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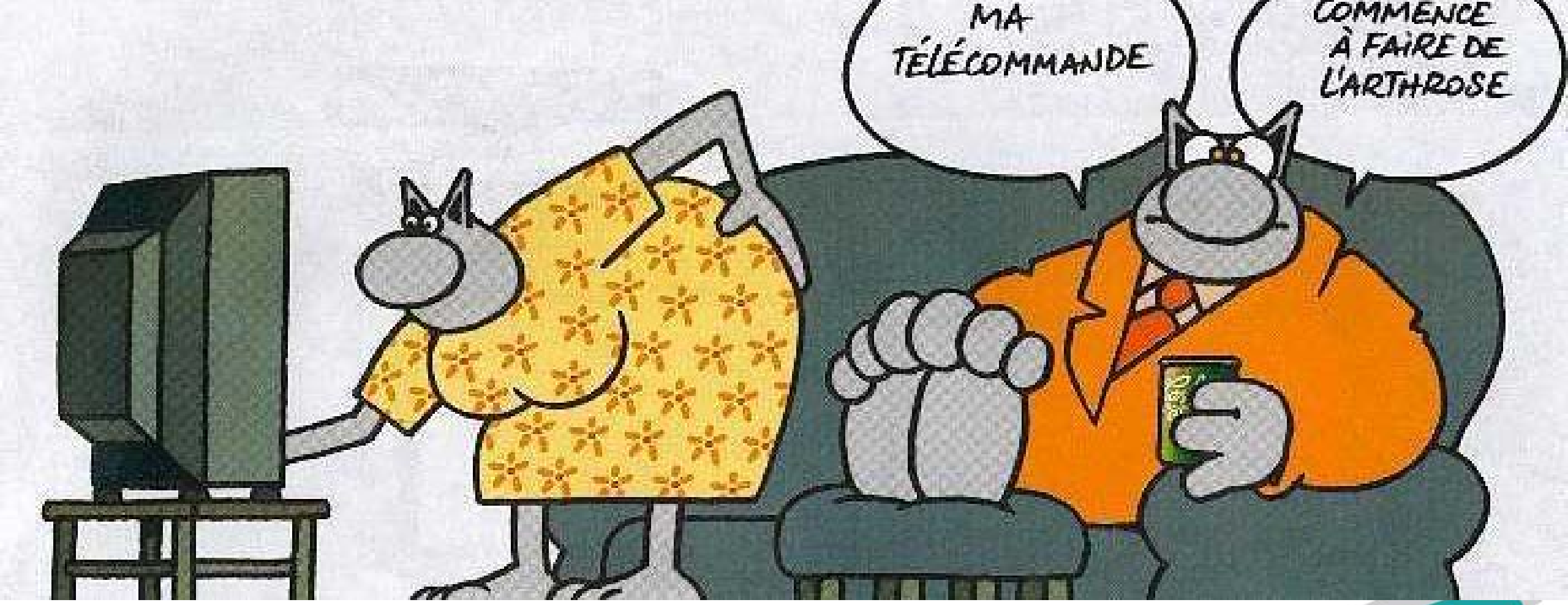
Ipack et chirurgie du genou :
Le compromis

F. Swisser DAR A
CHU Montpellier
20 septembre 2019

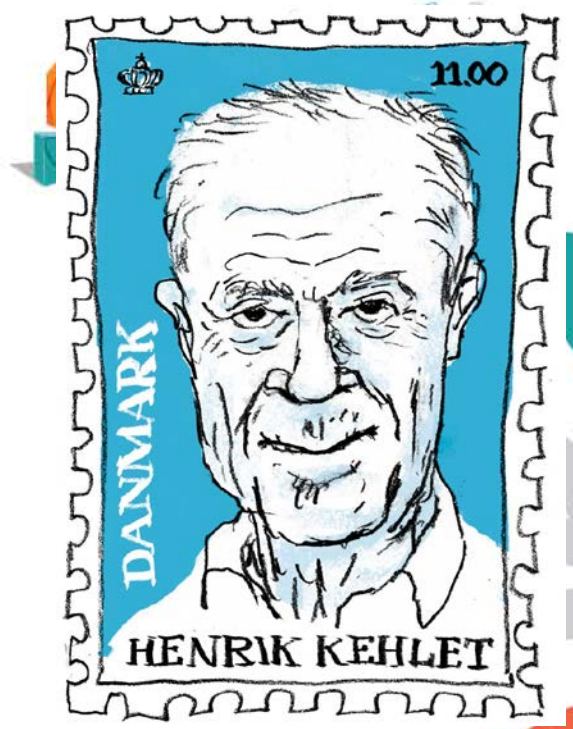


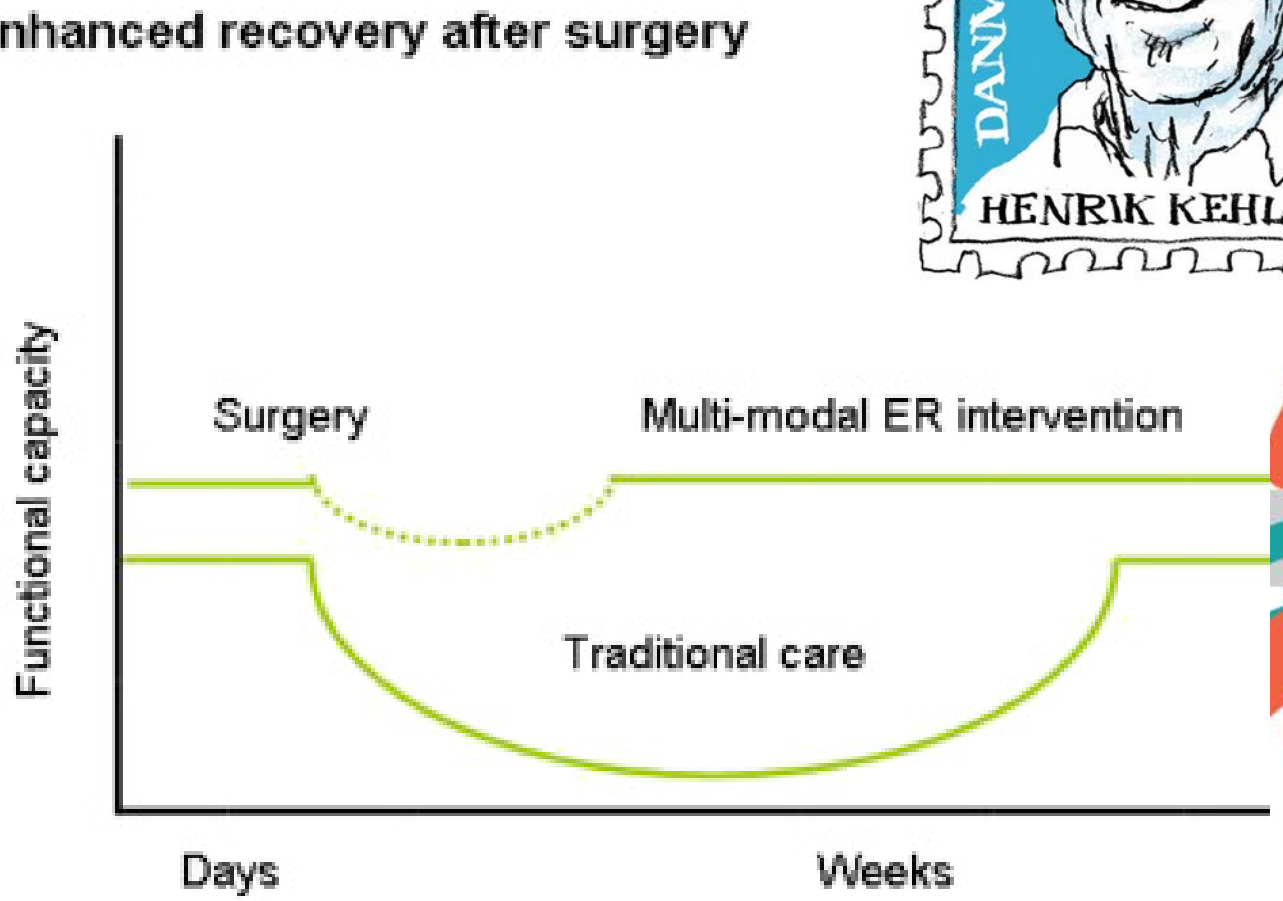
Au programme:

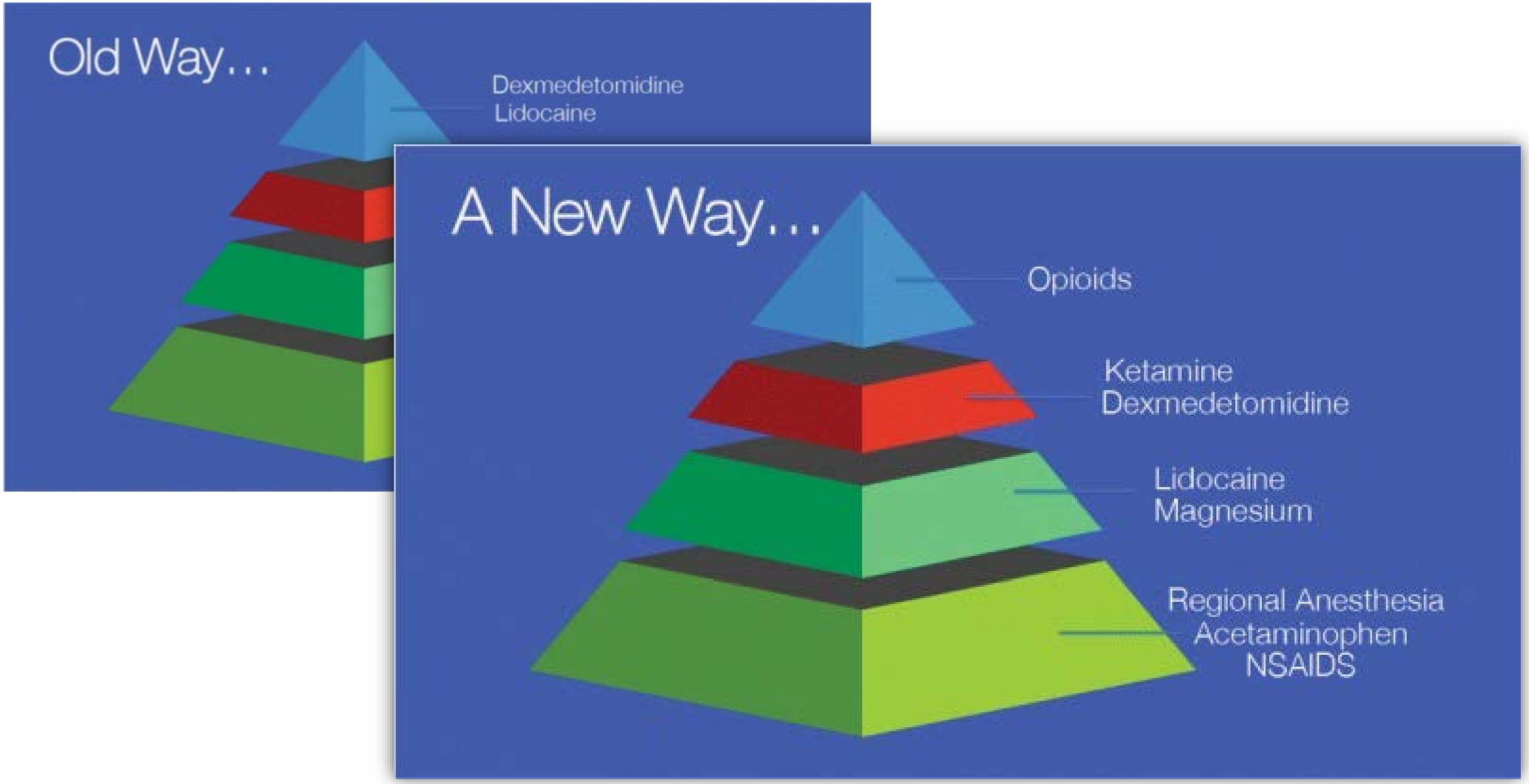
- L’incontournable anatomie
- Le concept
- Le rationnel
- Conclusion

Introduction

- Chirurgie ultra fréquente
- En augmentation (> 100000/an)
- Ambulatoire et RAAC
- Paradigme de prise en charge en (R) évolution
- Multidisciplinaire!!
- Répondant à des impératifs économiques…
- … en diminuant les complications et la mortalité postopératoire!

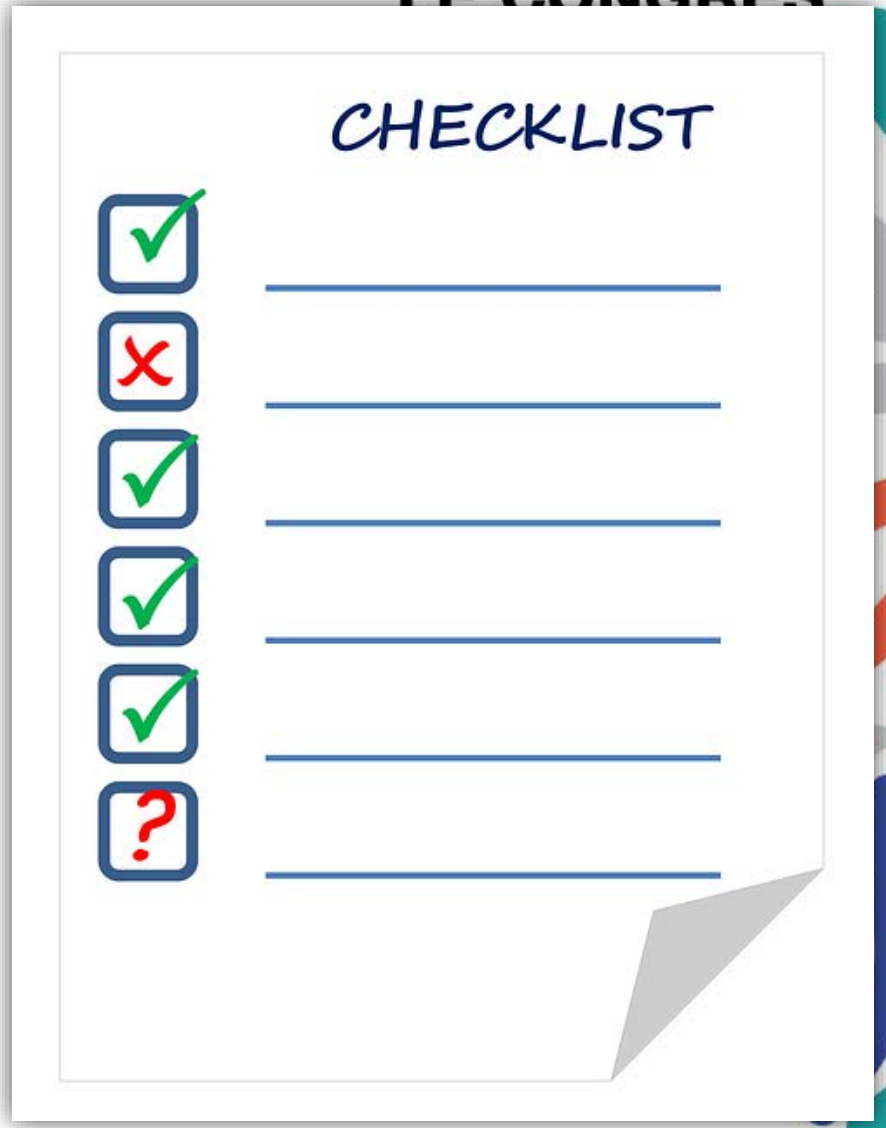





Old Way…
Dexmedetomidine
Lidocaine
A New Way…
Opioids
Ketamine
Dexmedetomidine
Lidocaine
Magnesium
Regional Anesthesia
Acetaminophen
NSAIDS

Le cahier des charges l'ALR parfaite:

- Analgésie sans opiacés
- *Durable dans le temps…*
- Stabilité hémodynamique
- Sans risque de lésion nerveuse
- Permettre une mobilisation précoce
- Sans risque de chute / conserver la proprioception
- La mobilisation précoce ne doit pas se faire au détriment de l'analgésie



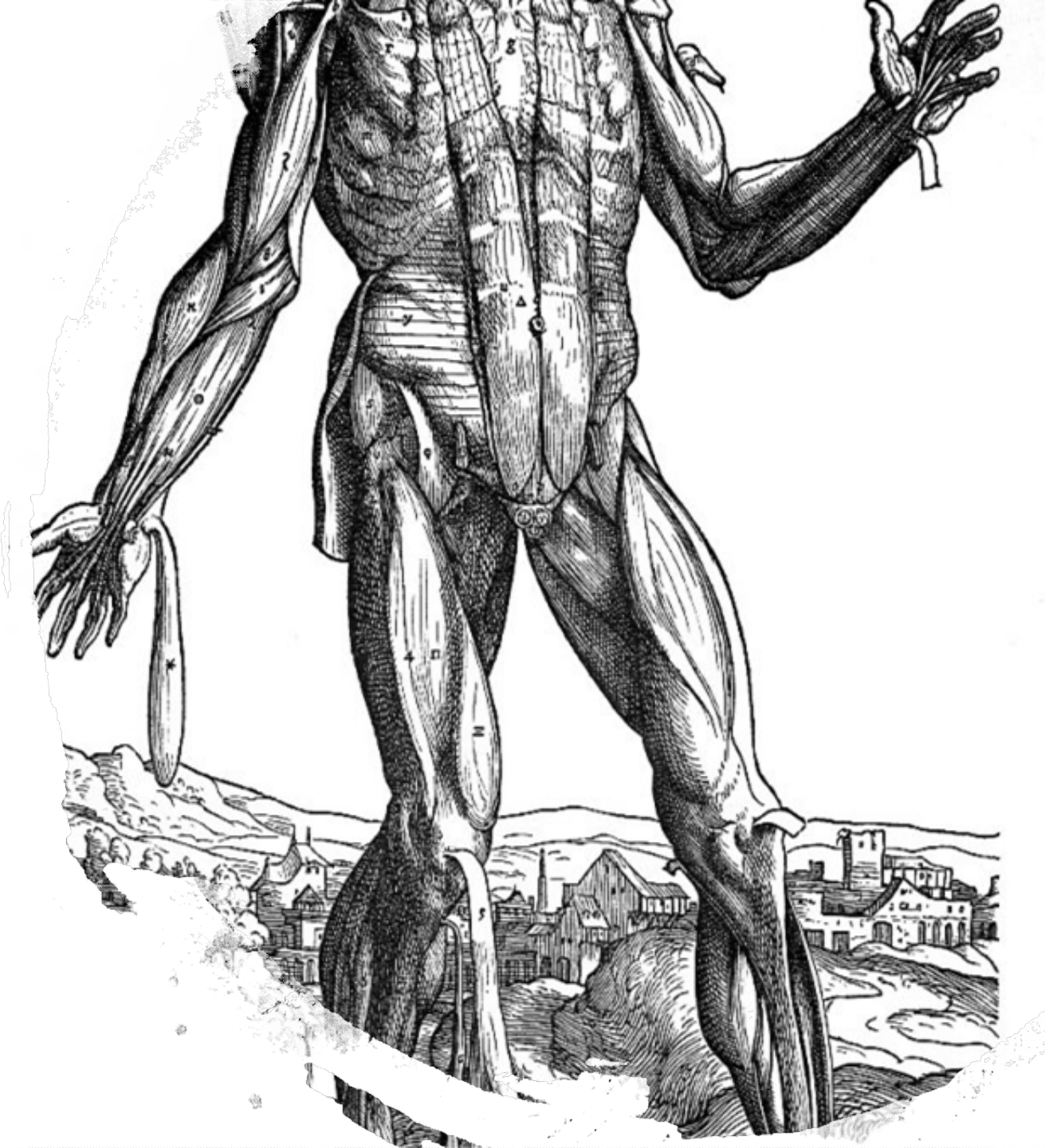
L'anatomie:

Les acteurs principaux:

- Nerf fémoral (ant) (60-70%)
- Nerf sciatique (post) (20-30%)

Les figurants:

- Nerfs obturateurs (5-10%)
- Nerf CLC



Mais si on va plus loin…

- Le nerf fémoral donne les branches:
  - Saphène: participe à l'innervation de la partie médiale du génou, donne dans 50% cas une branche infra patellaires. (>CA)
  - Vaste médial: innerve la partie antéromédiale, peut s'anastomoser avec saphène, et le NO (ant). (>CA)
  - Vaste latéral : portion supérieure antéro latérale du genou (! IM)
  - Vaste intermédiaire : portion antérieure supérieure du genou (! IM)
  - Cutanée médiale : forme le plexus pré-patellaire avec le NO et la branche infra patellaire du saphène

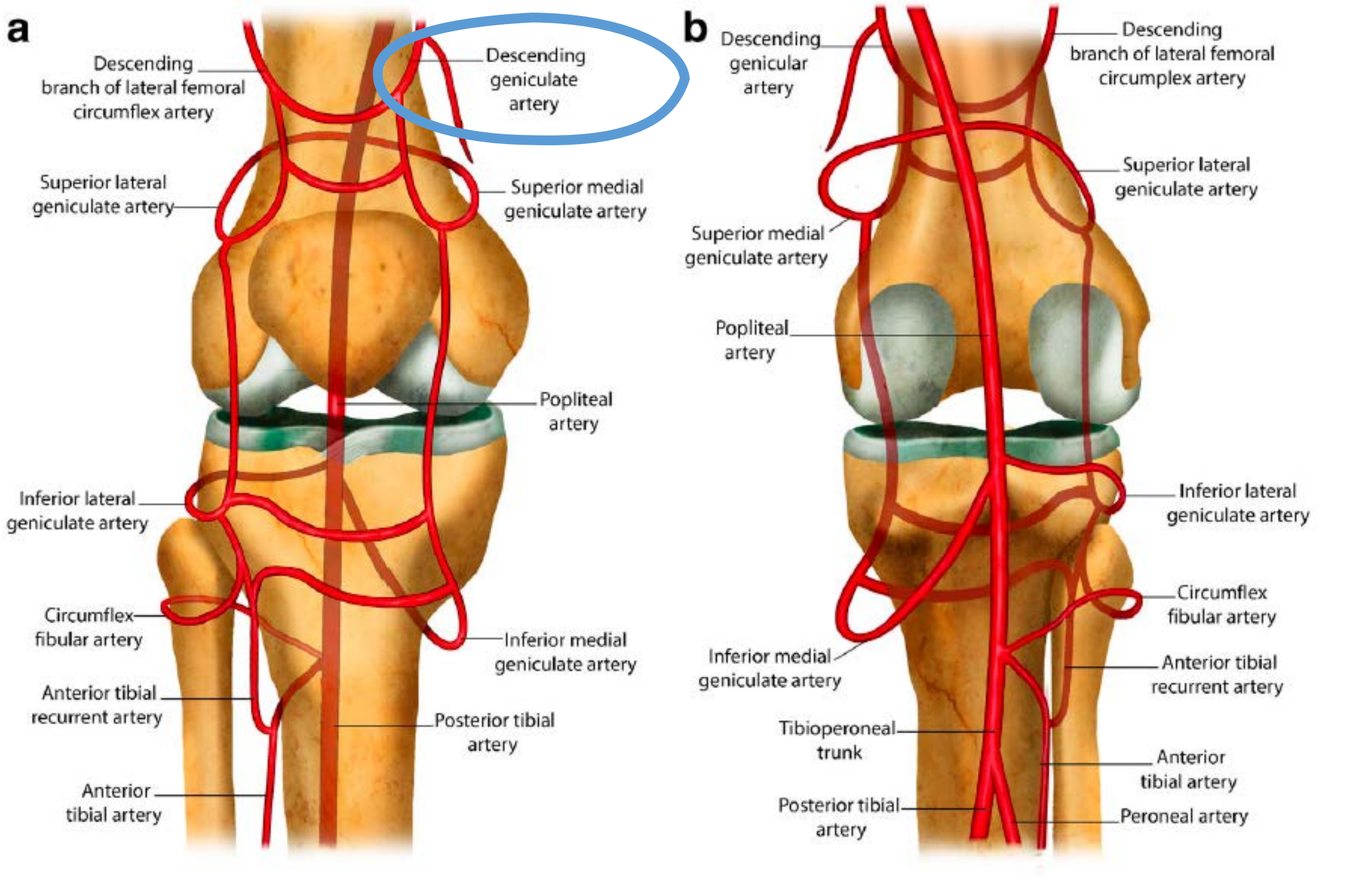
- Le nerf sciatique donne:
  - Le nerf tibial :
    - les nerfs géniculaires supéro et inféro médial et
    - Le nerf géniculaire postérieurs,
    - innerve la partie fémorale du LCA

  - Le nerf fibulaire : 3 branches articulaires:
    - le nerf géniculaire supéro latéral (origine NS) ,
    - le nerf géniculaire infero latéral
    - le nerf géniculaire latéral récurrent (origine post division NS)

- Le nerf obturateur donne:
  - Branche ant (< CA dist): pas de branche articulaire, ma
    innervation variable, participation (inconstante au plex p
    avec NS et CM > fém)

  - Branche post (< CA dist): contribue à l'innervation articulaire postéro-médiale, donne le plexus de Rudinger avec NT et NS. (proximité ++ de l'art poplitée)

- Le nerf cutané latéral de la cuisse
  - Innervation de la partie latérale de la cuisse, dans certains cas jusqu'au genou. Pas de rameau articulaire.

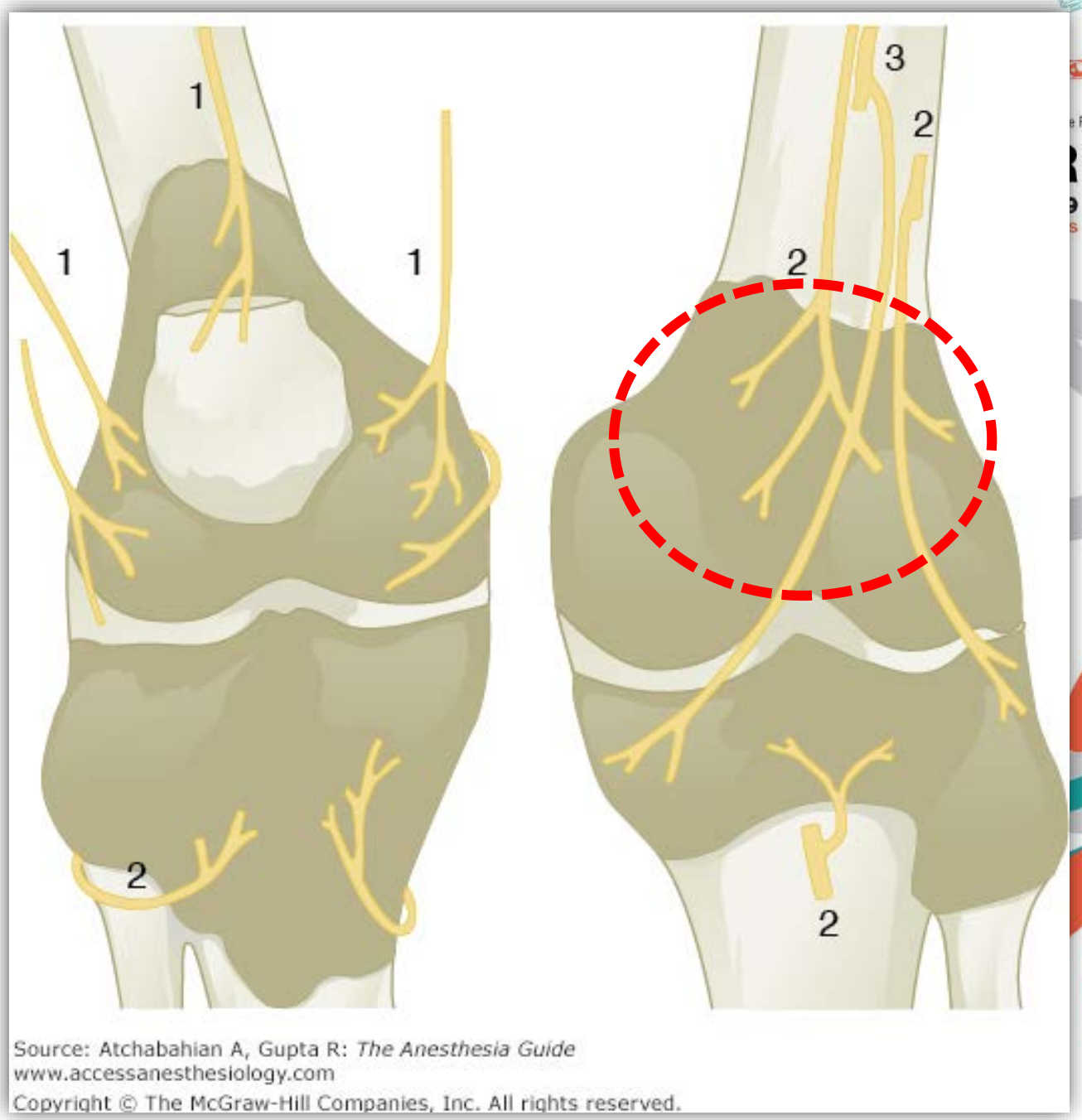

a
Descending branch of lateral femoral circumflex artery
Descending geniculate artery
Superior lateral geniculate artery
Superior medial geniculate artery
Popliteal artery
Inferior lateral geniculate artery
Circumflex fibular artery
Inferior medial geniculate artery
Anterior tibial recurrent artery
Posterior tibial artery
Anterior tibial artery
b
Descending genicular artery
Descending branch of lateral femoral circumplex artery
Superior lateral geniculate artery
Superior medial geniculate artery
Popliteal artery
Inferior lateral geniculate artery
Circumflex fibular artery
Inferior medial geniculate artery
Anterior tibial recurrent artery
Tibioperoneal trunk
Anterior tibial artery
Posterior tibial artery
Peroneal artery

1 = Branches art. fémorales

2= Branches art. sciatiques

3= Contribution du NO (postérieur)

Plexus Poplité



Source: Atchabahian A, Gupta R: *The Anesthesia Guide*
www.accessanesthesiology.com

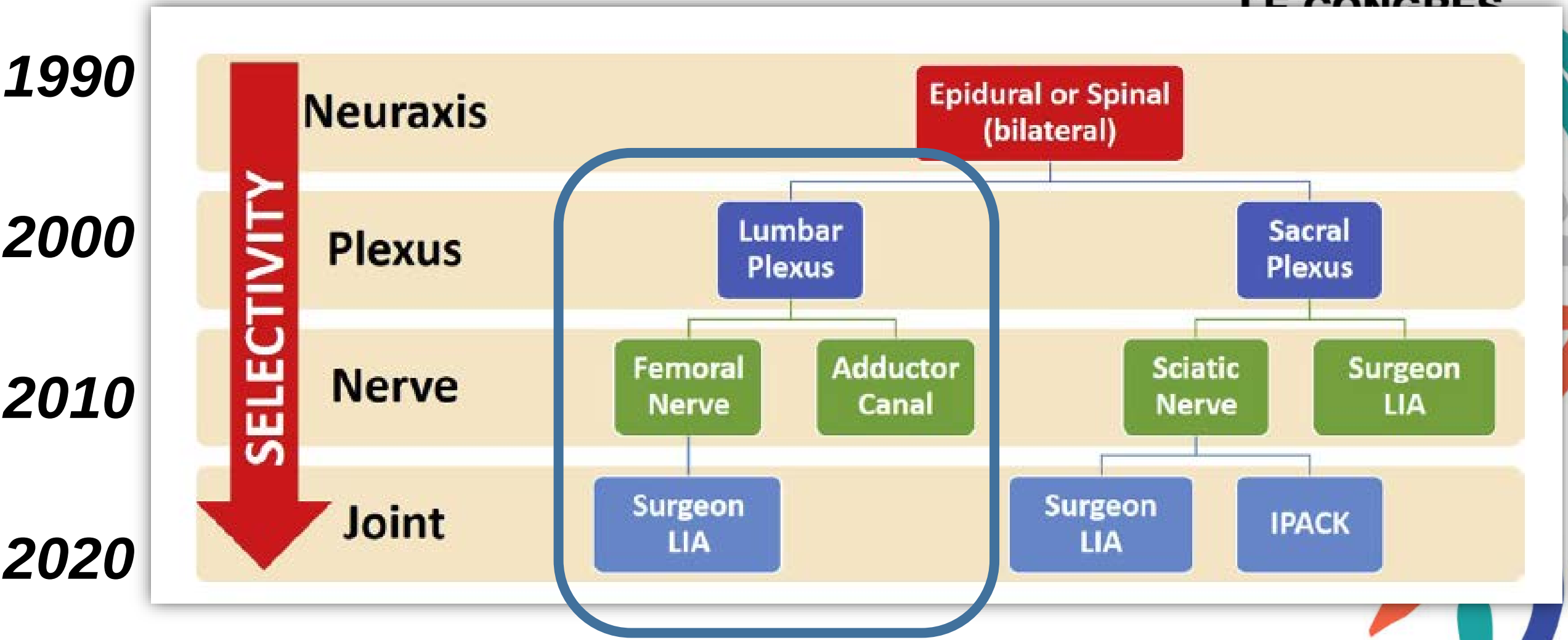
Au niveau antérieur , surtout le nerf fémoral et les nerfs géniculaires issus des branches nerveuses musculaires

Au niveau postérieur, présence d'un plexus poplité issus du nerf sciatique et obturateur.

Et d'autres plexus prépatélaire, de Rutigner, sous sartorial, dont l'origine est variable et inconstante.

ALR et Genou: Choose your weapon

La partie antérieure



B.S. Kandarian et al. / Best Practice & Research Clinical Anaesthesiology 33 (2019) 111–123

La chute du KT fémoral…

World J Orthop. 2018 Oct 18;9(10):198-202. doi: 10.5312/wjo.v9.i10.198. eCollection 2018 Oct 18.

Reducing costly falls after total knee arthroplasty.

Bolarinwa SA[1], Novicoff W[2], Cui Q[2].

834 patients with femoral nerve block and knee immobilizer (FNB + KI).

11 (1.3%) experienced a fall during their hospital stay.

791 patients with adductor canal block.

1 (0.13%) patient fall was recorded within this group. (P = 0.006).

Le nouveau paradigme…

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Infiltration chirurgicale

1- Avant implants : 50 ml
Espace entre coque postérieure et muscles jumeaux

2- Après implants : 50 ml
Graisse de hoffa
Muscles de la patte d'oie
Cul de sac synovial et rampe

3- Fermeture : 50 ml
Sous-cutanée

Cocktail
Bupivacaïne
AINS
Adrénaline
Morphine
Corticoïdes

+/−

Bloc au canal fémoral

(Canal des adducteurs)

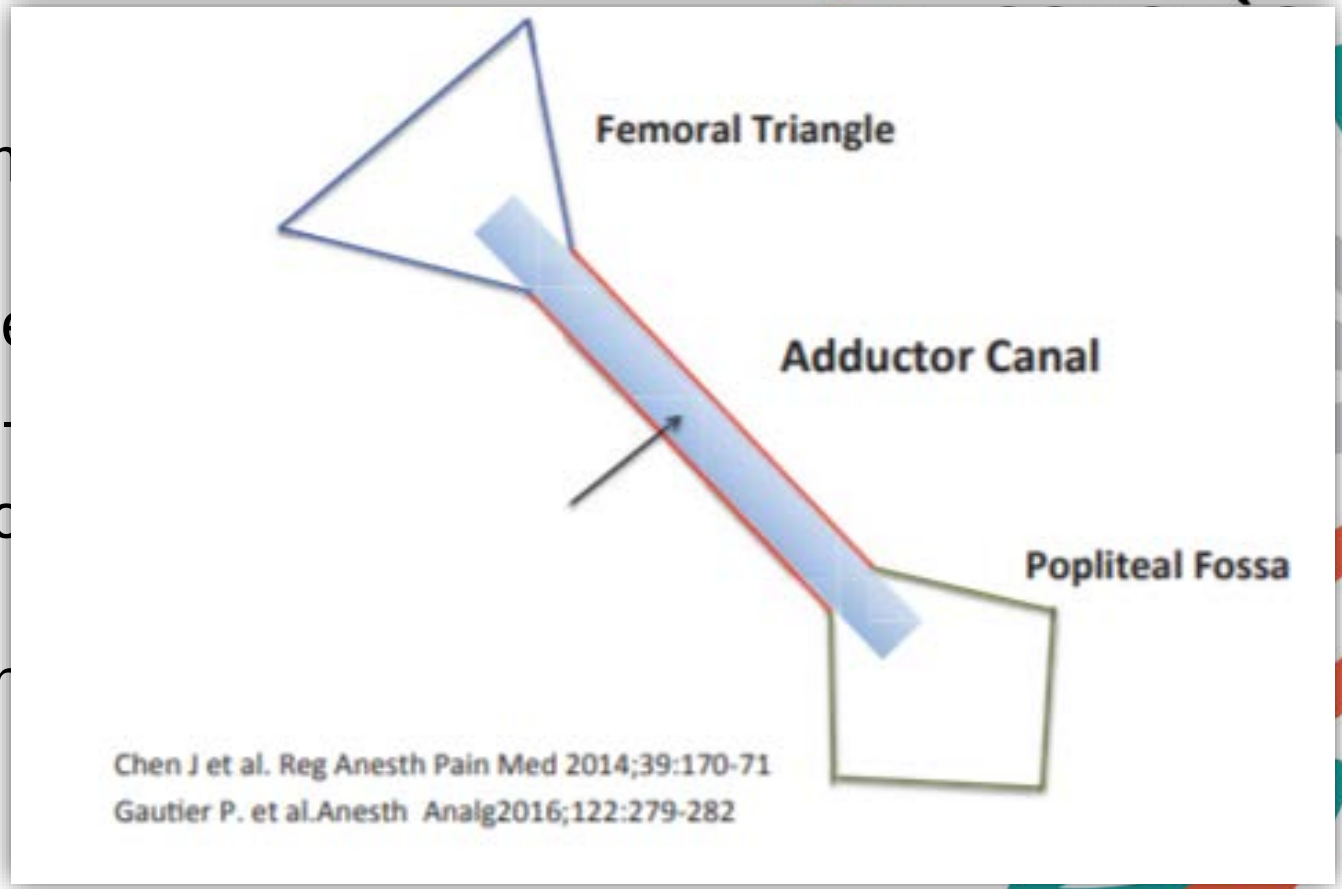
Analgésie combinée : infiltrations…

Concept réhabilitation précoce

Épargne fonction motrice

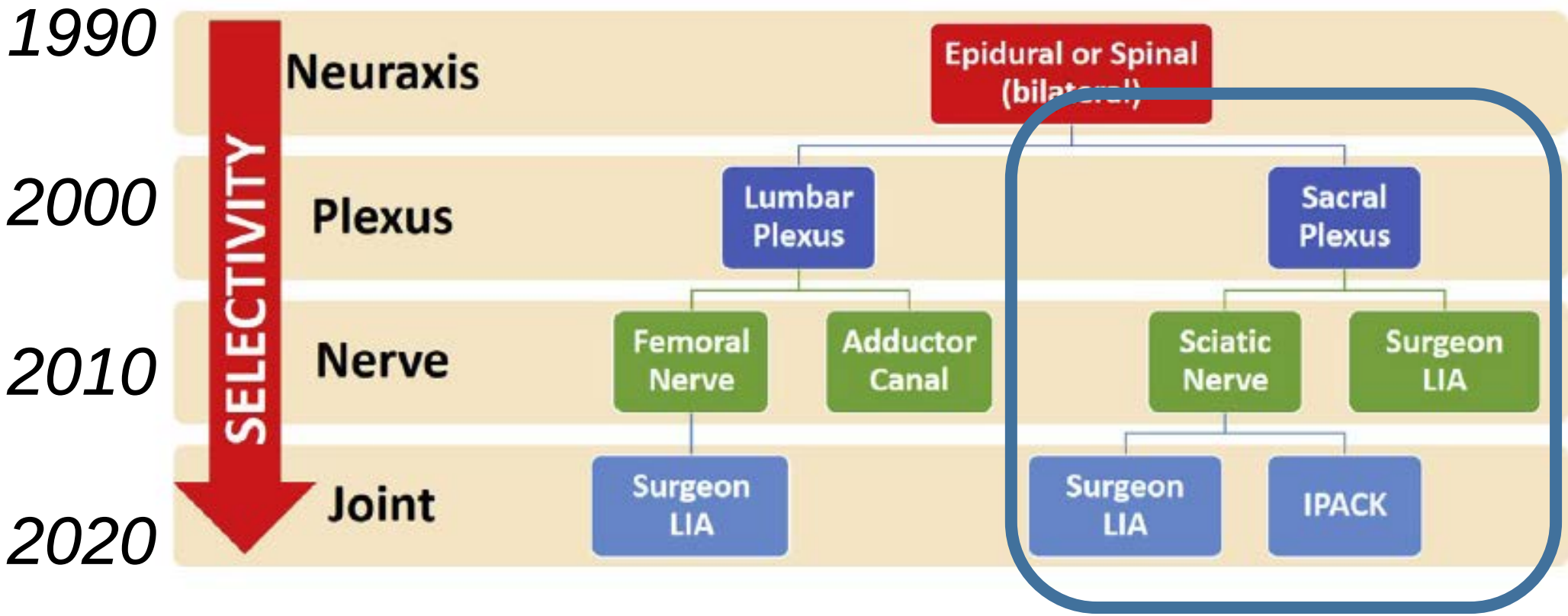
Le bloc du Canal des adducteurs

- C’est un bloc du canal fémoral… à n
  canal des adducteurs anatomique
- Touchant d’une manière constante le
- Avec une diffusion imprévisible volo-
- Vers le nerf fémoral notamment en c
  parésie quadricipitale
- Vers la fosse poplitée notamment en
  rameaux obturateur… et sciatique



- *>> favorise la déambulation*
- *>> analgésie imparfaite >> à combiner …*

La partie postérieure



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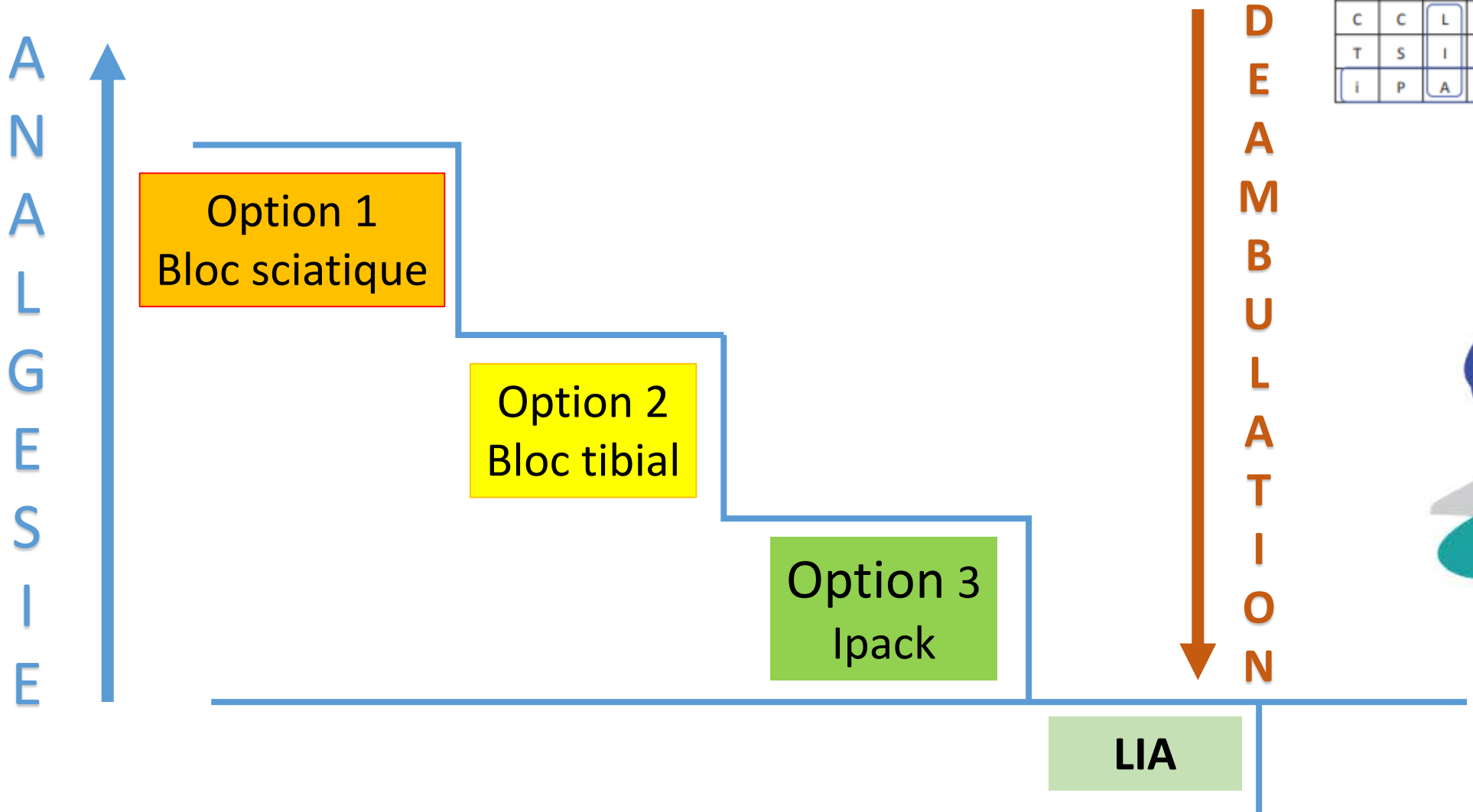
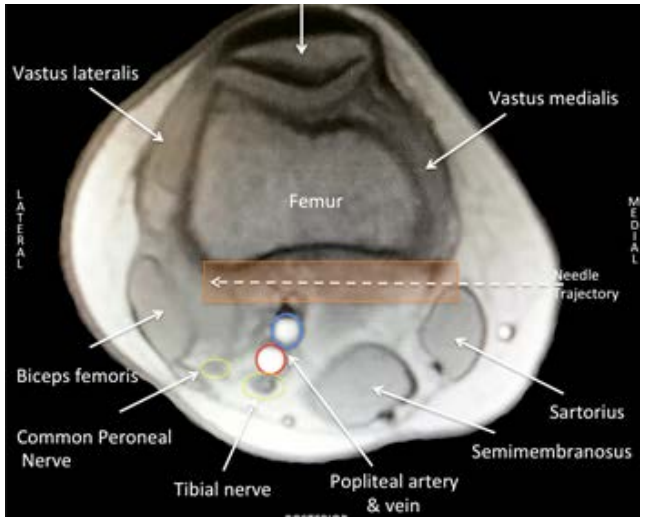
La douleur postérieure du genou

A	D	D	U	C	T	O	R
I	T	Q	J	V	P	T	L
N	P	A	F	V	A	K	B
F	U	N	C	T	I	O	N
E	R	A	D	E	N	L	O
C	C	L	T	H	T	E	R
T	S	I	I	A	T	I	C
I	P	A	C	K	R	O	P





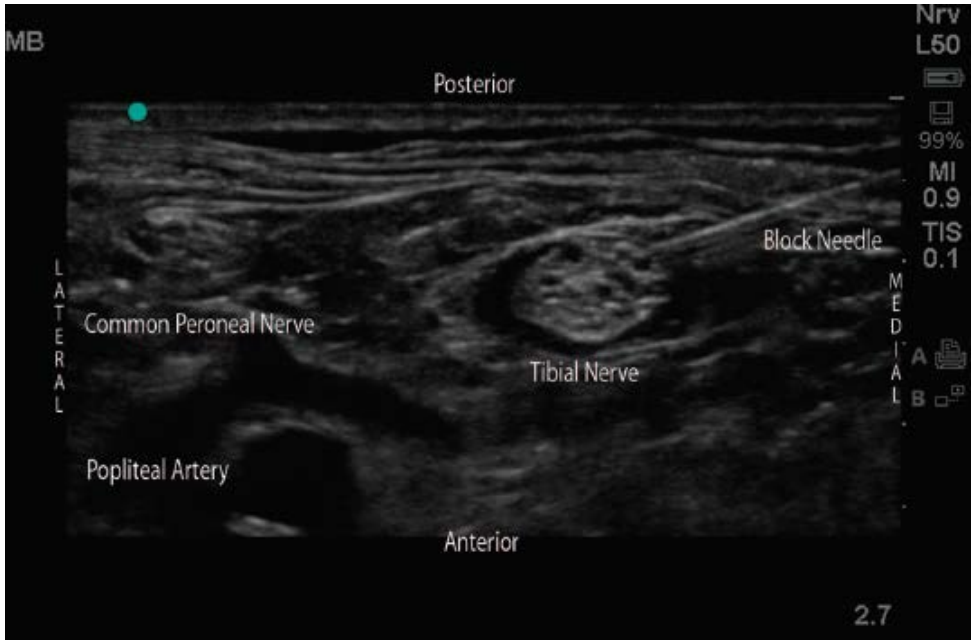
Infiltration between Popliteal Artery and Capsule of Knee (iPACK)

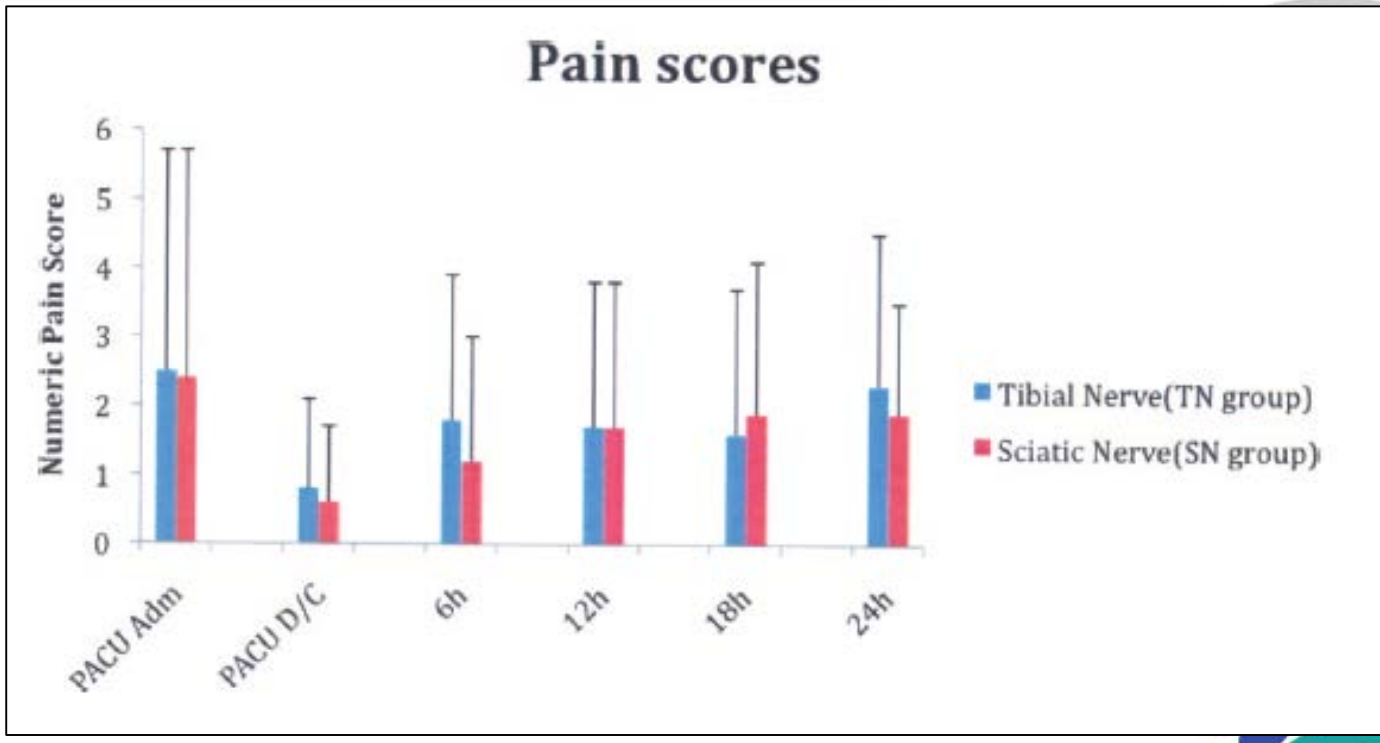
- Concept développé par le Dr. Sinha. en 2012
- Pour contrôler la douleur postérieure du genou
- En épargnant le tronc principal des nerf tibial et fibulaire

- >>> conserver la la fonction sensorielle/proprioceptive et motrice du membre inférieur

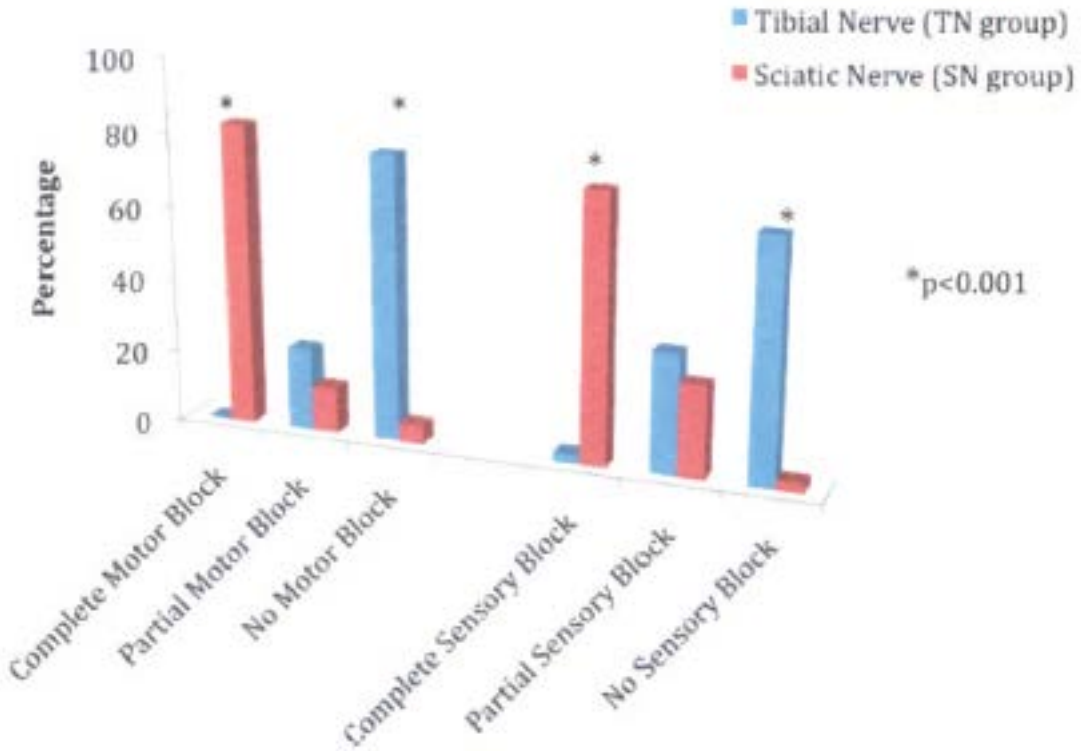
Femoral Nerve Block With Selective Tibial Nerve Block Provides Effective Analgesia Without Foot Drop After Total Knee Arthroplasty: A Prospective, Randomized, Observer-Blinded Study

Sanjay K. Sinha, MB, BS,* Jonathan H. Abrams, MD,* Sivasenthil Arumugam, MB, BS,* John D'Alessio, MD,* David G. Freitas, MD,* John T. Barnett, MD,* and Robert S. Weller, MD†

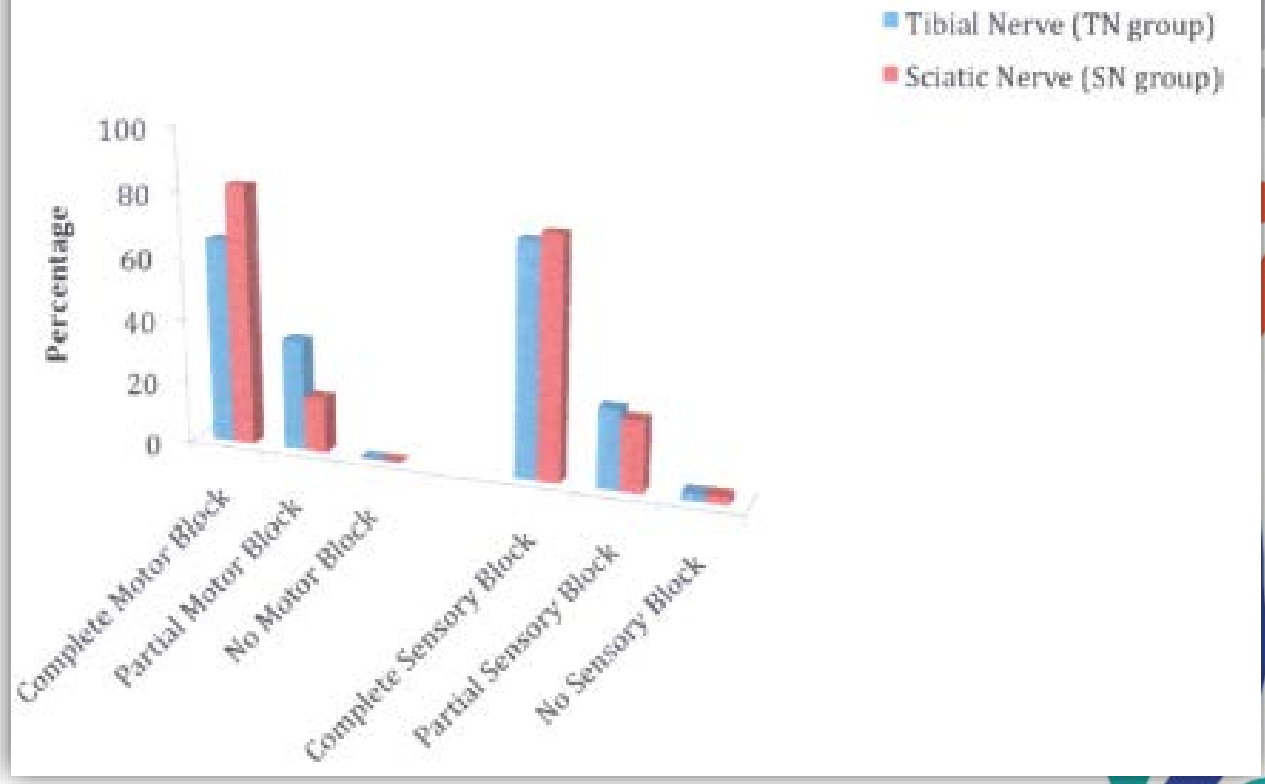




DORSIFLEXION AND SENSATION IN THE PERONEAL NERVE DISTRIBUTION

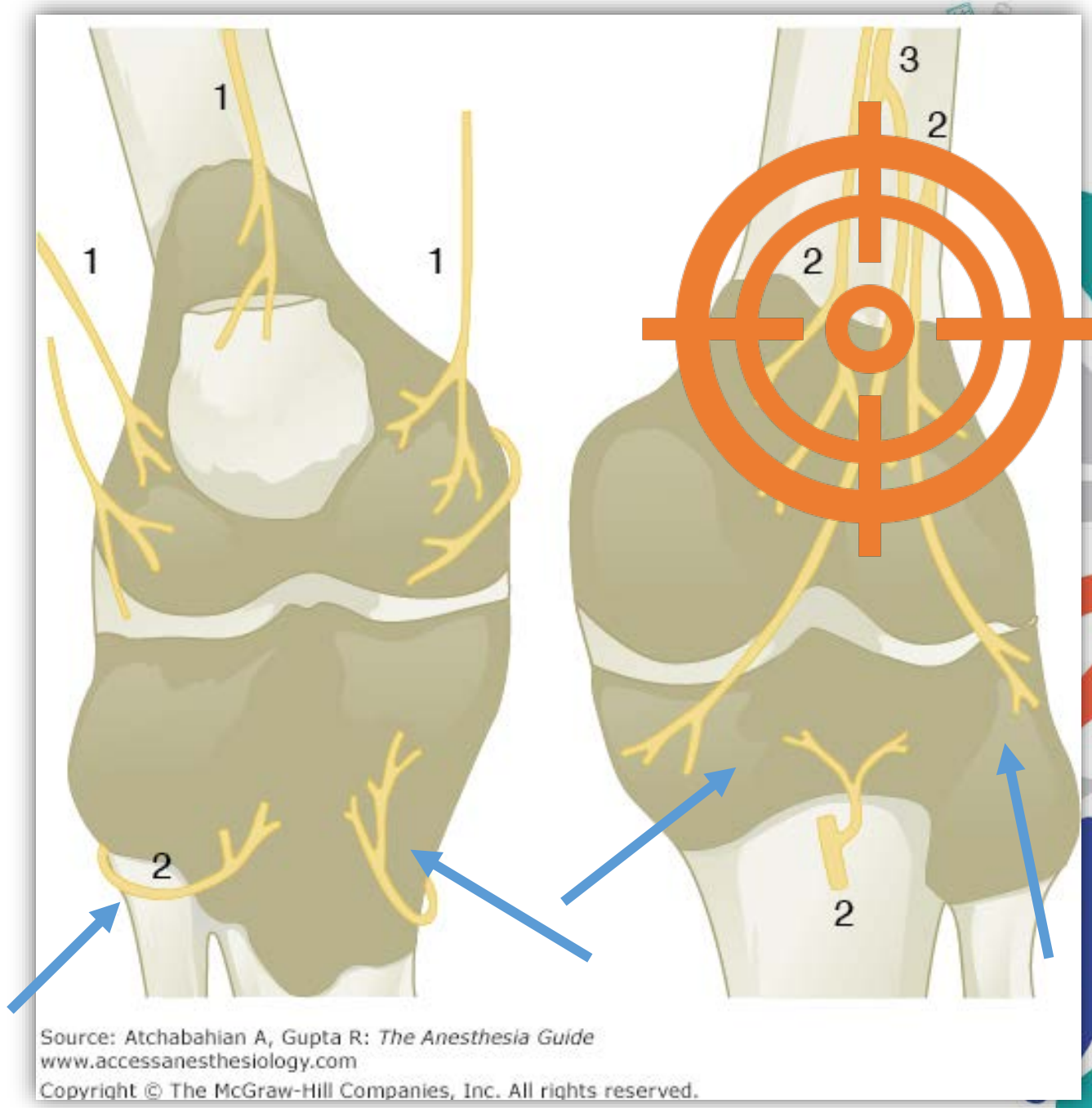


PLANTAR FLEXION AND SENSATION IN THE TIBIAL NERVE DISTRIBUTION



Le concept

- Atteindre les branches distale articulaires
- Nerfs géniculaires provenant
  - du N. Tibial
  - du N. Fibulaire
  - du N. Obturateur (ram. Post)
- 20-30 ml d' AL longue durée peu concentré
- Mais incomplet



A51 **Use of Ultrasound-Guided Popliteal Fossa Infiltration to Control Pain After Total Knee Arthroplasy: A Prospective Randomized Observer-Blinded Study**

S. Sinha, J. Abras, A. Sivasenthil, D. Freitas, J. D'Alessio, J. Barnett, R. Weller, C. Lewis
St Francis Hospital and Medical Center, Hartford, Connecticut; Wake Forest School of Medicine, Winston-Salem, North Carolina; Connecticut Joint
Replacement Institute, Hartford, Connecticut

Spring 2012 Abstract Titles

ASRA 37th Annual Regional Anesthesia Meeting and Workshops

Methods: In this IRB approved study, 14 patients have so far given written informed consent. All patients were premedicated as per our multimodal analgesia regimen (Table 1). A FN catheter was inserted after which patients were positioned prone and either a USG iPACK

Discussion; Preliminary data suggests that USG iPACK provides equivalent analgesia compared to TN block when combined with FN block. This technique maybe an alternative method in controlling posterior knee pain following TKA.

visualize the femoral condyles. The probe was then moved proximally until the condyles disappeared and the shaft of the femur was visible. At this level the needle was inserted in a medial to lateral direction between the popliteal artery and the femur until the needle tip was 2-3 cm beyond the lateral edge of the of the popliteal artery (Fig 2). Thirty milliliters of ropivacaine 0.2% with Epi 1:300K was injected as the needle was gradually withdrawn to infiltrate the tissue interspace

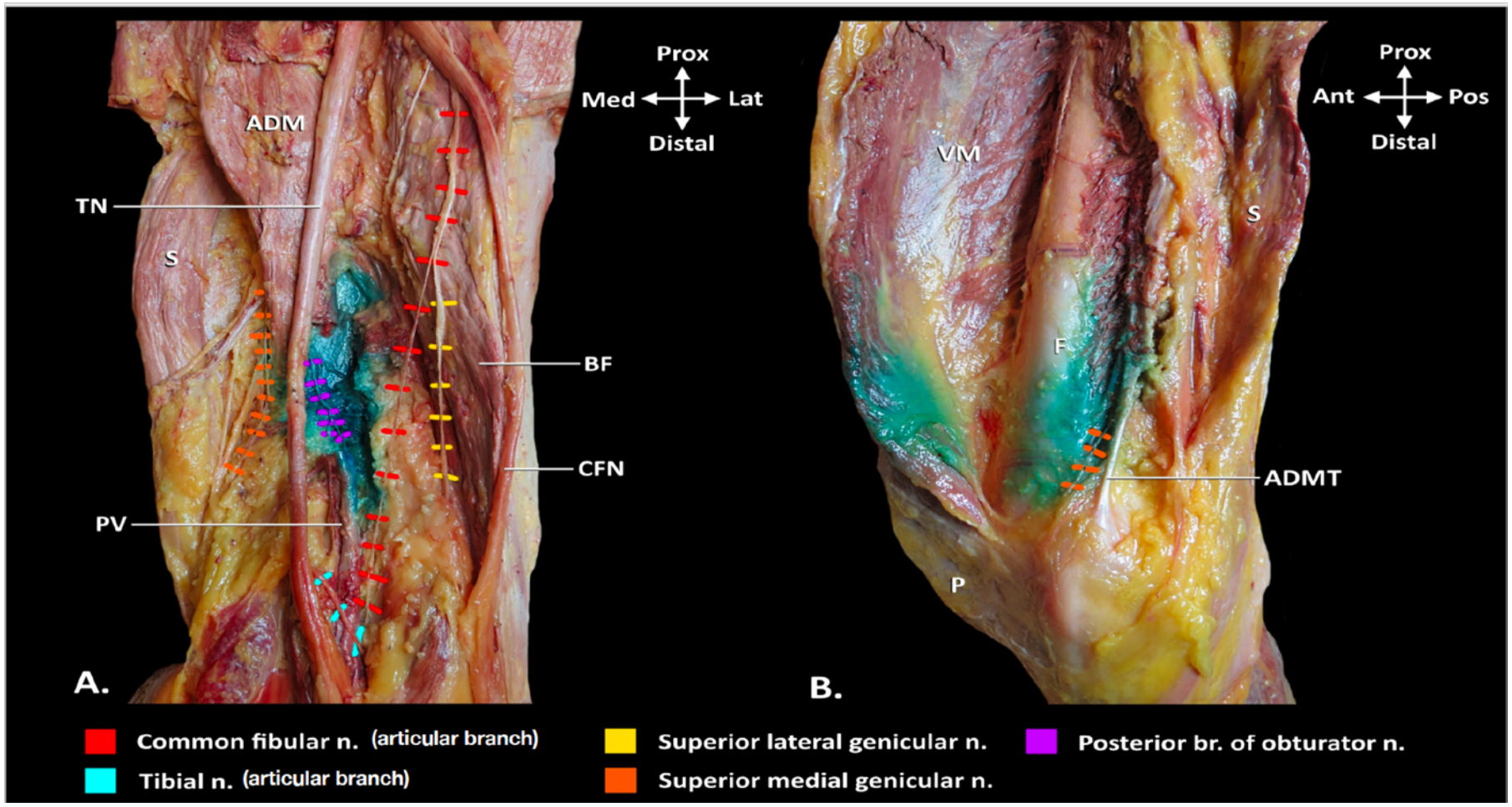
Evaluation of iPACK Block - A Cadaveric Study

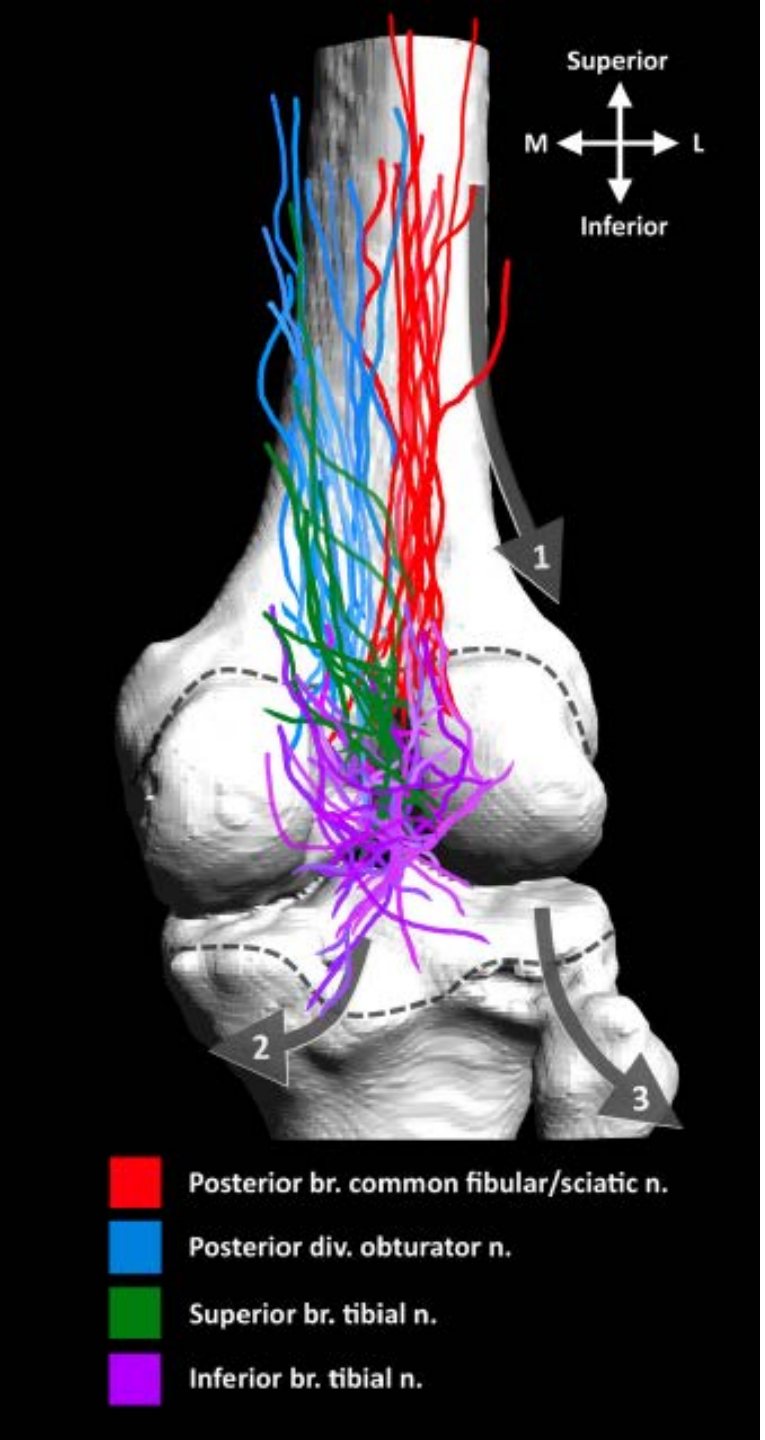
Laura Girón-Arango, MD*, John Tran, HBSc‡, Sanjay Sinha, MD†, Philip Peng, MBBS, FRCPC*, Anne Agur, B.Sc. O.T; M.Sc., Ph.D‡, Vincent Chan, MD, FRCPC*

*Department of Anesthesia, Toronto Western Hospital, University of Toronto

‡Division of Anatomy, Department of Surgery, University of Toronto

† Department of Anesthesia, Saint Francis Hospital and Medical Center, University of Connecticut





Argumentaire

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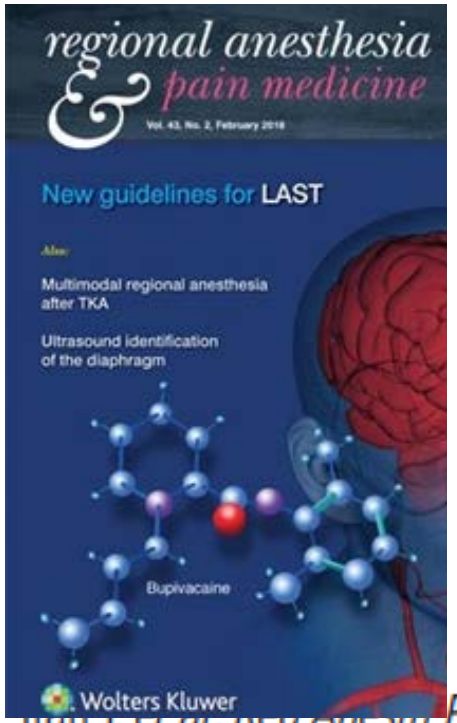
- Concept original, bien supporté anatomiquement
- Concept multimodal car incomplet
- Argument sécuritaire comparé aux infiltrations



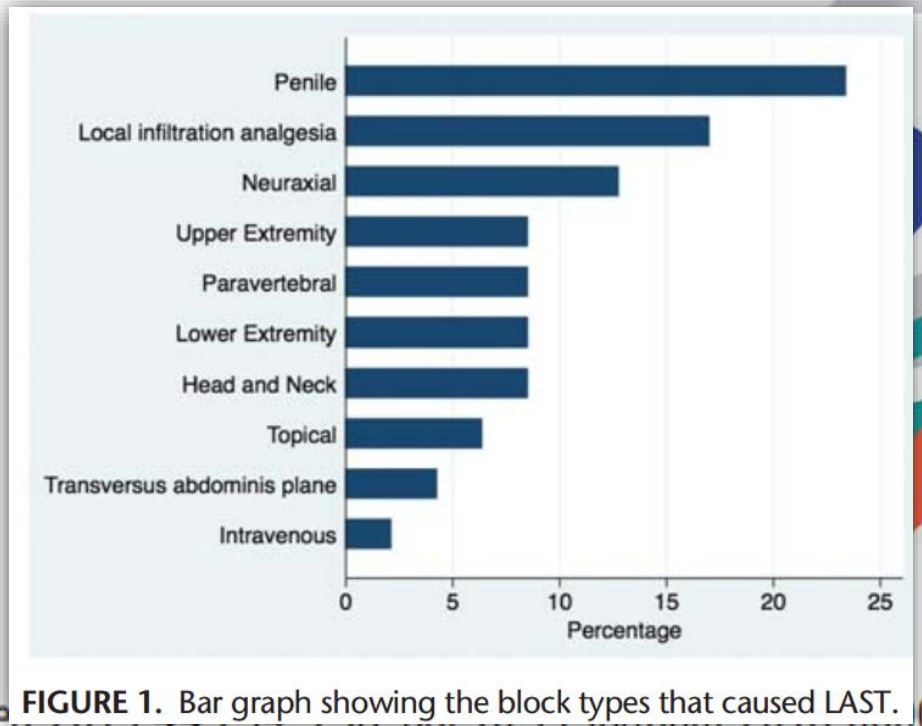
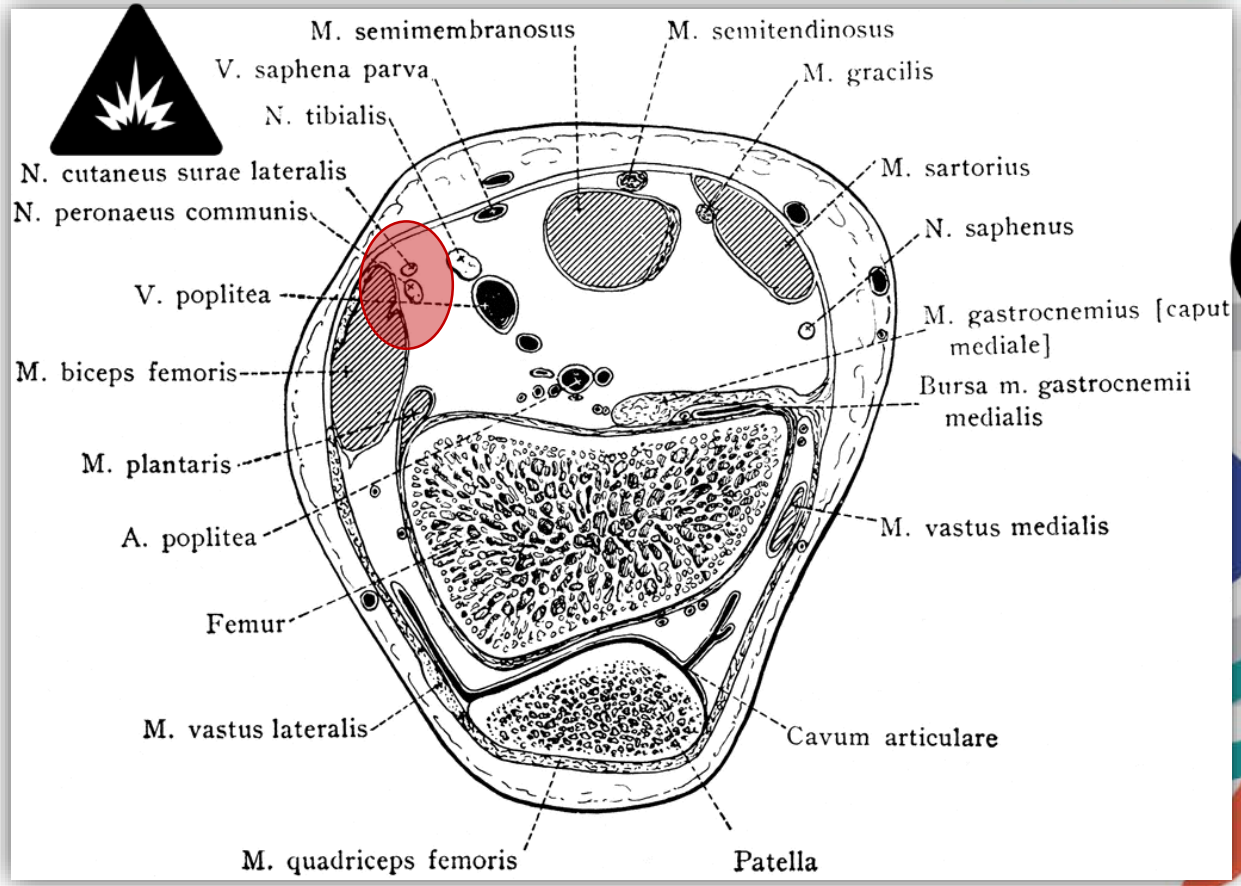


FIGURE 1. Bar graph showing the block types that caused LAST.

La procédure

- Sonde convexe BF
- Dans creux poplité
- Niveau Jonction Condyles/diaphyse fémorale
- Visualise artère poplitée
- Ponction médiale
- Injection entre le fémur et l'artère



http://etc.usf.edu/clipart/

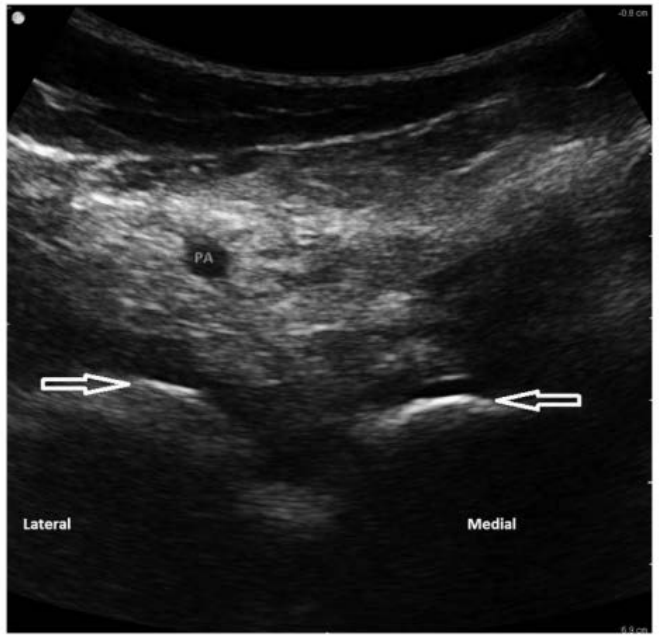


Figure 1. Infiltration between the popliteal artery (PA) and the capsule of the knee block image shows the orientation and anatomy of the popliteal fossa. The PA and the femoral condyles (white arrows) are visible.

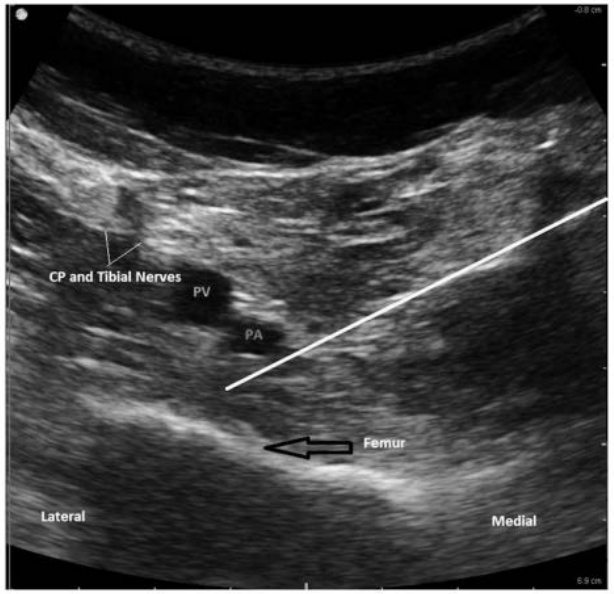


Figure 2. Infiltration between the popliteal artery (PA) and the capsule of the knee block image proximally aligned to visualize the shaft of the femur (black arrow) with the common peroneal (CP) and tibial nerves. The popliteal vein (PV) and PA are both visible, and the stylized needle (white line) identifies the site for local anesthetic deposition.

La procédure:

Les données actuelles:

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ACBc + LIA Vs ACBc + iPACK N: 80

Korean Journal of Anesthesiology 2019 June 72(3): 238-244

ACB + LIA Vs ACB + iPACK + mPAI N: 86

www.anesthesia-analgesia.org August 2019 • Volume 129 • Number 2

ACBc Vs ACBc + iPACK N: 120

European Journal of Orthopaedic Surgery & Traumatology (2018) 28:1391–1395

FNBc Vs FNBc + iPACK Vs ACBc + iPACK N: 106

Ochsner Journal 17:233–238, 2017

Novel Regional Techniques for Total Knee Arthroplasty Promote Reduced Hospital Length of Stay: An Analysis of 106 Patients

Salman Thobhani, MD,[1] Lauren Scalercio, MD,[1] Clint E. Elliott, MD,[1,2] Bobby D. Nossaman, MD,[1,2] Leslie C. Thomas, MD,[1] Dane Yuratich, MD,[1] Kim Bland, MD,[1] Kristie Osteen, MD,[1,2] Matthew E. Patterson, MD[1,2]

Background: Novel regional techniques, including the adductor canal block (ACB) and the local anesthetic infil n between the popliteal artery and capsule of the knee (IPACK) block, provide an alternative approach for controll ving total knee arthroplasty (TKA). This study compared 3 regional techniques (femoral nerve catheter [FNC ck with IPACK, and ACB with IPACK) on pain scores, opioid consumption, performance during p gth of stay in patients undergoing TKA.

Methods: All patients had a continuous perineural infusion, either FNC b groups also received a single injection 30-mL IPACK block of 0.25% ropivac were recorded at postanesthesia care unit discharge and again at 8-hour int rmance was measured on postoperative days (POD) 1 and 2, and hospital lengt

Results: We found no significant differences in the 3 line patient demographics. Although we observed no differences in pain scores between the 3 g mption was significantly reduced in the FNC with IPACK group. Physical therapy performance was significan on POD 1 in the ACB with IPACK group compared to the other 2 groups. Hospital length of stay was significantly sh er in the ACB with IPACK group.

Conclusion: This study demonstrated that an IPACK block reduced opioid consumption by providing effective supplemental analgesia following TKA compared to the FNC-only technique. ACB with IPACK provided equivalent analgesia and improved physical therapy performance, allowing earlier hospital discharge.

Rétrospectif

iPACK targets
superior medial, superior lateral, and middle posterior genicular nerves
i.e. posterior capsule of the knee joint

Ochsner Journal 17:233–238, 2017

Table 2. Visual Analog Scale Pain Scores Following Primary Unilateral Total Knee Arthroplasty (n=106)

Postoperative Time Point	FNC n=61	FNC + IPACK n=23	ACB + IPACK n=22	*P* Value
PACU discharge	1 (0-3)	2 (0-2)	2 (2-4)	0.1361
8 hours	2 (0-5)	4 (0-6)	4 (0-6)	0.5169
16 hours	2 (0-6)	2 (0-5)	3 (0-4)	0.7178
24 hours	4 (1-6)	4 (0-7)	3 (0-5)	0.3956

Table 3. Opioid Consumption Following Primary Unilateral Total Knee Arthroplasty (n=106)

Postoperative Time Point	FNC n=61	FNC + IPACK n=23	ACB + IPACK n=22	*P* Value
PACU discharge	30 (15-45)	15 (15-27)	30 (15-40)	0.0077
8 hours	38 (23-52)	19 (15-30)	41 (30-79)	0.0001
16 hours	45 (33-92)	30 (15-50)	59 (43-90)	0.0004
24 hours	66 (41-105)	45 (30-68)	82 (66-118)	0.0002
32 hours	87 (59-123)	57 (45-83)	109 (68-152)	0.0018
40 hours	119 (79-145)	75 (45-124)	134 (81-172)	0.0133
48 hours	146 (98-164)	93 (72-124)	150 (107-186)	0.0101

Table 4. Gait Distance Traveled During Physical Therapy Following Primary Unilateral Total Knee Arthroplasty (n=106)

Postoperative Time Point	FNC n=61	FNC + IPACK n=23	ACB + IPACK n=22	*P* Value
POD 1 morning	4 (0-12)	4 (1-11)	14 (6-44)	0.0004
POD 1 afternoon	20 (2-25)	25 (9-35)	42 (22-106)	<0.0001
POD 2 morning	60 (18-110)	60 (25-80)	100 (30-150)	0.1813
POD 2 afternoon	100 (60-150)	100 (60-135)	57 (40-115)	0.3913

Anesth Analg. 2018 Sep 12. doi: 10.1213/ANE.0000000000003794. [Epub ahead of print]

Addition of Infiltration Between the Popliteal Artery and the Capsule of the Posterior Knee and Adductor Canal Block to Periarticular Injection Enhances Postoperative Pain Control in Total Knee Arthroplasty: A Randomized Controlled Trial.

Kim DH[1], Beathe JC[1], Lin Y[1], YaDeau JT[1], Maalouf DB[1], Goytizolo E[1], Garnett C[1], Ranawat AS[2], Su EP[2], Mayman DJ[2], Memtsoudis SG[1].

Table 3. Opioid Use: Opioid Consumption and Rescue Analgesia

Table 2. Pain Assessment: NRS Pain Scores and PainOUT Questionnaire

		PAI		IPACK/ACB mPAI	Difference in Means	
		Mean ± SD		Mean ± SD	(95% CI)	*P*
Postoperative NRS pain scores						
NRS pain scores at rest						
POD 0		3.5 ± 2.4	43	0.8 ± 1.1	−2.7 (−3.5 to −1.9)	<.001
POD 1		3.4 ± 2.1	43	1.2 ± 1.6	−2.2 (−3.0 to −1.4)	<.001
POD 2	36	4.1 ± 2.1	33	3.3 ± 2.0	−0.8 (−1.7 to 0.2)	.104
NRS pain scores with ambulation						
POD 0	43	5.2 ± 2.1	43	1.7 ± 1.6	−3.5 (−4.3 to −2.7)	<.001
POD 1	43	5.0 ± 1.7	43	1.7 ± 1.4	−3.3 (−4.0 to −2.7)	<.001
POD 2	36	5.5 ± 1.9	33	4.5 ± 1.9	−1.0 (−1.9 to −0.1)	.033
NRS pain scores after physical therapy						
POD 0	43	3.9 ± 1.9	42	1.9 ± 1.8	−2.0 (−3.0 to −1.0)	<.001
POD 1 visit 1	42	3.2 ± 2.4	43	1.4 ± 1.5	−1.8 (−2.6 to −1.0)	<.001
POD 1 visit 2	32	3.1 ± 2.1	34	2.6 ± 1.9	−0.6 (−1.5 to 0.4)	.227
POD 2 visit 1	31	3.6 ± 2.4	29	3.1 ± 2.2	−0.2 (−1.4 to 0.9)	.671

RCT prospectif

Comparison of adductor canal block and IPACK block (interspace between the popliteal artery and the capsule of the posterior knee) with adductor canal block alone after total knee arthroplasty: a prospective control trial on pain and knee function in imm… postoperative period

European Journal of Orthopaedic Surgery & Traumatol…

S. R. Sankineani[1] · A. R. C. Reddy[2] · Krishna Kiran Eachempati[3] · Ajit … Reddy[1]

Prospectif non randomisé

ACB + IPACK (Group 1, n = 60),
Vs
ACB alone (Group 2, n = 60)

improved pain ma…
in the i…
postoper…
without …ting
the motor function

Tabl… postoperative VAS scores and distance …e groups

	Adductor canal block + IPACK (Group 1, $n=60$)	Adductor canal (Group 2, $n=60$)	P value
VAS 8 h PO	1.4333 ± 0.6474	2.9167 ± 0.64550	< 0.001
VAS POD 1	2.05 ± 0.4323	3.1833 ± 0.72467	< 0.001
VAS POD 2	2.55 ± 0.7274	3.4500 ± 0.67460	< 0.001
ROM (°)	71.8333 ± 9.52	62.2500 ± 8.25	< 0.001
Distance walked day 3 (no. of steps)	8.51 ± 1.85	7.1333 ± 1.434	< 0.001

Implementation of the IPACK (Infiltration between the Popliteal Artery and Capsule of the Knee) block into a multimodal analgesic pathway for total knee replacement

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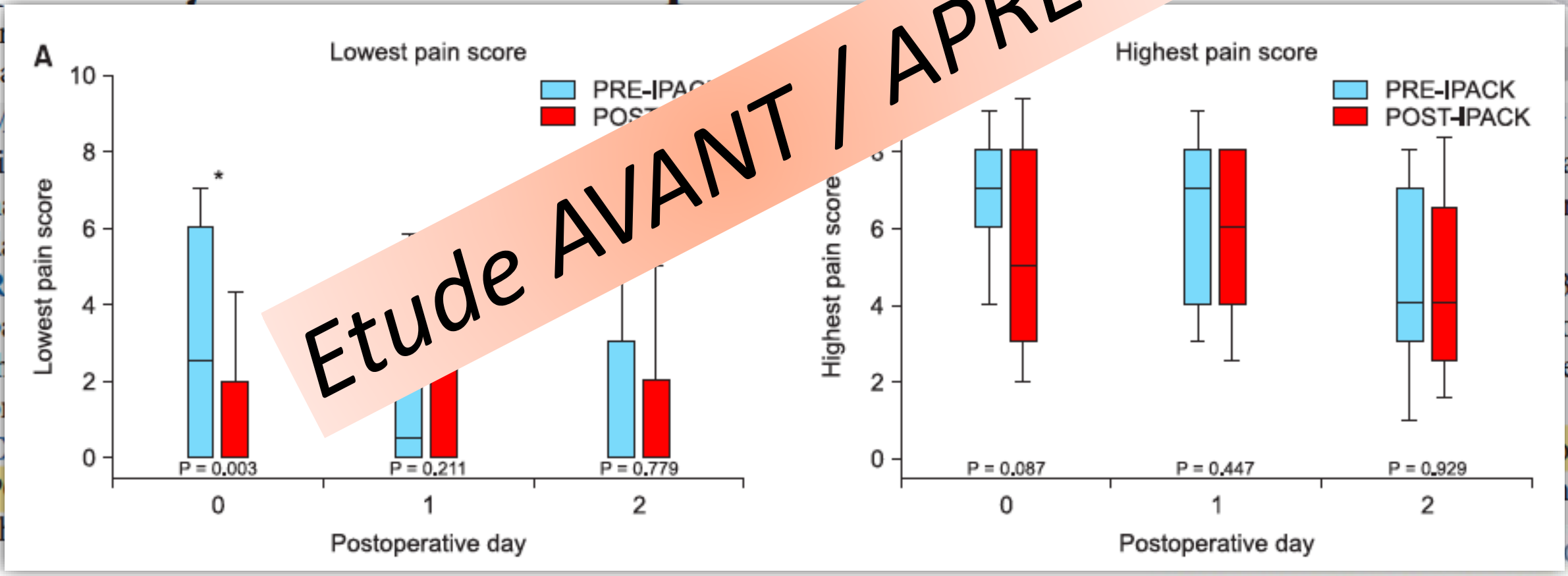
Etude AVANT / APRES



L'iPACK et les autres…

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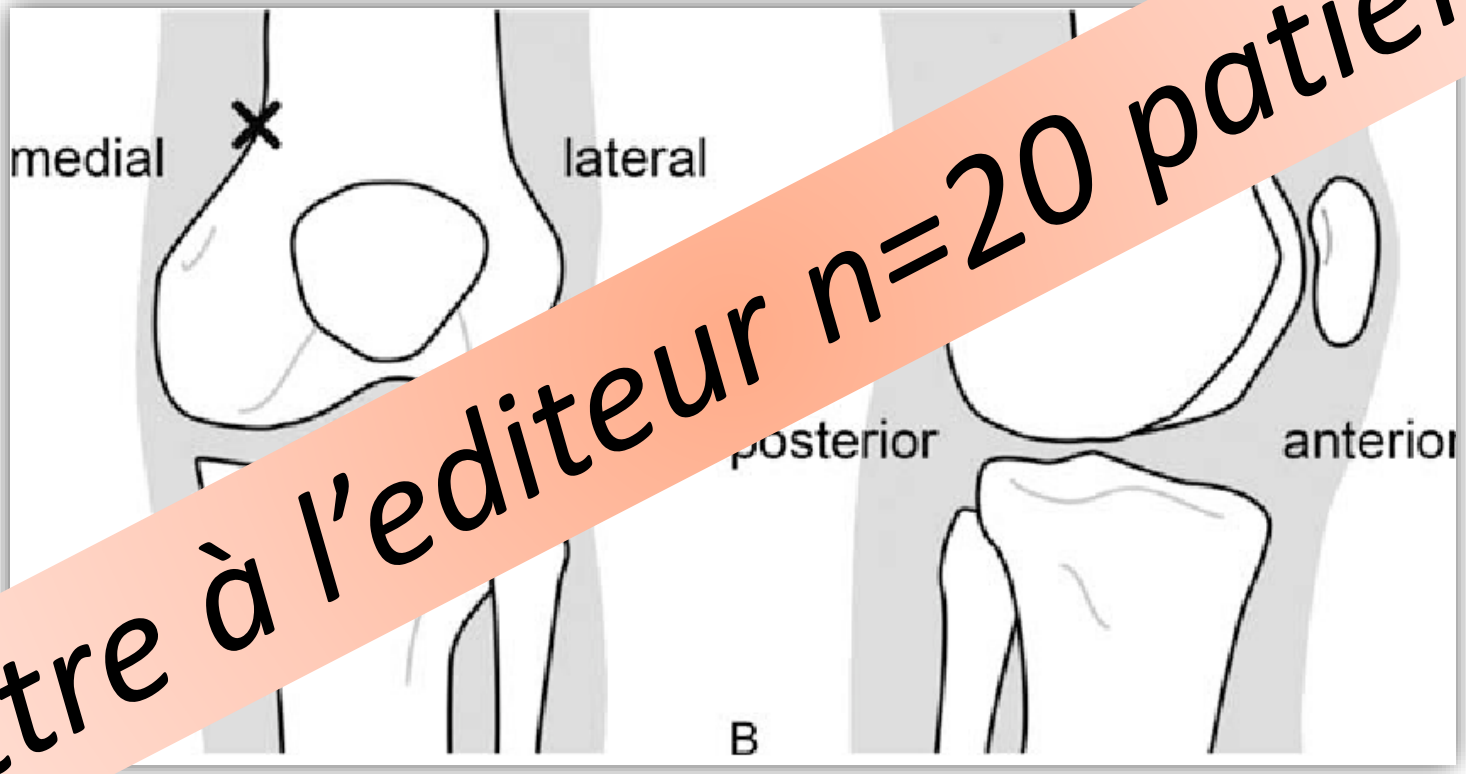
The SPANK Block: A Selective Sensory, Single-Injection Solution for Posterior Pain After Total Knee Arthroplasty

Kardash, Kenneth J. MD; Noel, Geoffroy P. PhD



Lettre à l'editeur n=20 patients

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Hybrid Blocks for Total Knee Arthroplasty: A Technical Description

The Clinical Journal of Pain: March 2018 -

Johnston DF, Sondekoppam RV, Uppal V, Howard JL, Ganapathy S.

Canal fémoral
Plexus poplité (≈IPACK)
Nerf cutané latéral de la cuisse

Hybrid Block Injection Point	Nerves Targeted
Adductor canal and surrounding area	Saphenous nerve
	Nerve to vastus medialis with medial
Popliteal plexus	Posterior obturator nerve
	Posterior knee articular branches of tibial nerve including posterior, superior and inferior medial genicular nerves
Lacuna musculorum	Anterior and posterior branches of lateral femoral cutaneous nerve

resolution. The hybrid block represents a practical balance of analgesia with maintained motor function.

In our experience thus far of over 200 patients, the hybrid block is a feasible technique for patients undergoing TKA. Despite requiring 3 separate injections, patients tolerate the technique very well requiring only light sedation.

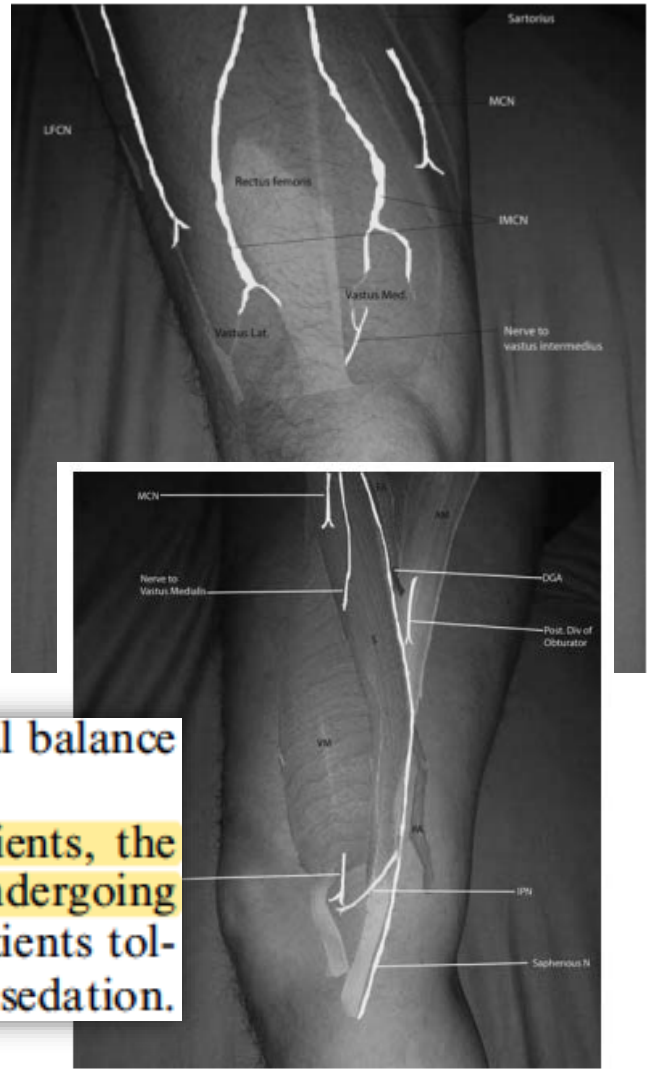

FIGURE 2. Nerve supply to the medial aspect of the knee and surrounding cutaneous innervation. AM indicates adductor magnus; DGA, descending geniculate artery; FA, femoral artery; IPN, infra-patellar branch of saphenous nerve; MCN, medial cutaneous nerve of the thigh; MRN, medial retinacular nerve; PA, popliteal artery; S, sartorius muscle; VM, vastus medialis.

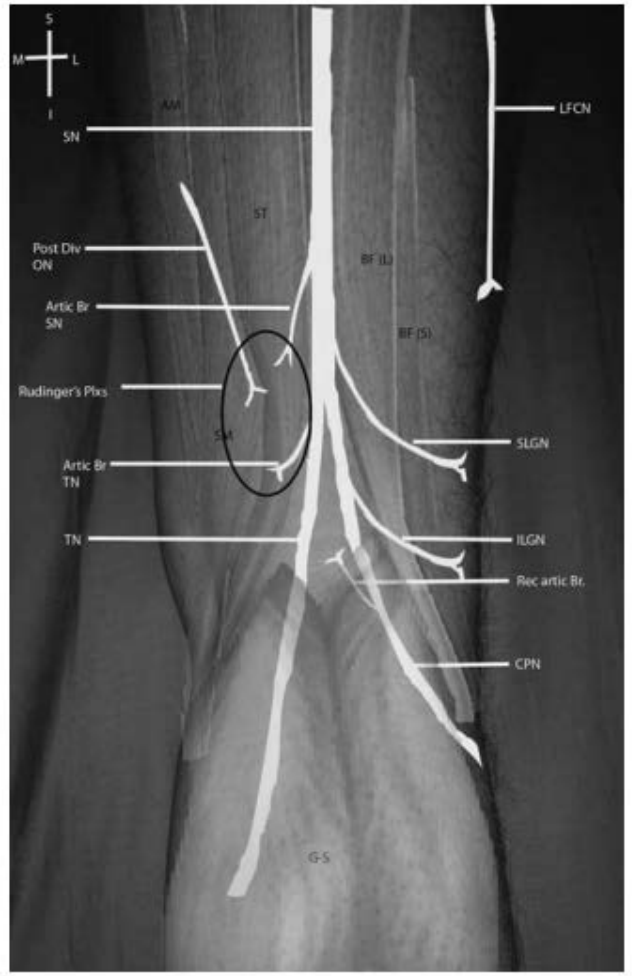

FIGURE 3. Nerve supply to the posterior aspect of the knee and surrounding cutaneous innervation. AM indicates adductor magnus; Artic Br, articular branch; BF(L), biceps femoris long head; BF(S), biceps femoris short head; ILGN, inferior lateral genicular nerve; LFCN, lateral femoral cutaneous nerve; Post Div ON, posterior division of obturator nerve; Rec Artic Br, recurrent articular branch of common peroneal nerve. SLGN, superior lateral genicular nerve; SM, semimembranosis; SN, sciatic nerve; ST, semitendinosis; TN, tibial nerve.

J Bone Joint Surg Am. 2017 Aug 2;99(15):1274-1281. doi: 10.2106/JBJS.16.01266.

Ultrasound-Guided Motor-Sparing Knee Blocks for Postoperative Analgesia Following Total Knee Arthroplasty: A Randomized Blinded Study.

Sogbein OA[1], Sondekoppam RV, Bryant D, Johnston DF, Vasarhelyi EM, MacDonald S, Lanting B, Ganapathy S, Howard JL.

Methods: We randomized 82 patients scheduled for elective TKA to receive either the preoperative motor-sparing block (0.5% ropivacaine, 2 or intraoperative periarticular infiltration (0.3% ro of ketorolac). For the motor-sparing block, we m h a lateral femoral cutaneous nerve block and posterior knee infiltration. The patients, surgeons, anesthetists administering the blocks, and outcome assessors all remained blinded to group allocation. Our primary outcome was duration of analgesia (time to first rescue analgesia). Secondary outcomes included quadriceps strength, function, side effects, satisfaction, and length of hospital stay.

Results: The duration of analgesia was significantly longer (mean difference, 8.8 hours [95% confidence interval = 3.98 to 13.62], $p < 0.01$) for the motor-sparing-block group (mean [and standard error], 18.1 ± 1.7 hours) compared with the periarticular infiltration group (mean, 9.25 ± 1.7 hours). The infiltration group had significantly higher scores for pain at rest for the first 2 postoperative hours and for pain with knee movement at 2 and 4 hours. There were no significant differences between groups with regard to any other secondary outcomes.

Conclusions: In patients undergoing a TKA, a motor-sparing block provides longer analgesia than periarticular infiltration with retention of quadriceps muscle strength, function, patient satisfaction, and a short hospital stay.

LIA Vs CA + CLC + iPACK

Posterior pericapsular injection: An 8-cm block 18-gauge needle was inserted near the medial femoral epicondyle (10 cm from the joint line) under ultrasound guidance. At this site, 20 mL of the study drug was injected between the bone and popliteal artery.

» = iPACK

J Bone Joint Surg Am. 2017 Aug 2;99(15):1274-1281. doi: 10.2106/JBJS.16.01266.

Ultrasound-Guided Motor-Sparing Knee Blocks for Postoperative Analgesia Following Total Knee Arthroplasty: A Randomized Blinded Study.

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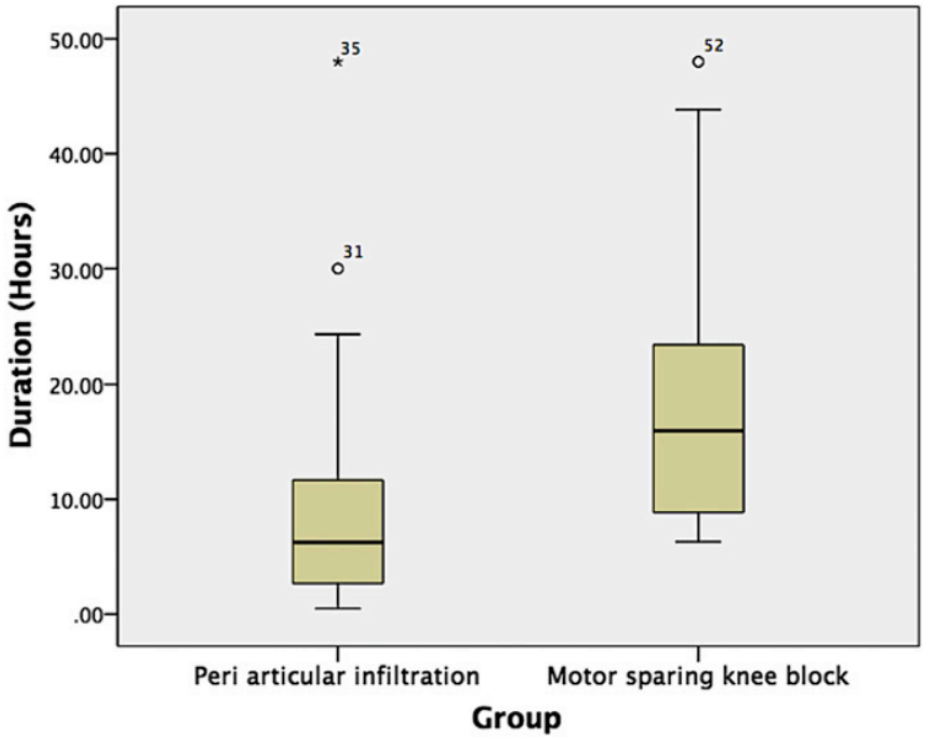

Fig. 2

Total duration of analgesia following TKA with either the motor-sparing block or periarticular infiltration. The horizontal line in the box represents the median duration of analgesia; the top and bottom of the box, the interquartile range; the whiskers, maximum and minimum values that are not outliers; and 31, 35, and 52, outliers. Cases 35 and 52 did not receive rescue analgesia before discharge.

Durée hybrid > LIA
Analgésie similaire
Ambulation idem

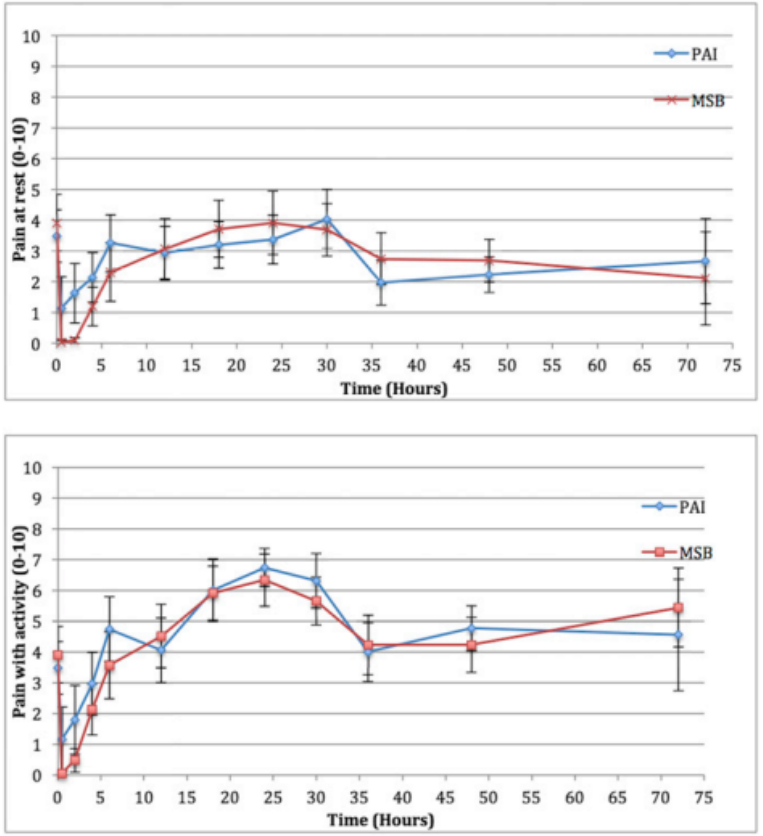

Fig. 3

A comparison of numerical rating scores for pain at rest and with activity in patients who underwent TKA with either the motor-sparing block (MSB) or periarticular infiltration (PAI). The values are unadjusted means with 95% confidence intervals. Statistically significant differences in favor of the motor-sparing block were found for the mean rating for pain at rest at 2 hours postoperatively and for pain during activity at 2 and 4 hours postoperatively.

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Résultats

21 patients analysés:

- 13 dans le groupe Ipack-BCA
- 8 dans le groupe BCA

Données démographiques et durées opératoires non différentes

	EVA max SSPI	EVA max J0	EVA max J1	Palier 2 à J1
BCA	3 ,75	5,12	5	8/8
BCA + Ipack	2,07	2,69	3,38	2/13
	p<0.015	**p<0.001**	**p<0.001**	**p<0.0001**

Aucun bloc moteur à H2, verrouillage du genou lors du testant par le kiné dans le service.

En résumé: l'iPACK

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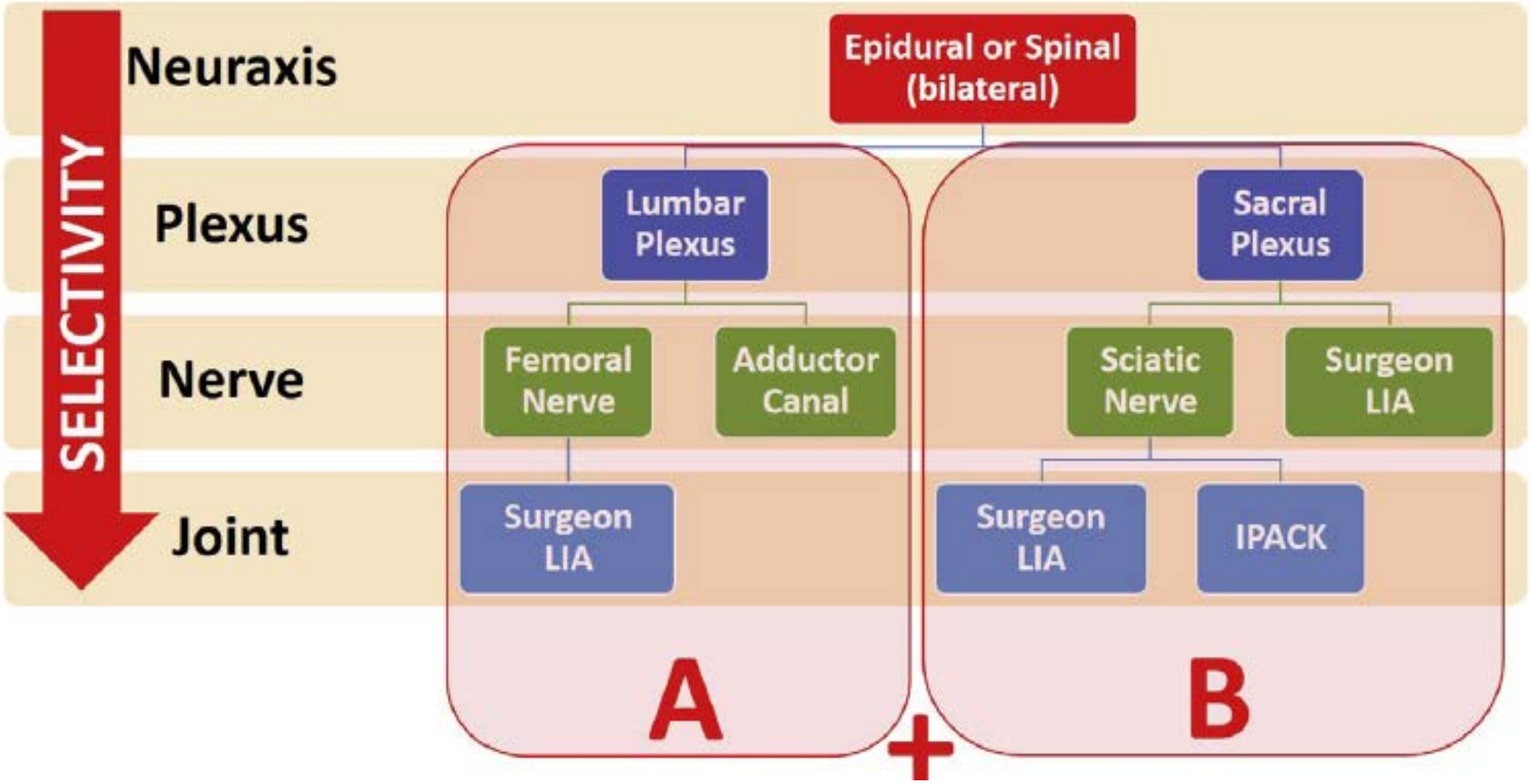
- **Alternative** séduisante **au BS** pour l'analgésie postérieure du genou
- Moderne et esprit **RAAC** >>> préserve la déambulation
- Durée limitée >>> **potentiel énorme pour les futurs AL « LP »**
- S'inscrit parfaitement dans l'analgésie **multimodale** actuelle
- **Sécuritaire** et reproductible (opérateur indépendant)
- Incomplet >>> titrer 6mg de M+ en SSPI n'est pas un échec
- Le niveau de preuve actuel reste faible, chirurgie ligamentaire du genou a évaluer

- Tjs associer à la composante antérieure



B.S. Kandarian et al. / Best Practice & Research Clinical Anaesthesiology 33 (2019) 111–123

Pour conclure…

Déambulation

LIA ***LIA+CA*** ***Ipack+SSF*** ***BS+KTF***

PCA ***Ipack+CA*** ***KTF+Ipack*** ***KTS+KTS***

Analgésie

Cas N°1

- Monsieur OC, 46 ans, 78kg
- ASA 2 pour HTA R/ BB, OH (occasionnel évidemment!)
- Arrive en vélo à la CSA
- Opéré en clinique du genou
- MET’s > 12
- RAAC

Déambulation +++

>>>Ipack + CA

Cas N°2

- Madame L.B. 64 ans 82 kg
- ASA 2, PR HTA
- Se fait opérer au CHU Montpellier
- Arrive en VSL a la CSA
- PTG deuxième coté
- R/ Izalgy, Imeth, Ac. Folqique, AINS

Compromis mobilisation/Analgésie

Ipack + KTF

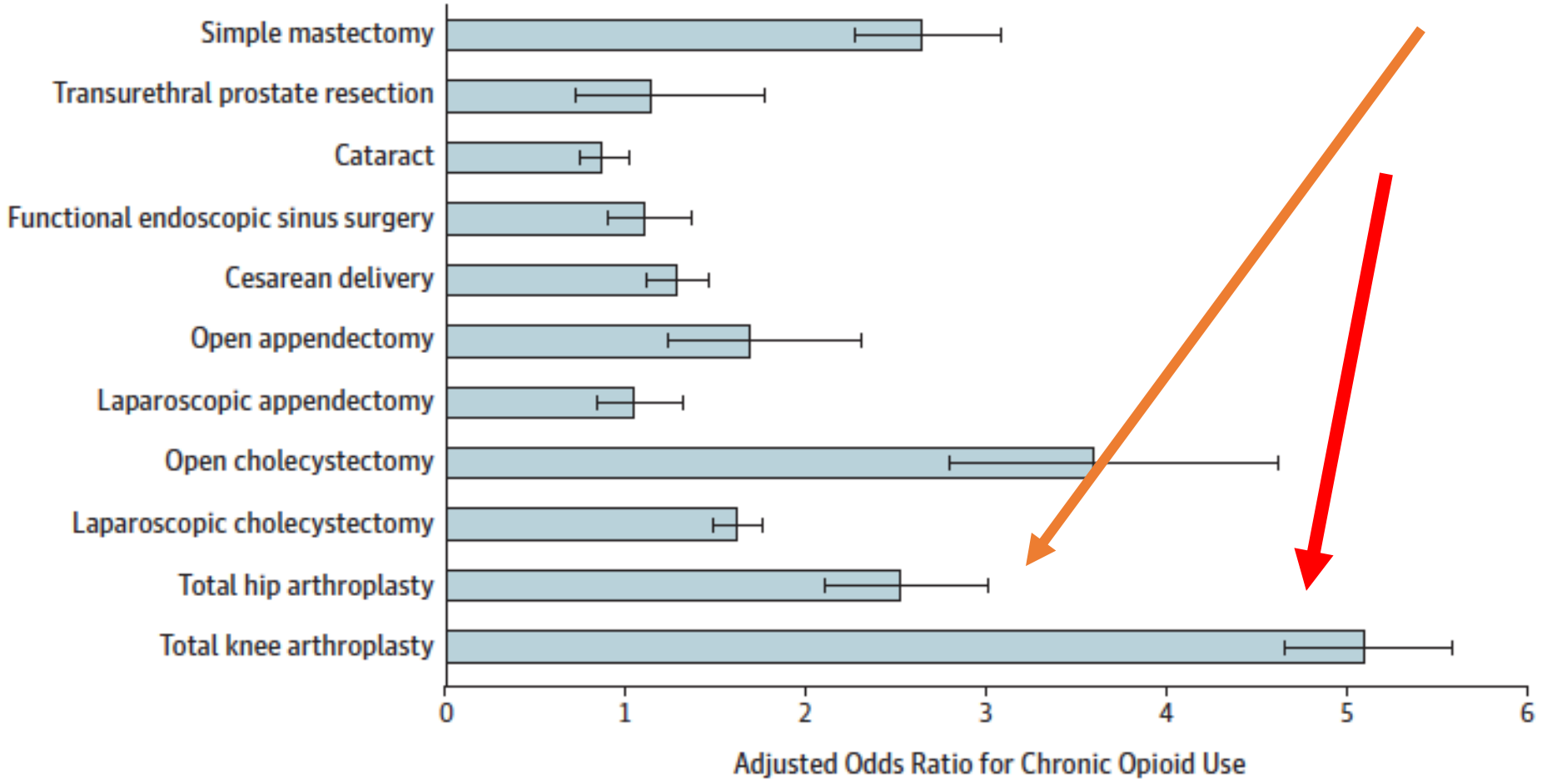
Cas N°3

- Madame M.D.B. 68 ans 132kg
- Arrive en chaise roulante à la CSA
- ASA 3, D+ chronique, SAOS, CMI, lombalgique, anxieuse
- durogesic, insuline, BB, Statine,…
- Très mauvais souvenir du premier coté
- D+++ tjs présente
- C’est fait opérer ailleurs

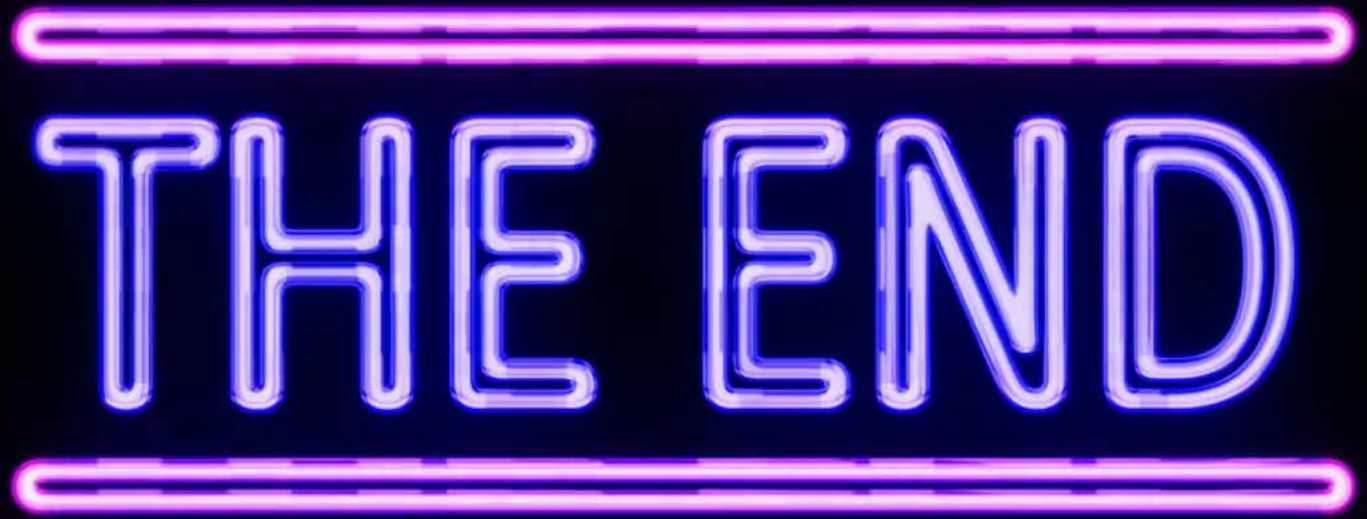
Analgésie +++

BSP + KTF

Figure 2. Risk of Chronic Opioid Use Following Surgery



Illustrated are the adjusted odds ratios for chronic opioid use within 1 year after surgery for each study surgical procedure. Error bars indicate 95% CIs, which were calculated using robust standard errors. Our regression model included controls for age, sex, year of surgery, and overall health care utilization. In addition, the model also included controls for preoperative use of benzodiazepines, antidepressants, and antipsychotics, and controls for the medical comorbidities listed in Table 1.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