulmonary embolism	+/-		SA may confer small benefit ⁶ but may provide no difference in modern practice ⁵
Surgical bleeding	+/-		Limited evidence that SA reduces bleeding ^{6,8} but antifibrinolytics may eliminate differences
Transfusion			
Major adverse cardiac events	-	-	No difference based on existing evidence ⁸
Postoperative nausea and vomiting	+/-		SA may confer small benefit ¹² but may be no difference with modern total intravenous anesthesia techniques and fluid replacement
Urinary retention		+	Lower odds with GA ⁶
Early physical therapy participation		+	GA may be advantageous, ^{22,23} especially compared with SA with bupivacaine
Postoperative pain	-	-	Early pain may be higher with GA but after 6 hours SA results in more pain ^{22,23} ; multimodal analgesia may minimize differences

+ Likely benefit; +/– Possible benefit; – No difference.

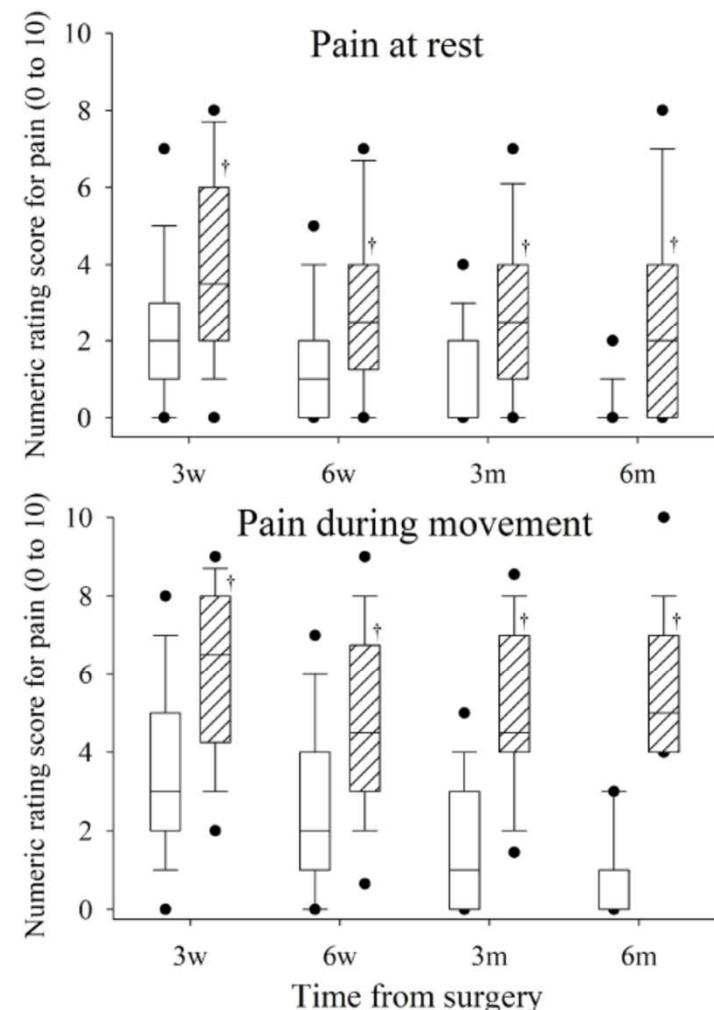
TJA, total joint arthroplasty.

ANALGESIE NE S'ARRETE PAS A J1

CPS : 14%

Table 3 Univariable (unadjusted) analysis of preoperative patient characteristics, type of insurance, socioeconomic status, study year, duration of surgery, primary anesthesia and analgesia type, preoperative functional and psychological testing of subjects with and without CPSP

	No CPSP (n=211)	CPSP (n=34)	Standardized difference* (95% CI)	P value
Gender, n (%)				
Male	78 (44)	7 (20)		0.08
Female	133 (56)	27 (80)	0.16 (-0.01 to 0.31)	
Race, n (%)				
White	159 (75)	20 (59)	0.16 (-0.01 to 0.33)	0.06
African American	52 (25)	14 (41)		
Initial postoperative analgesia method, n (%)				
Epidural	179 (85)	27 (79)		0.78
Adductor canal block	24 (11)	5 (15)	-0.05 (-0.19 to 0.09)	
Patient controlled analgesia (intravenous)	8 (4)	2 (6)		
Weighted average pain score (0–72 hour) score/hour	2.8 (1.8–3.7)	4.2 (2.0–5.0)	0.58 (0.22 to 0.95)	0.005
Pain Catastrophizing Scale	10 (4–18)	14 (6–28)	0.42 (0.05 to 0.79)	0.07
Missing, n (%)	7 (3)	1 (3)		
Beck's Depression Inventory II, n (%)	5 (2–9)	8 (4–12)	0.55 (0.18 to 0.92)	0.006
State Trait Anxiety Index				
State anxiety	29 (23–40)	39 (29–49)	0.55 (0.18 to 0.92)	0.004



EVALUER - DEPISTER



Chirurgies diverses
International Pain Outcome Questionnaire



Table 2 Final prediction models for chronic postsurgical pain. Results are presented as β coefficients and odds ratios (95% CI). CI, confidence interval; CPSP, chronic postsurgical pain; OR, odds ratio; POD, postoperative day; NRS, numerical rating scale.

Predictor	Model POD1			Model POD14		
	β coefficient	OR (95% CI)	P-value	β coefficient	OR (95% CI)	P-value
(Intercept)	-2.540	0.08 (0.04–0.17)	0.000	-2.540	0.08 (0.04–0.17)	0.000
Surgery type, bone surgery	0.785	2.19 (1.29–3.74)	0.004	0.696	2.01 (1.10–3.67)	0.024
Preoperative treatment with opioid	1.023	2.78 (1.60–4.85)	0.000	1.397	4.04 (2.13–7.70)	0.000
Worst pain score (NRS) on POD1	0.123	1.13 (1.02–1.25)	0.015	—	—	—
Presence of pruritus within the painful area on POD1	0.732	2.08 (1.08–4.02)	0.030	—	—	—
Pain score (NRS) on POD14	—	—	—	0.449	1.57 (1.34–1.83)	0.000
Presence of painful cold within the painful area on POD14	—	—	—	1.578	4.85 (1.85–12.68)	0.002

Identifier patients
Optimiser traitements
Orienter

May 2022 - Volume 47 - 5



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- Review
- Infographics
- Regional anesthesia and acute pain
- Chronic and interventional pain
- Research reports
- Brief technical report
- Education
- Letters
- Electronic page

May 2023 - Volume 48 - 5



- Editorial
- Chronic and interventional pain
- Regional anesthesia and acute pain
- Brief technical report
- Case report
- Letters
- Abstracts

June 2022 - Volume 47 - 6



- Infographic
- Regional anesthesia and acute pain
- Obstetric analgesia
- Research reports
- Brief technical reports
- Letters
- Abstracts
- Electronic page

June 2023 - Volume 48 - 6



- Editorial
- Reviews
- Chronic and interventional pain
- Daring discourse

SELECTIONNER PREVENIR

Original research

A Multimodal Pain Management Protocol Including Preoperative Cryoneurolysis for Total Knee Arthroplasty to Reduce Pain, Opioid Consumption, and Length of Stay

Arthroplast Today. 2021

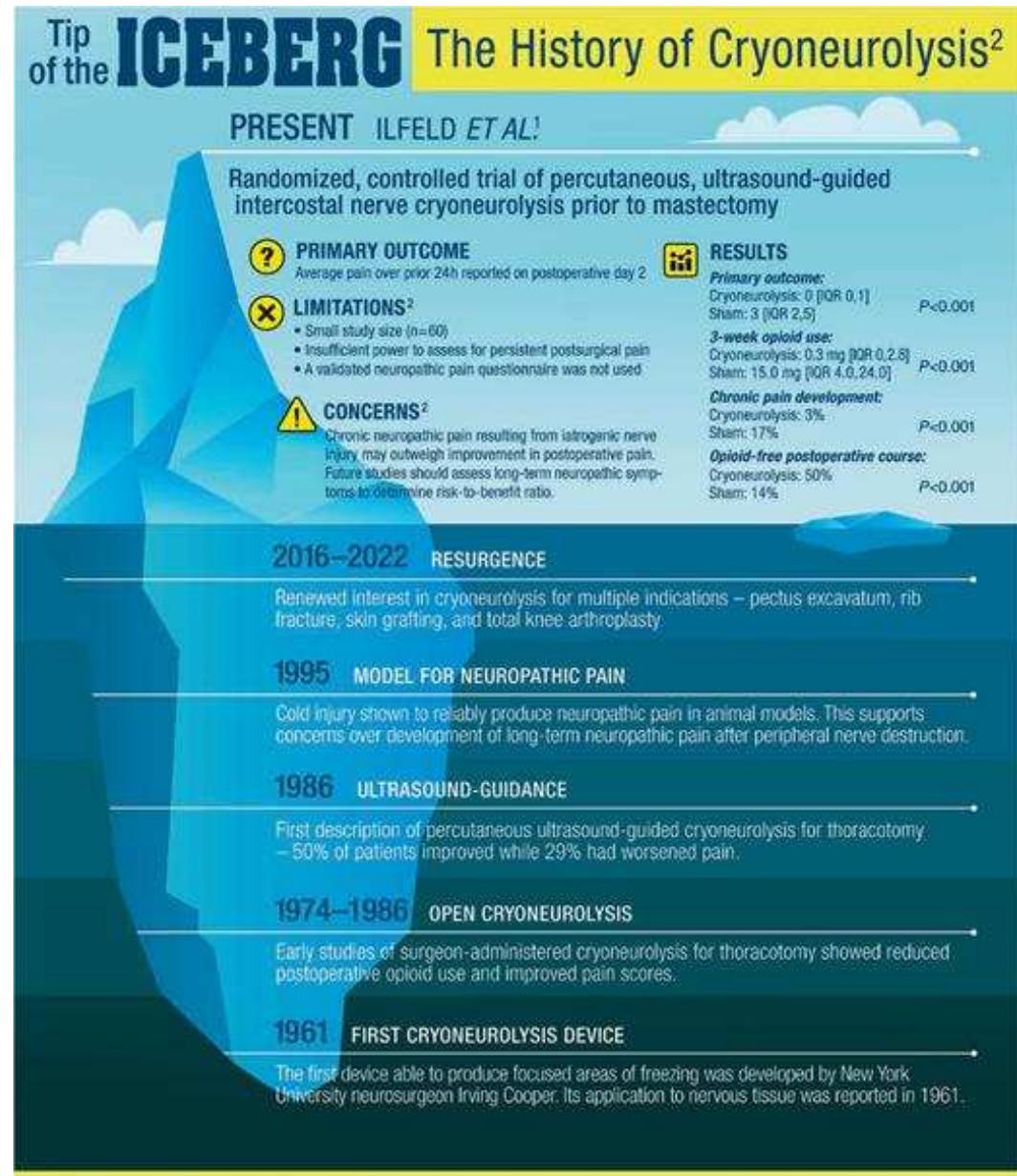
Joshua A. Urban, MD * , Kandice Dolesh, PA-C, Erin Martin, PA-C

OrthoNebraska, Omaha, NE, USA

A Randomized Controlled Pilot Study Using Ultrasound-Guided Percutaneous Cryoneurolysis of the Infrapatellar Branch of the Saphenous Nerve for Analgesia Following Total Knee Arthroplasty

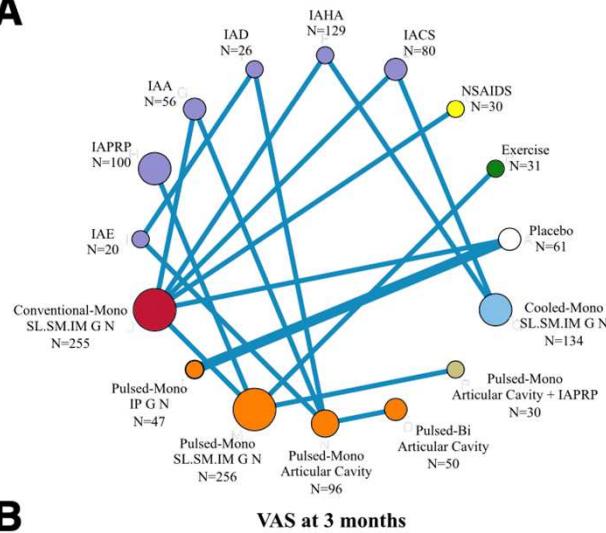
Matthew W. Swisher  · Scott T. Ball · Francis B. Gonzales · Krishna R. Cidambi · Andrea M. Trescot · Brian M. Ilfeld

Pain Ther 2022



ECHOGUIDAGE AU SERVICE DE LA DOULEUR

A



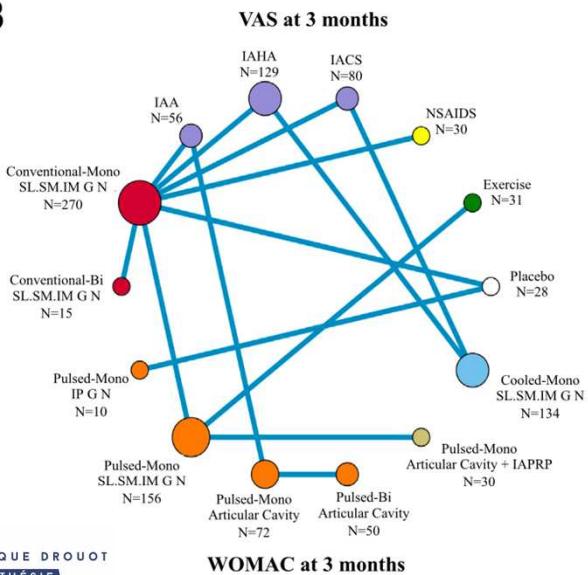
21 RCT – 1818 patients



RF – Injection intraarticulaire

AINS – Exercices – Placebo

B



RFA is effective in improving both knee pain and function in patients with Knee Osteoarthritis, at least in the short term (6 months). Patients respond better to the cooled modality than the conventional and pulsed modalities. Bipolar is more effective than monopolar for improving pain and function in conventional and pulsed modalities. **Fluoroscopy and ultrasound guidance showed no differences in improving pain and function.** The effectiveness of RFA in cooled modality using bipolar or in combination with various intra-articular injections remains to be compared.

DOULEUR INTERMEDIAIRE DOULEUR CHRONIQUE

DANS UN PARCOURS

TraITEMENT de 1^{ère} Ligne



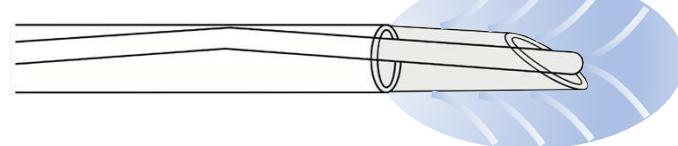
Inefficace : Bloc test



Positif
Radiofréquence

RF pulsée

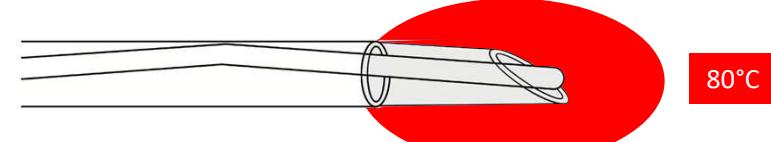
Neuromodulation



42 degrés pendant 2-8 minutes

RF continue

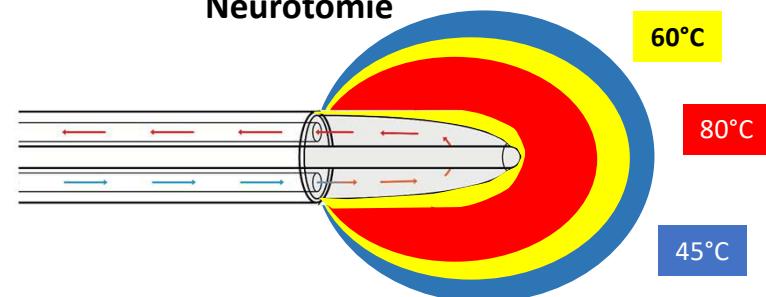
Neurotomie



80 degrés pendant 90 secondes

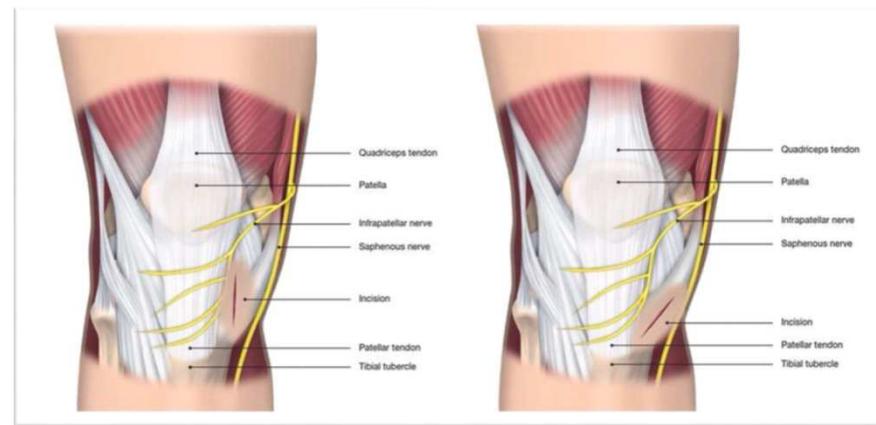
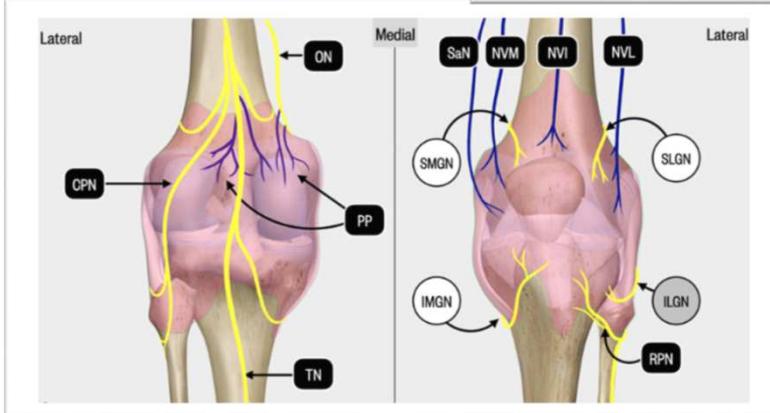
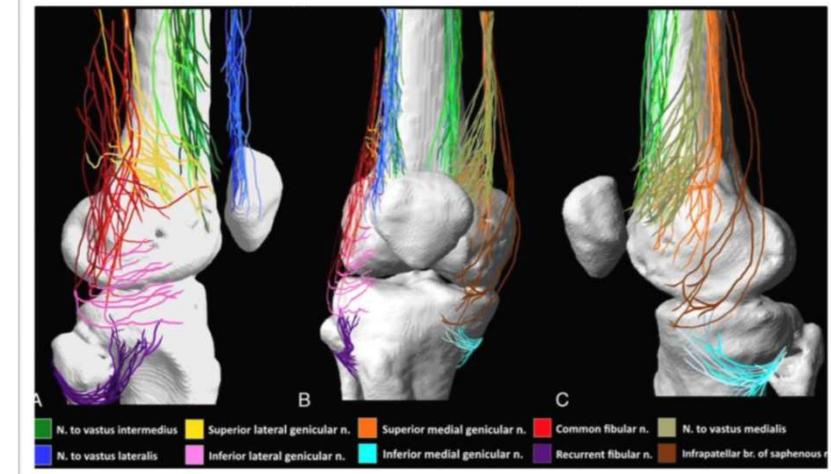
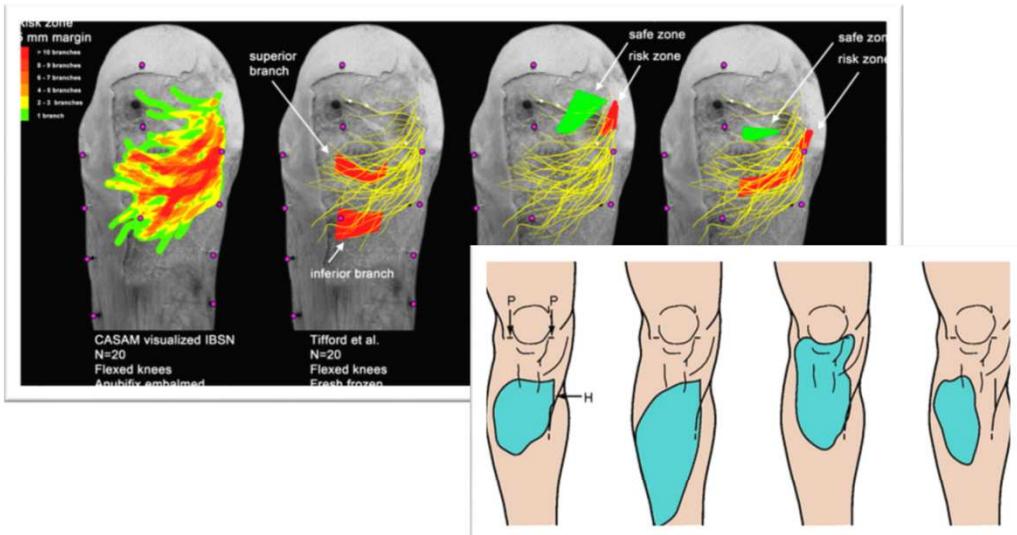
RF cooled

Neurotomie



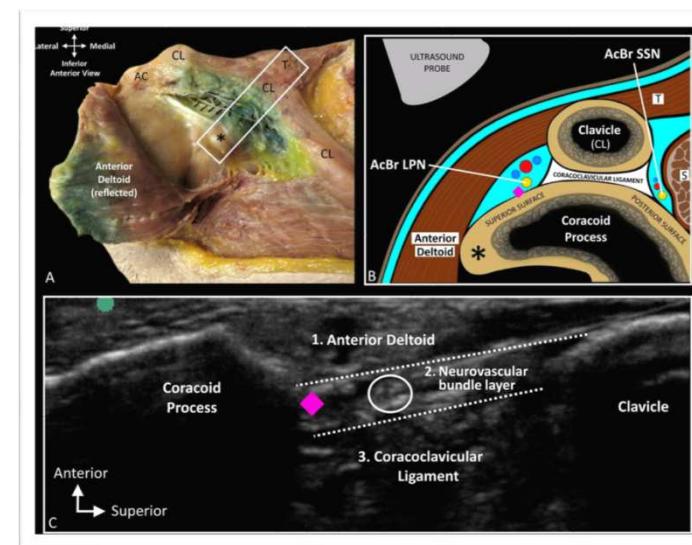
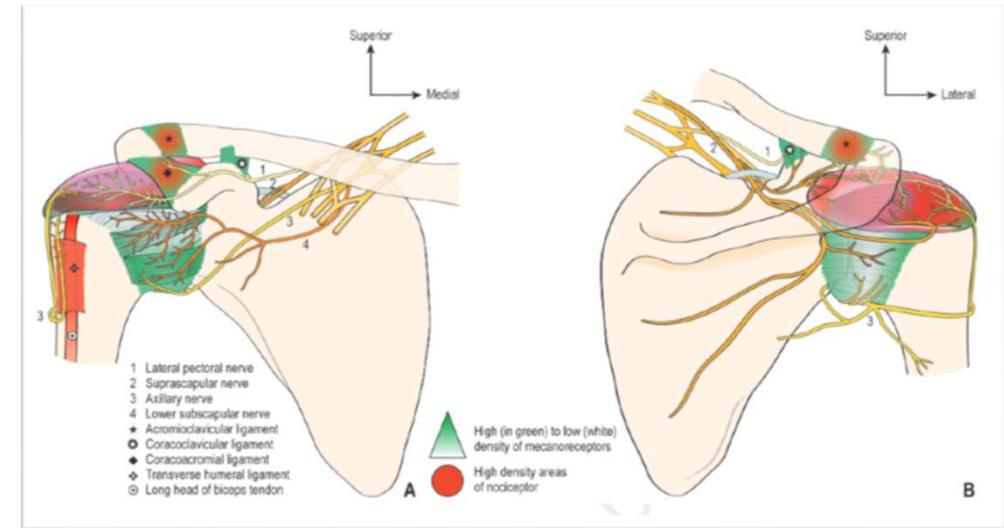
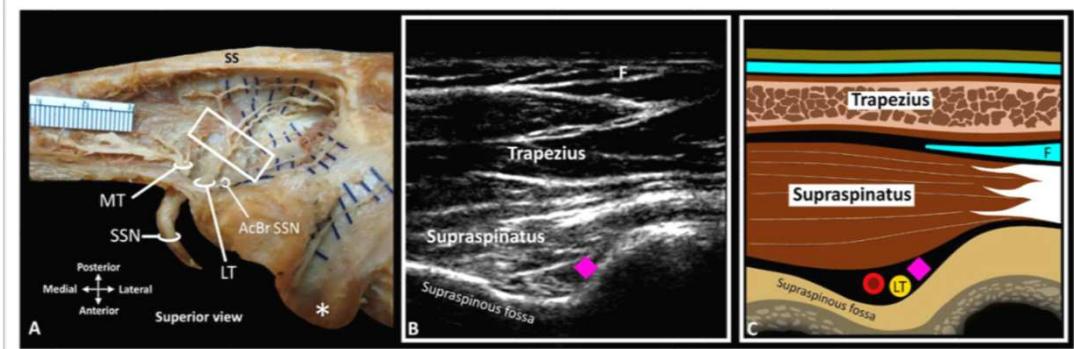
42°C

L'ANATOMIE ENCORE ET TOUJOURS



AL Kerver et al. J Bone Joint Surg Am. 2013
BM Henry et al. J Knee Surg. 2017
J Tran et al. RAPM 2018

L'ANATOMIE ENCORE ET TOUJOURS



P Laumonerie et al. JSES 2020
 J Tran et al. RAPM 2019
 J Tran et al. RAPM 2018

ADAPTEE A LA CHIRURGIE



40 patients - PTG



Adducteur + IPACK
± SMGN + SLGN + IMGN

Conso opioïde sur 24 heures



Table 2 Primary and secondary outcomes

	SHAM (n=20)	BLOCK (n=20)	P value
Daily opioid consumption MME, mean (SD)			
0–24 hours	58 (35)	23 (20)	<0.001
24–48 hours	40 (34)	27 (26)	0.216
POD 7	23 (24)	10 (14)	0.062
Cumulative opioid consumption (48 hours) MME, mean (SD)			
	98 (56)	50 (40)	0.004
Pain intensity (NRS-11), mean (SD)			
PACU	1.6 (3.0)	0.3 (0.9)	0.059
6 hours	4.3 (2.2)	2.6 (1.9)	0.012
24 hours, at rest	3.5 (1.6)	2.7 (1.9)	0.180
24 hours, movement	6.3 (1.9)	4.9 (2.4)	0.057
36 hours	4.7 (2.5)	3.5 (2.0)	0.091
48 hours	5.6 (2.2)	4.2 (2.6)	0.067
Worst pain, POD 7, mean (SD)			
	5.0 (2.2)	4.4 (2.0)	0.301
Patient satisfaction, mean (SD)			
24 hours	8.6 (1.1)	9.1 (0.9)	0.140
POD 7	8.9 (1.2)	8.8 (1.6)	0.654
Number of times awakened due to pain, median (range)			
	1 (0–3)	0 (0–4)	0.114
Walk time, POD 1, s, mean (SD)			
	80.2 (43.6)	74.2 (40.8)	0.675

PARCOURS DOULEUR AIGUE

Intérêt d'une analgésie myofasciale sous échoguidage dans la PEC de la lombalgie aiguë commune : étude comparative non randomisée.
N. MARJANOVIC, R. JREIGE, O. CHOQUET, F. JEDRYKA,
M. JUBRE, S. LEFEBVRE, X. CAPDEVILA, M. SEBBANE
CONGRES Urgences 2019



Lombalgie aigue commune
EVA > 3/10 - EIFEL > 5/24



98 : 75 ALR - 25 contrôles

	MEDICAL	ALR
EVA	8 [7-10]	8 [7-8]
EIFEL	19 [15-24]	18 [13-21]
Δ EVA h1	4.6 [3.4-5.3]	2.5 [1-4]
Δ EVA J1	4.7 [4.2-5.2]	2.8 [1-4]
Δ EIFEL J1	6.8 [5-9]	1.8 [-2-5]

ARTICLE SUMMARY

1. Why is this topic important?

Although there now exist novel pain management techniques, the main pain management strategy in the emergency department (ED) is opioid prescription. The excess use of opioids in the ED is a contributing factor in the development of opioid addiction.

2. What does this review attempt to show?

The erector spinae plane block (ESPB) is a novel technique of regional anesthesia, that may be more efficient and appropriate for the ED setting given its efficacy in the management of common ED presenting conditions.

3. What are the key findings?

There are currently only 10 published papers that discuss the use of ESPB in the ED. ESPB shows promising pain control for seven different ED presenting conditions: rib fractures, spine fractures, mechanical pain, burn injuries, herpes zoster, renal colic, and acute pancreatitis. ESPB was not associated with any complications after its administration.

4. How is patient care impacted?

With the use of effective pain management modalities, such as ESPB, emergency physicians can effectively control patients' acute pain. The use of ESPB can result in the prescription of fewer opioids, which in return can decrease the patients' risk of developing an opioid addiction.

ALR ET ANTICOAGULANTS



Table 3 Management in high bleeding risk blocks (neuraxial and deep nerve blocks)

Drug and dose	High risk of bleeding block (neuraxial and deep nerve blocks) ^a		
	Time from last drug intake to intervention ^c	Target laboratory value at intervention	Time from intervention to next drug dose
VKA	Until target lab value: (about 3 days acenocoumarol; 5 days warfarin, fluindione; 7 days phenprocoumon)	INR normal	
DXA low ^b	24 h rivaroxaban, edoxaban (30 h if CrCl <30 ml min ⁻¹), 36 h apixaban	No testing	
DXA high	72 h or until target laboratory value (until target laboratory value if CrCl <30 ml min ⁻¹)	DXA level <30 ng ml ⁻¹ (alternative: anti-Xa ≤ 0.1 IU ml ⁻¹)	Low doses: according to guidelines on postOP VTE prophylaxis ^d (about 8 h – t _{max} = 6 h postop). Consider prolonged time interval after bloody tap ^e
Dabigatran low ^b	48 h	No testing	
Dabigatran high	72 h or until target laboratory value (until target laboratory value if CrCl <50 ml min ⁻¹)	DTI level < 30 ng ml ⁻¹ (alternative: thrombin time in normal range of local laboratory)	High doses: according to guidelines on therapeutic anticoagulation ^f (about 24 h postop)
LWMWH low ≤50 IU anti-Xa kg ⁻¹ day ⁻¹ enoxaparin ≤40 mg day ⁻¹	12 h (24 h if CrCl <30 ml min ⁻¹)	No testing	
LWMWH high	24 h (48 h if CrCl <30 ml min ⁻¹) or until target lab value (especially if CrCl <30 ml min ⁻¹)	anti-Xa ≤ 0.1 IU ml ⁻¹	VKA, DOAC, LWMWH high, UFH high; should not be administered with a catheter in situ
UFH low ≤200 IU kg ⁻¹ day ⁻¹ SC ≤100 IU kg ⁻¹ day ⁻¹ i.v.	4 h	No testing	UFH low: 1 h for i.v. in cardiovascular surgery
UFH high	Until target lab value (about 6 h if i.v., 12 h if SC)	aPTT or anti-Xa or ACT in normal range of local laboratory	
Fondaparinux low ≤2.5 mg day ⁻¹	36 h (72 h if CrCl <50 ml min ⁻¹)	No testing	
Fondaparinux high	until target lab value (about 4 days)	Calibrated anti-Xa ≤ 0.1 IU ml ⁻¹	Routinely prescribed next time point
Aspirin low ≤ 200 mg day ⁻¹	0	No testing	
Aspirin high	3 days (in normal platelet counts) to 7 days	(consider specific platelet function tests in normal range of local laboratory)	6 h
P2Y ₁₂ inhibitor	5 days ticagrelor 5 to 7 days clopidogrel 7 days prasugrel or until target laboratory value		0-h clopidogrel 75 mg 24 h prasugrel, ticagrelor 2 days clopidogrel 300 mg
Aspirin low + anticoagulant	Aspirin: 0 + time interval of specific anticoagulant	specific laboratory test for combined anticoagulant	Aspirin low: routinely prescribed next time point Combined anticoagulant, antiplatelet drug: according to guidelines on therapeutic anticoagulation, platelet inhibition ^f (about 24 h postOP)
Aspirin low and antiplatelet drug	Aspirin: 0 and time interval of specific antiplatelet drug	(consider specific laboratory test for combined antiplatelet drug)	

Table 4 Management in low risk of bleeding blocks (superficial nerve blocks)

Drug and dose	Block with low risk of bleeding (Superficial nerve blocks) ^a		
	Time from last drug intake to intervention	Time from intervention to next drug dose	Target laboratory value at intervention
DXA DTI LWMWH low ≤ 50 IU anti-Xa kg ⁻¹ day ⁻¹ Enoxaparin ≤40 mg day ⁻¹ UFH low ≤200 IU kg ⁻¹ day ⁻¹ SC ≤100 IU kg ⁻¹ day ⁻¹ i.v. Fondaparinux low Aspirin low ≤200 mg day ⁻¹ VKA LWMWH high UFH high Aspirin high P2Y ₁₂ inhibitor Drug combinations	Zero	At routinely next prescribed time point	No testing (consider specific laboratory test if anticoagulant drug accumulation is suspected, e.g. in renal insufficiency)

0h



ANALGESIE MULTIMODALE

POUR TOUS LES PATIENTS

INTEGRER AUX PARCOURS

DOULEUR INTERMEDIAIRE - CHRONIQUE

6th World Congress on Regional Anesthesia & Pain Medicine

Save the date!

We look forward to meeting you all in Paris, France.

6—9.SEP
2023
PARIS, FRANCE

Paris



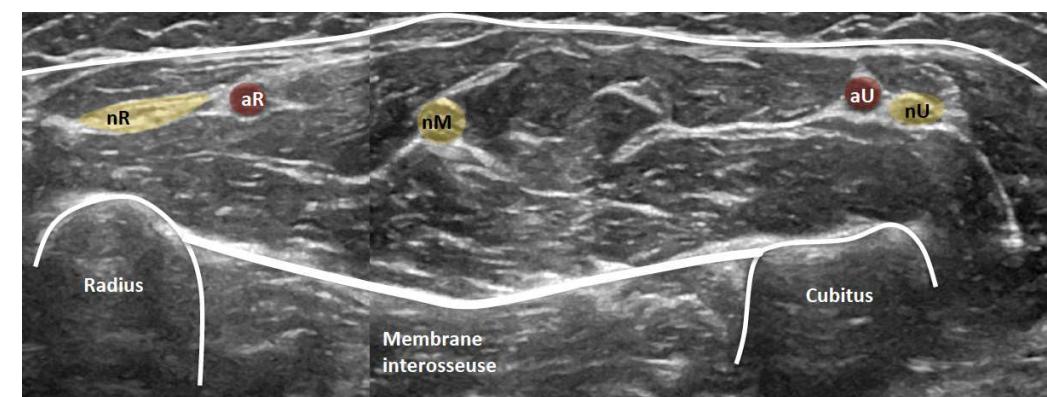
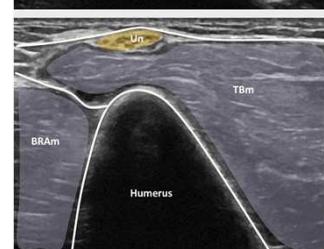
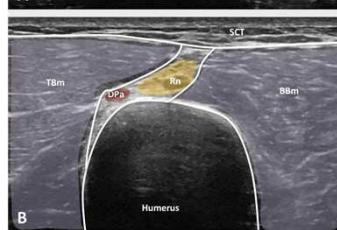
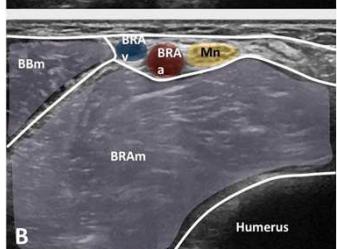
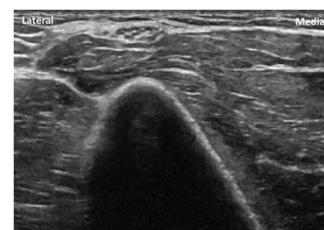
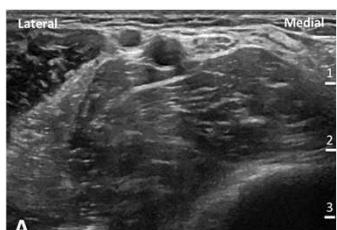
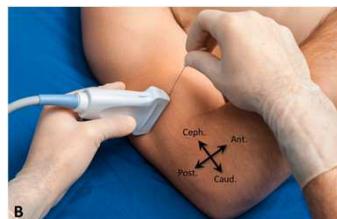


- More than 40 procedures described
- Ultrasound-guided nerve blocks included
- Anesthetic needles
- Clinical tips and tricks
- Literature review

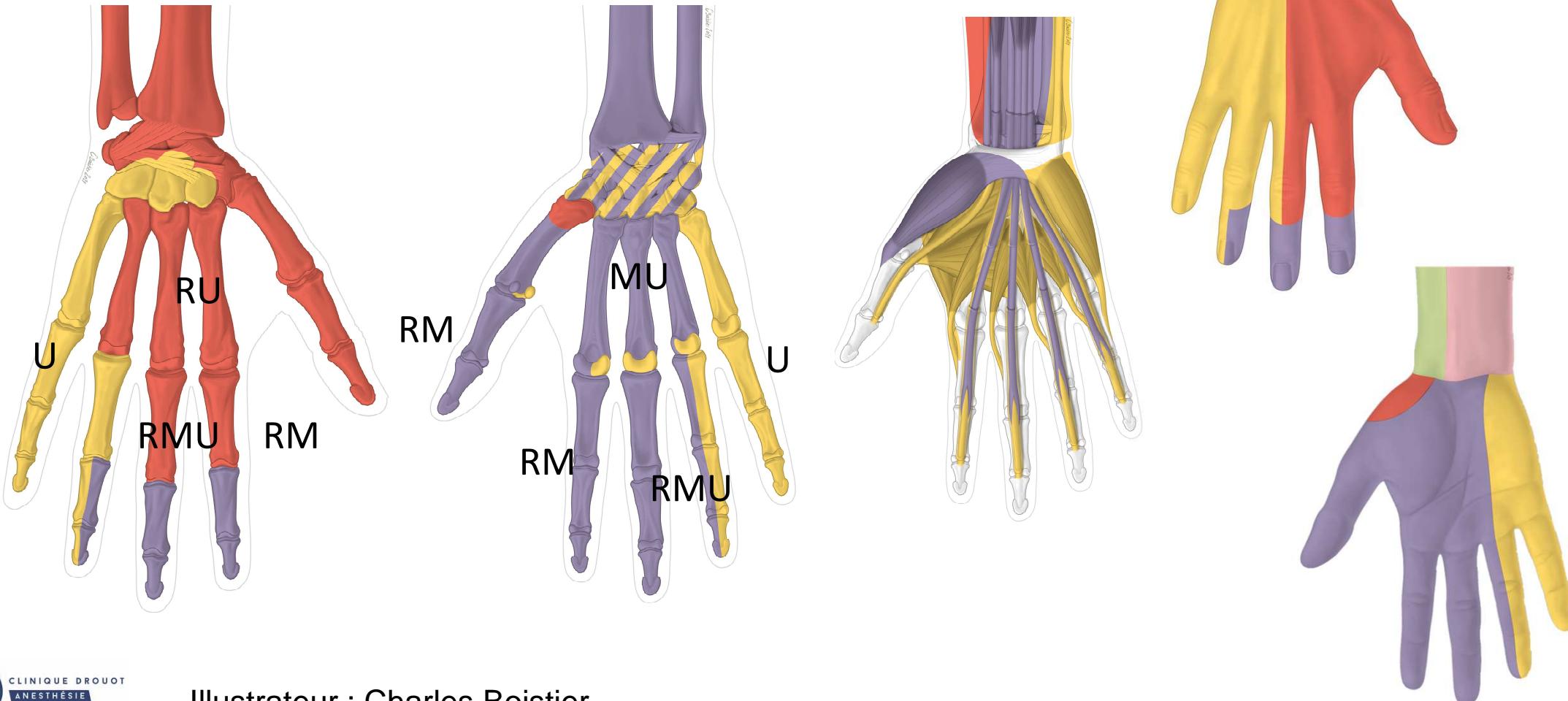
Eric Albrecht

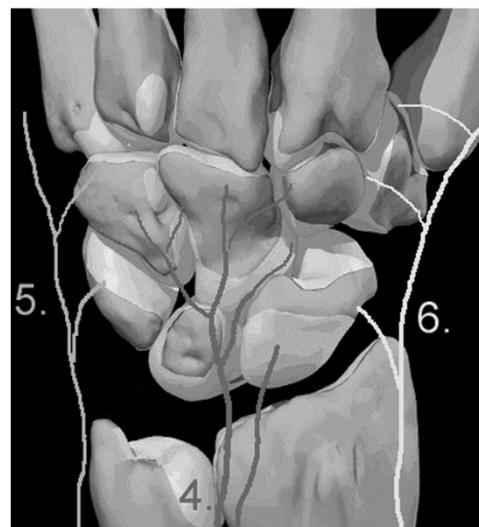
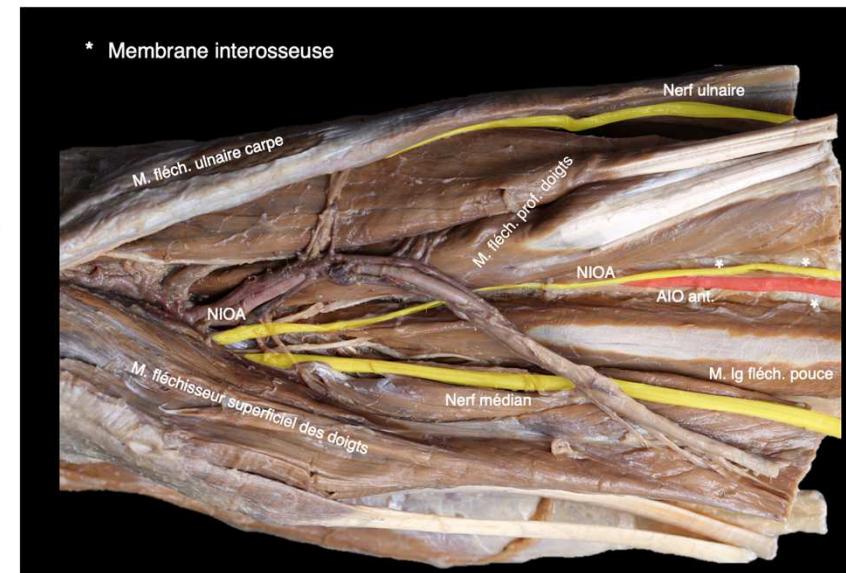
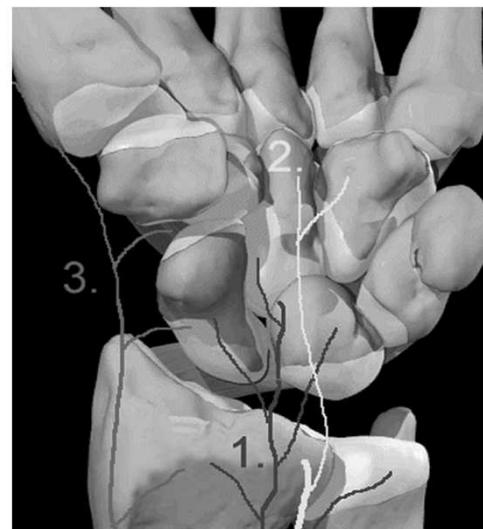
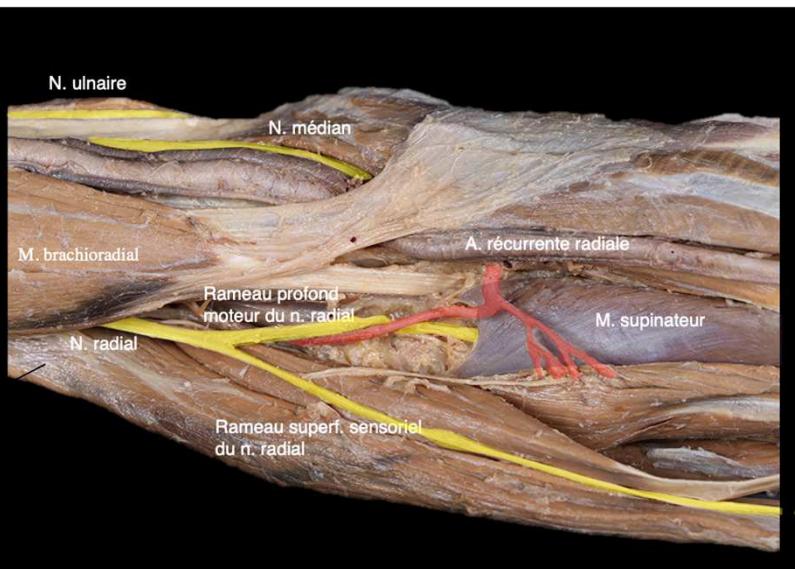
Sébastien Bloc - Hughes Cadus - Stéphane Grégoire
& Kyle Robert Kirkham

TRONCULAIRES



COMBINAISONS





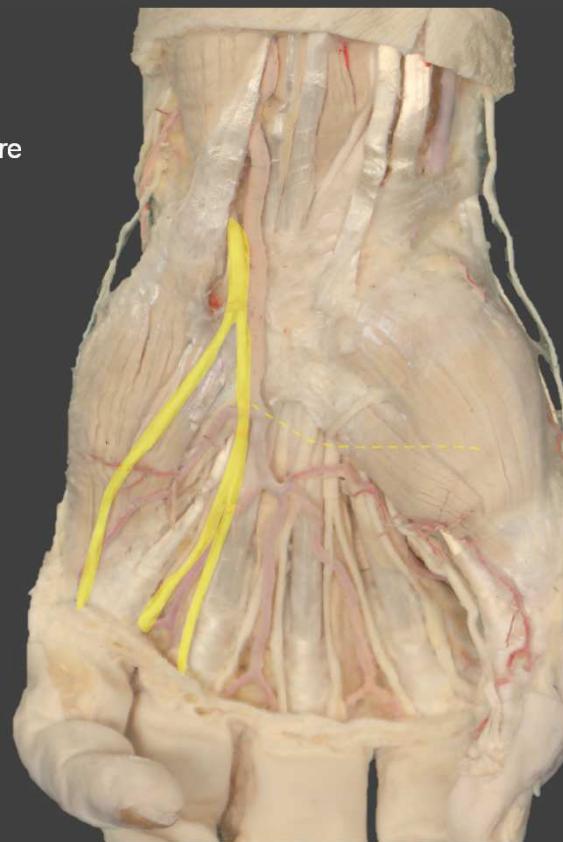
CHIRURGIE MAIN vs POIGNET

Vue postérieure



N. ulnaire

Vue antérieure



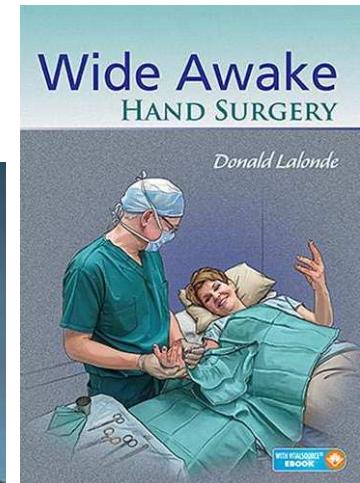
SITE PONCTION

WALANT



Sébastien Campard - Anesthésiste-Réanimateur, Nantes
Edward de Keating Hart - Chirurgien de la Main, Nantes

WALANT.SURGERY
For all your wide awake needs



Wide Awake

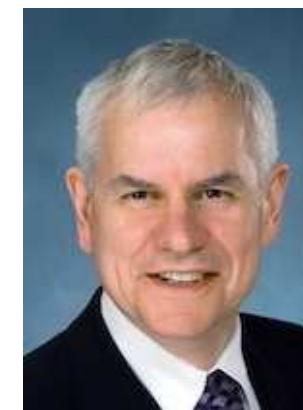


Local Anesthesia



No Tourniquet

**Lidocaine
Tumescente**



Donald LALONDE

**Adréhaline
Garrot chimique**

Leblanc MR, Lalonde J, Lalonde DH. 2007
Leblanc MR, Lalonde DH. Hand. 2011
Maliha SG, Cohen O, Jacoby A. 2019
Orman O, Yeniocak T, Baydar M. 2021

WALANT POUR LES ANESTHESISTES



Echographie



Aiguille dédiée



AL longue durée

Sécurité
Indications

24 Gauge
Biseau court

Combinaison
Analgésie



WALANT PAR LES ANESTHESISTES



1 % lidocaine
1:100,000 epinephrine



Quantifying
Blood loss



Turnover

Waiting for the **optimal epinephrine effect** is one of the **key components of WALANT**

WAITING 26–30 MIN as oppose to the traditionally taught 7 min, **results in less intraoperative bleeding** in the hand.

Mckee DE, Lalonde D, Thoma A. Hand. 2015

WALANT POUR LES PATIENTS



Optimisation blocs distaux

Indications
Absence de bloc moteur



Garrot chimique

Chirurgie > 20 min
Confort

Autonomie
Parcours Patient

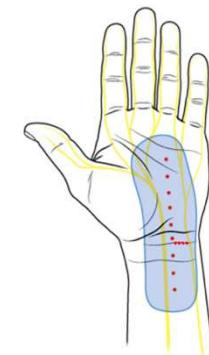
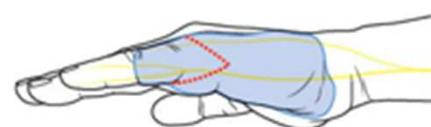
PRATIQUE DE LA WALANT



Aiguille dédiée - Echographie



Connaissance



Garrot chimique : petit volume



- 1 Lidocaine 10 mg.ml^{-1}
Adrénaline 1/200 000
- 2 Bicarbonate 8.4%



Contre-indications

Anesthésie en bague
Injection dans la gaine
Infection locale
Maladies vasculaires périphériques
Raynaud, Buerger...

NE PAS INJECTER DANS LES GAINES

A Multicenter Prospective Study
of 3,110 Consecutive Cases of
Elective Epinephrine Use in the
Fingers and Hand: The Dalhousie
Project Clinical Phase

Donald Lalonde, MD, Saint John, Canada,
Michael Bell, MD, Paul Renoult, MD, Ottawa, Canada,
Geral
Keith J Hand Surg Am. 2005
Pe

Do Not Use Epinephrine in Digital Blocks:
Myth or Truth? Part II. A Retrospective Review
of 1111 Cases

Saeed Chowdhry, M.D.
Lynn Seidenstricker, M.D.
Damon S. Cooney, M.D.
Ron Hazani, M.D.
Bradon J. Wilhelm, M.D.

Plast Reconstr Surg. 2010

ANTIDOTE : Phentolamine
1 – 2 mg - 1 to 5 ml sérum physio
Territoire injection



3 110 consecutive cases
Elective injection of low-dose epinephrine
Phentolamine was not required

1111 cases
Digital and hand surgery.
No complications

The authors suggest that **CORRECT APPLICATION** of epinephrine in digital blocks is appropriate, and defend its use

TRONCULANT TRONCULAIRE + WALANT

CARPAL TUNNEL

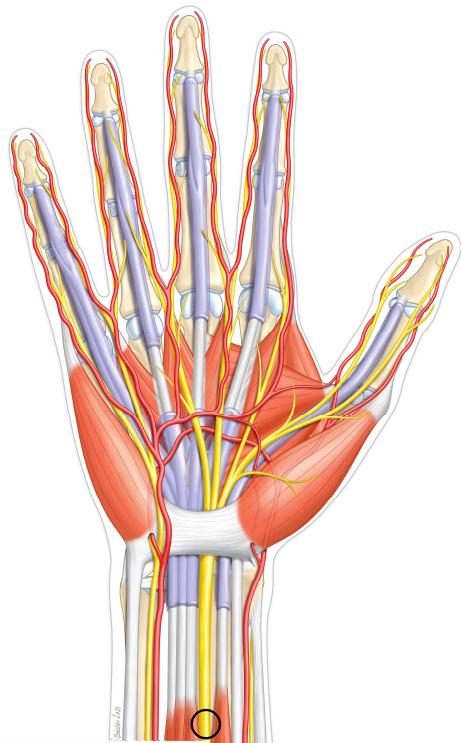
LEVEL ★★

WALANT
LOCAL & REGIONAL

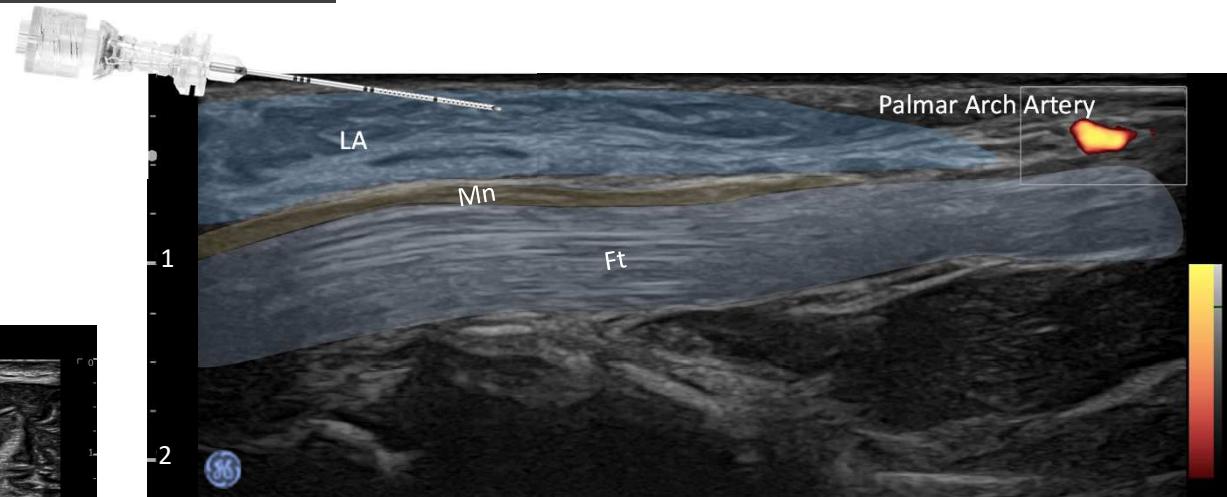
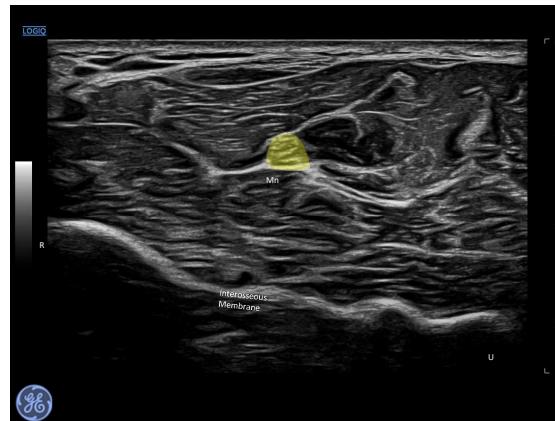


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GAMIDA
MOVING FURTHER IN HEALTHCARE



TRONCULAIRE
AL longue durée
Analgésie

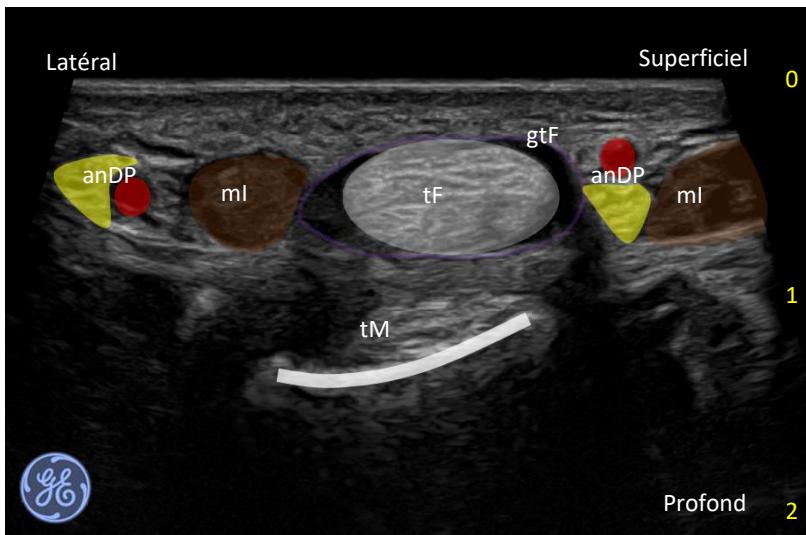


WALANT
Faible volume
Garrot chimique

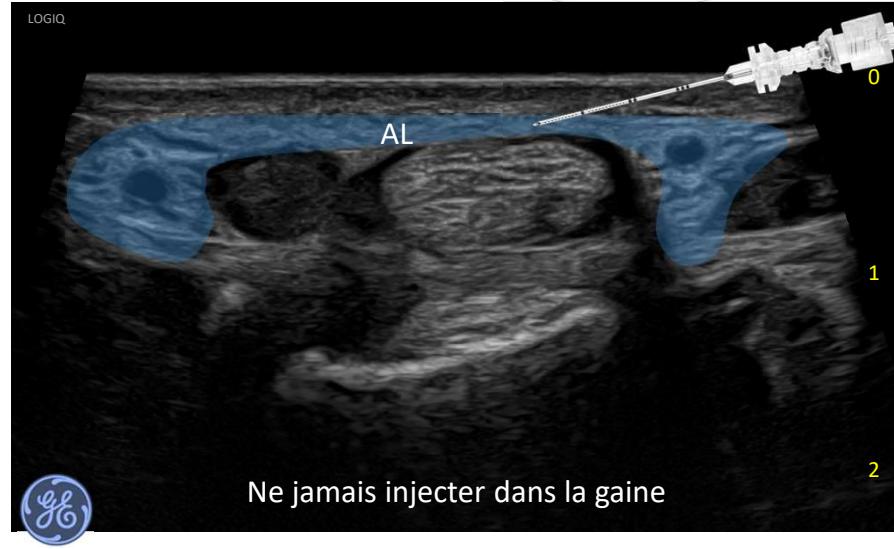
Picture : Theo Baulig
Illustrator : Charles Boistier

DOIGT LONG A RESSAUT

Photo : Theo Baulig
Illustrateur : Charles Boistier



WALANT « pure »
Anesthésie
Garrot chimique



DOIGT LONG A RESSAUT
NIVEAU ★★★

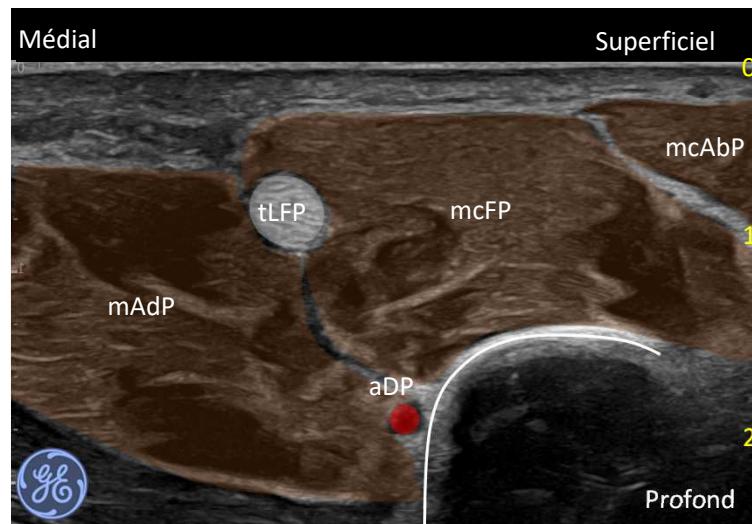
WALANT
CLINIQUE DROUOT
ANESTHÉSIE

Info Anesthésie
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CLINIQUE DROUOT
ANESTHÉSIE

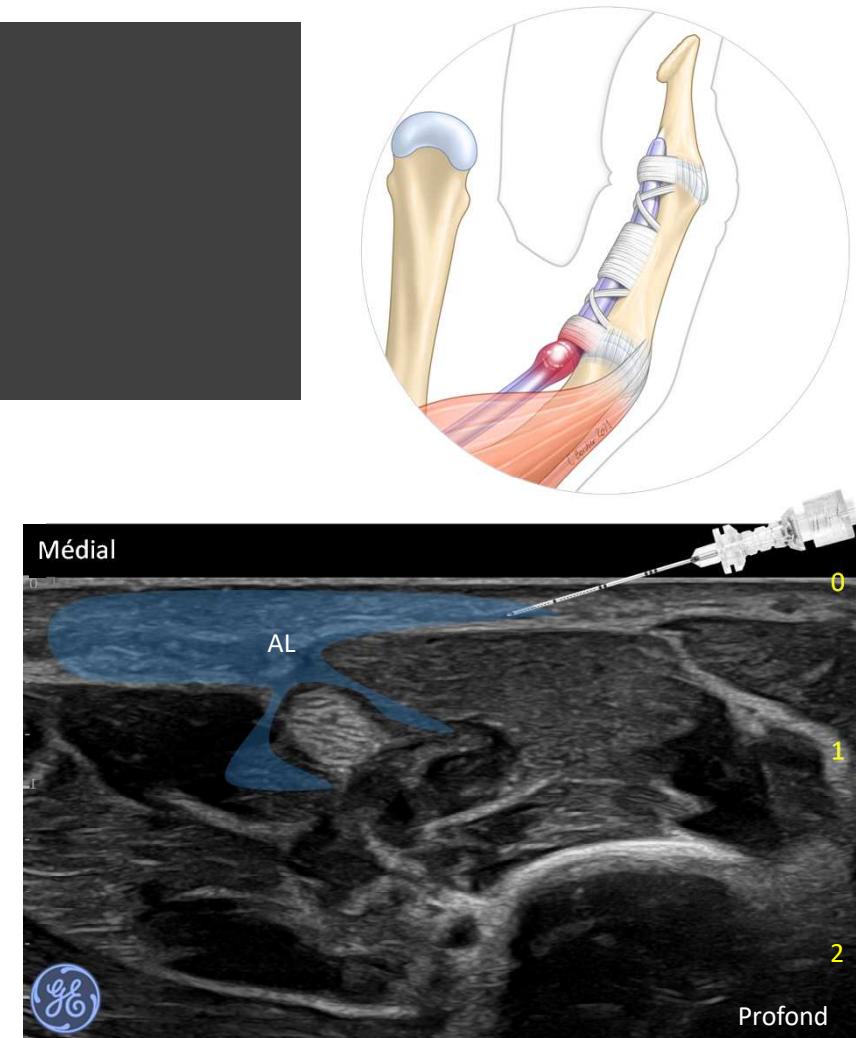
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POUCE A RESSAUT

Photo : Theo Baulig
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Anesthésie
Garrot chimique



POUCE A RESSAUT
NIVEAU ★★★

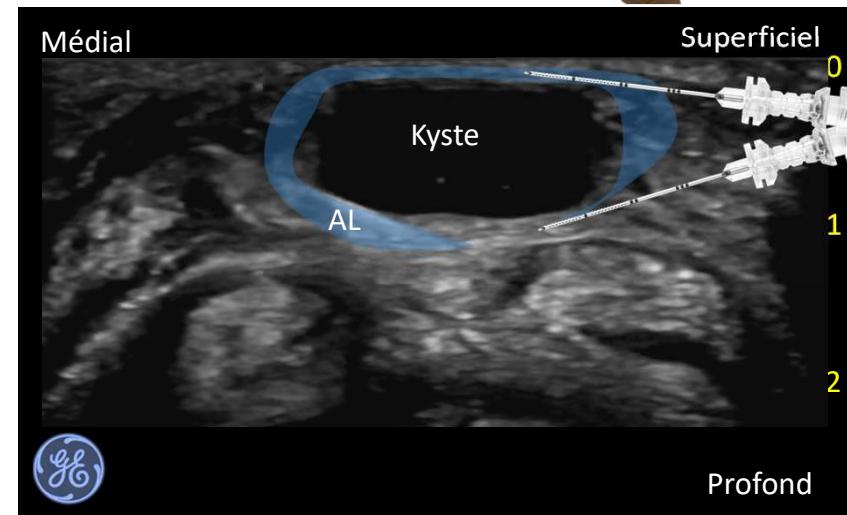
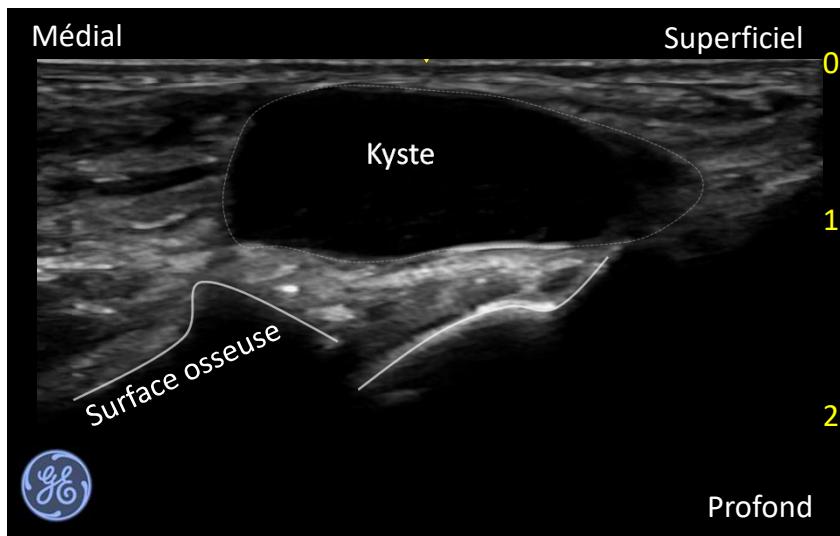
WALANT
SCO-REGIONALE

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D CLINIQUE DROUOT
ANESTHÉSIE

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KYSTE SYNOVIAL

Photo : Theo Baulig
Illustrateur : Charles Boistier



WALANT « pure »
Anesthésie
Garrot chimique

KYSTE SYNOVIAL - LIPOME

NIVEAU ★★★

WALANT

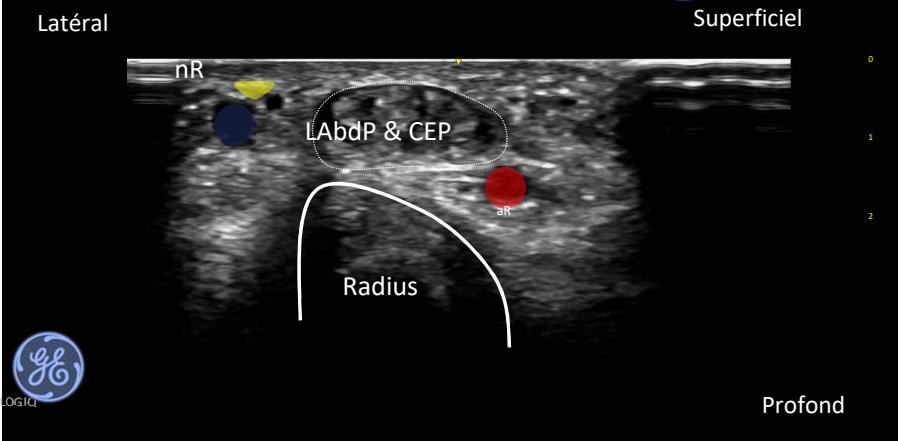
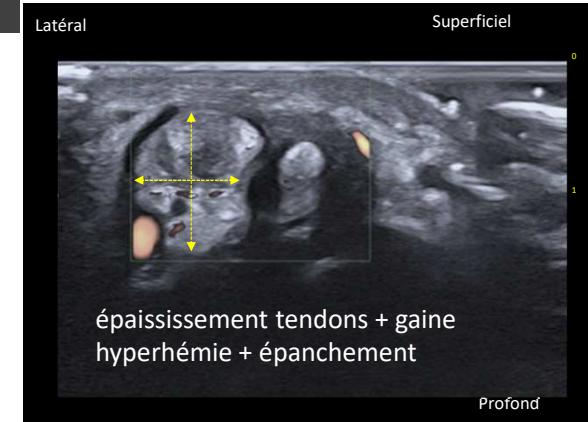
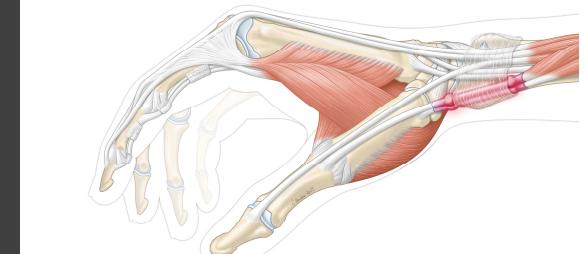
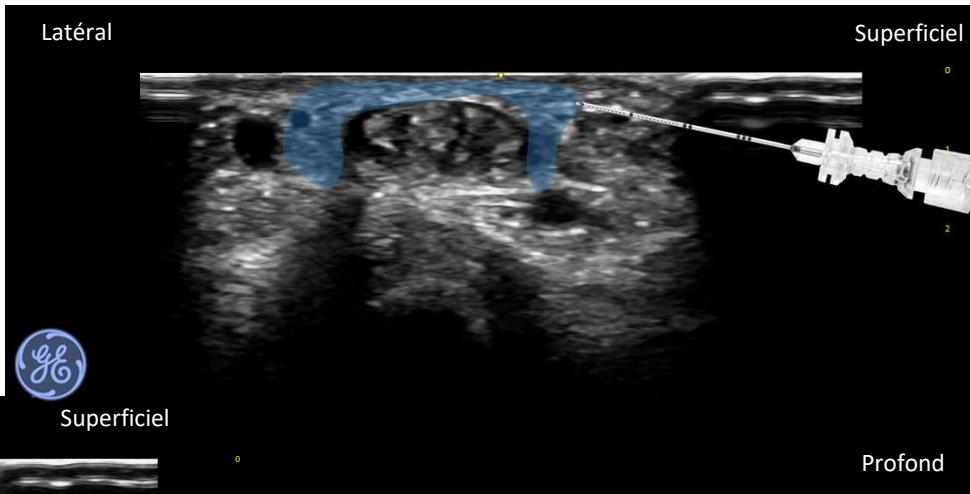


Avec le soutien de : **GAMIDA PAJUNK**
MOVING FURTHER IN HEALTHCARE

TENDINITE DE QUERVAIN

Photo : Theo Baulig
Illustrateur : Charles Boistier

WALANT « pure »
Anesthésie
Garrot chimique



TENDINITE DE QUERVAIN
NIVEAU ★★

WALANT
OCO-RÉGIONALE

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MOVING FURTHER IN HEALTHCARE



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- Info Anesthesia



www.infoanesthesia.fr



Anesthésistes
Drouot Sport



@DrouotSport

Trigger Finger
LEVEL ★★★

WALANT
LOCAL & REGIONAL

SURGERY

A1 pulley release
Open
Ultrasound-guided percutaneous

ANATOMY & SONOANATOMY

Lateral Superficial

Figure:
Un, Ulnar nerve
Mn, Median nerve
Ss, Synovial sheath
LA, Local Anesthetic
Lm, Lumbrical muscle
Hm, Head of metacarpal
Fdt, Flexor digitorum tendon
PDna, Proper palmar Digital artery & nerve
..... Position of the probe

Illustrator : Charles Boissier

Landmarks :
Flexor digitorum tendon
Proper palmar digital artery
Proper palmar digital nerve
Lumbricals muscles
Head of metacarpal

PROCEDURE

Lateral Superficial LOGIQ
LOGIQ No injection in the flexor sheath

Probe : Linear, High frequency
Position : Distal palmar crease

Needle : 24 G x 40 mm
Ponction : 1
Approach : In plane

Injection : Subcutaneous
No injection in the flexor sheath
LA : Lidocaine with epinephrine
Volume : 5 ml

Massage - Onset : 30 minutes
..... position of the probe
Vasoconstriction area 30 min after injection

PAPUNK GAMIDA N°4

Picture : Theo Boulig