

Nouveautés en Anesthésie-locorégionale pour la Chirurgie Ambulatoire



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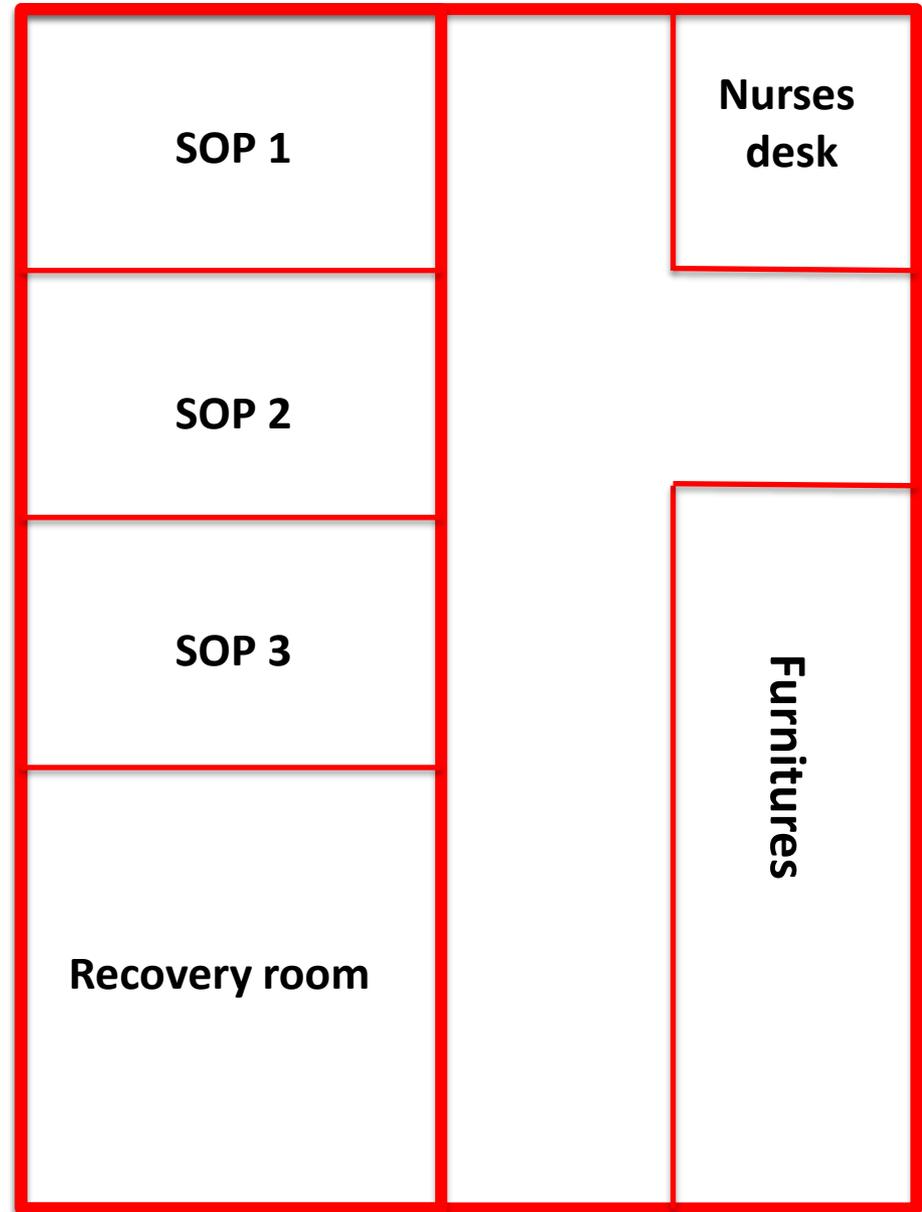
The anesthesiologist's Dream

Ultrasound and new nerves

Ultrasound guided regional anesthesia for the spine

The new old local anesthetics

The anesthesiologist's Dream

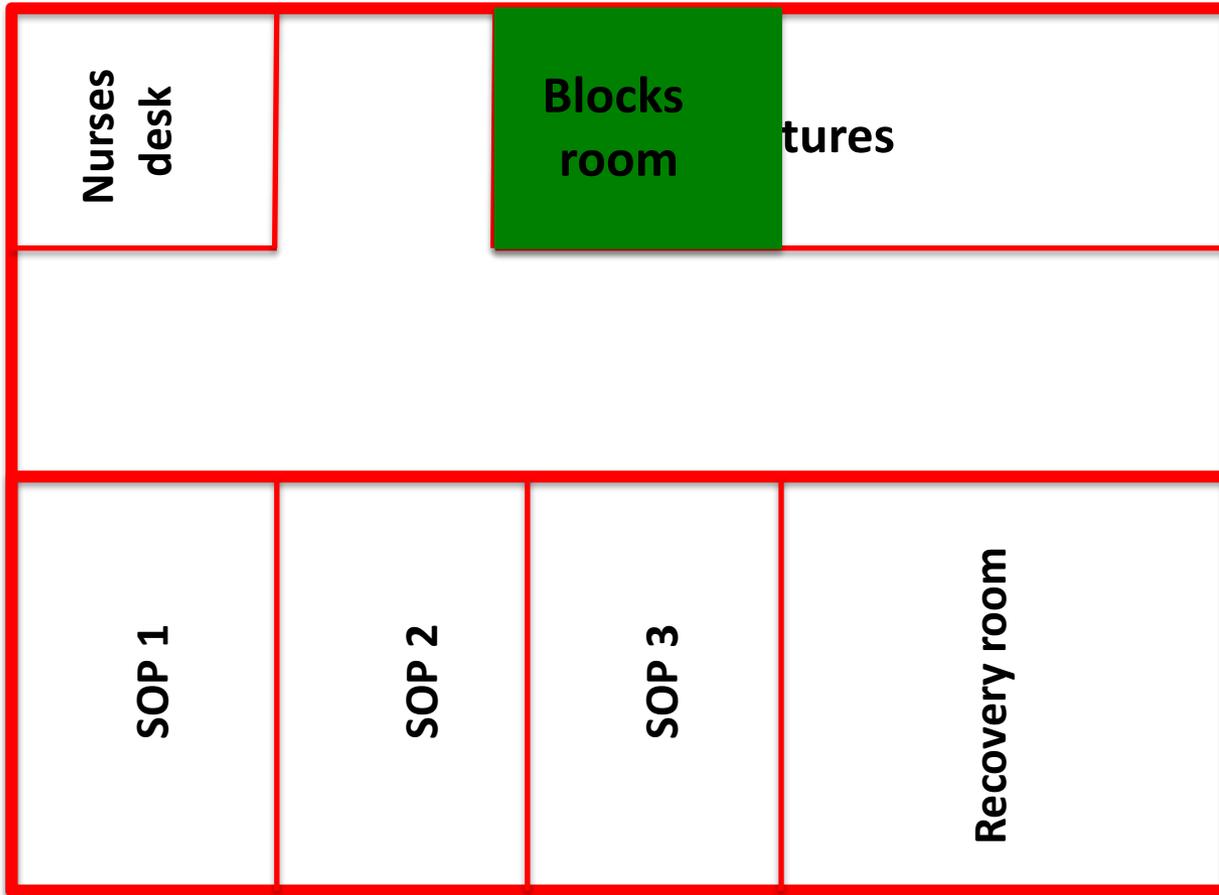


The anesthesiologist's Dream



Nurses are so fun of...regional anesthesia!

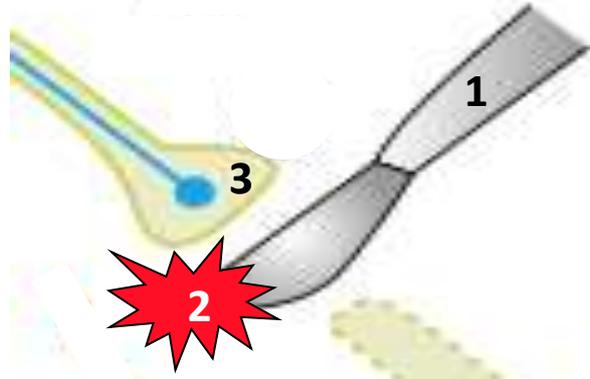
The anesthesiologist's Dream The Only Topic that would be New



ECG
SaO₂
Blood pressure
O₂
Suction line
Resuscitation

Ultrasound and new nerves

Paresthesia



Neurostimulator



Portable Docking Station

External Speakers
For audio of Doppler imaging.



Streamline Cart



Three "live" transducer connections, so you're ready for a range of scans.

Storage Shelf
For printer and CD/DVD player.



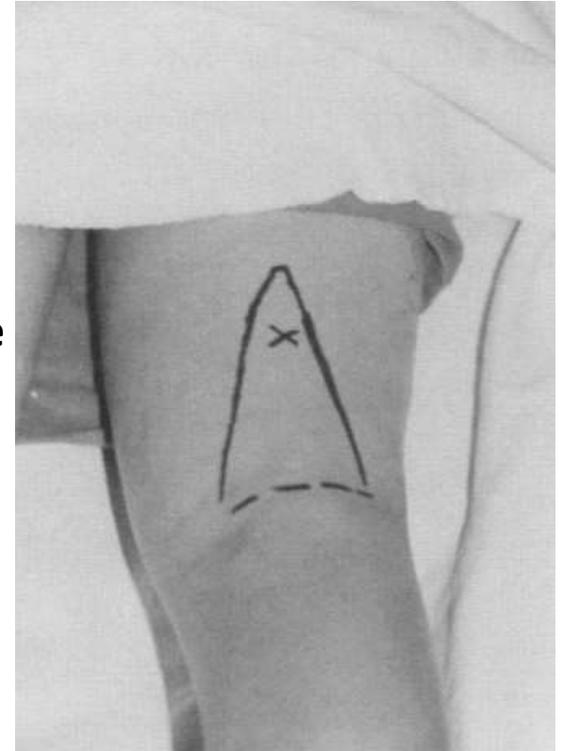
Drawer Locks
For secure storage with a loop for a padlock on the underside of the drawer.

Slim Design
Easily move from location to location. Fits into tight spaces.

Ultrasound and new nerves

Neurostimulation

1. **Anatomical landmarks**
2. **Stimulations of the motor compound of the nerve**
3. **Blind technique**
4. **Impossible to locate sensory branches**



Ultrasound and new nerves

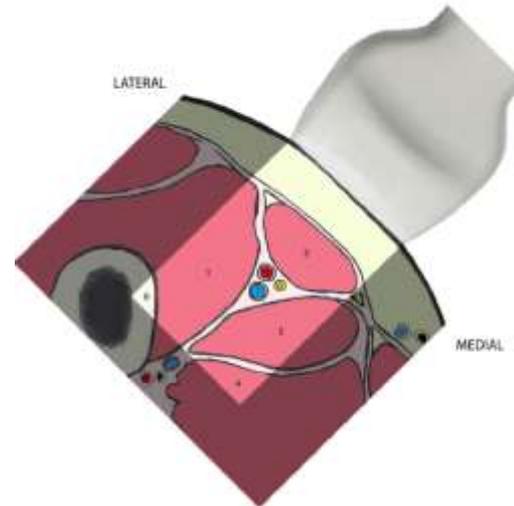


Feasibility and Efficacy of Ultrasound-Guided Block of the Saphenous Nerve in the Adductor Canal

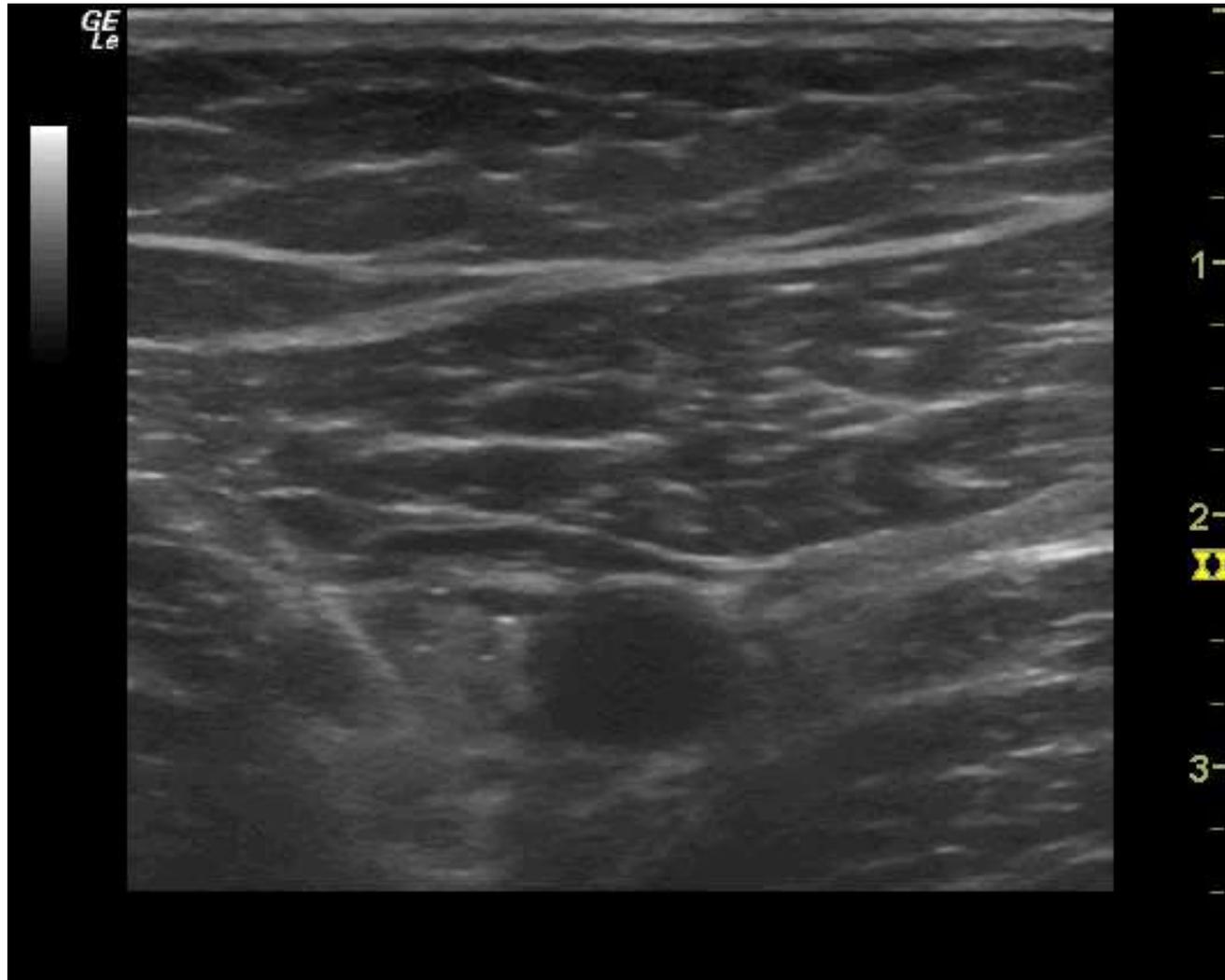
Baskar Manickam, MD, FRCA, Anahi Perlas, MD, FRCPC,† Edel Duggan, MB, FCARCSI,*
Richard Brull, MD, FRCPC,† Vincent W.S. Chan, MD, FRCPC,† and Reva Ramlogan, MBBS**



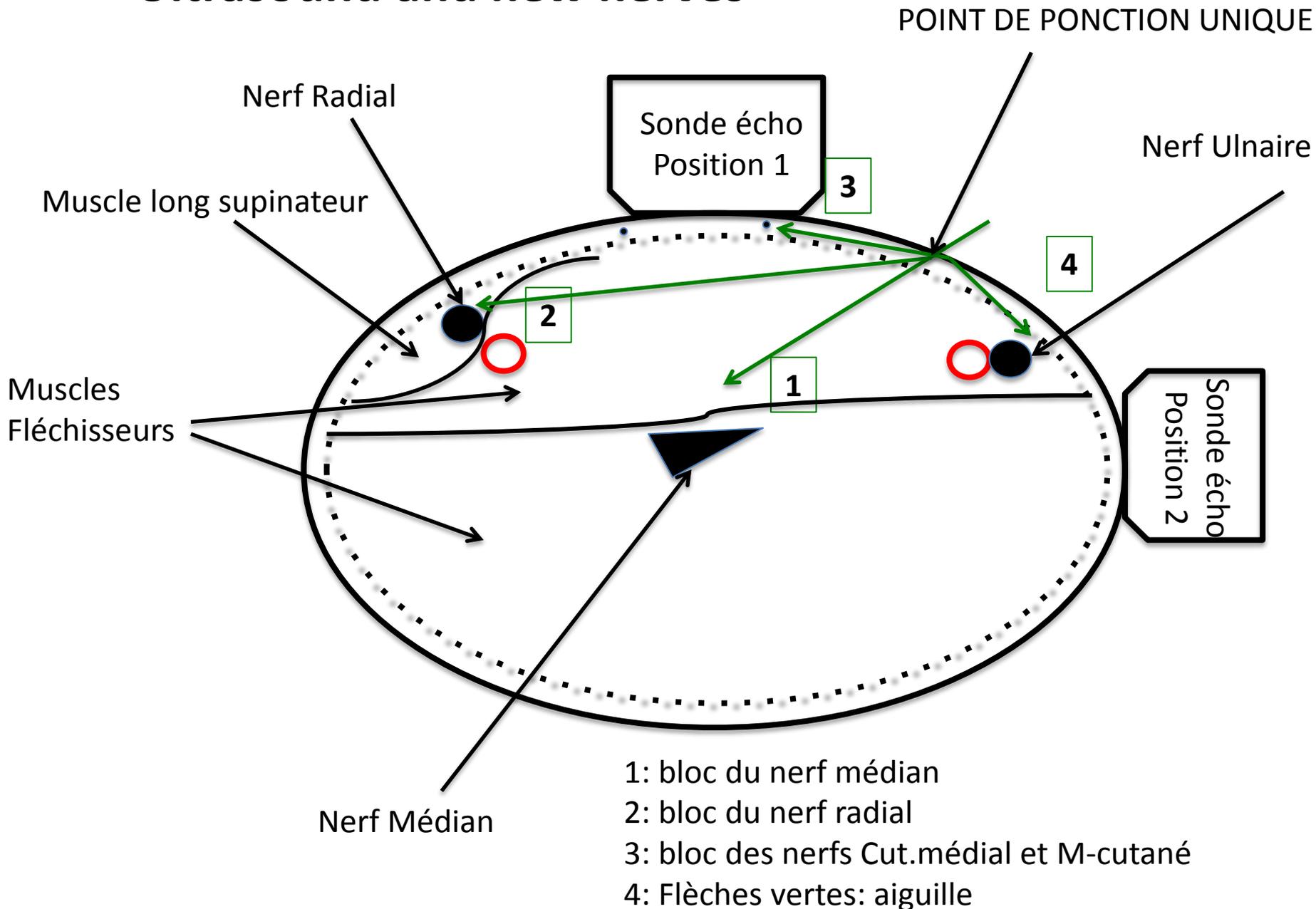
FIGURE 1. Probe and needle orientation for SN block in the distal adductor canal (right thigh).



Ultrasound and new nerves

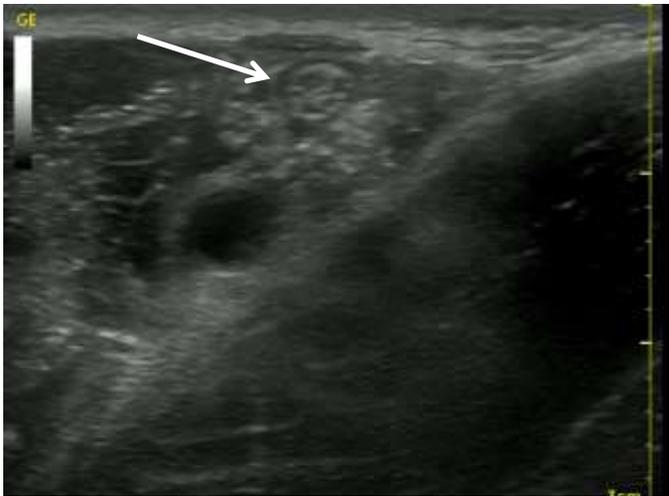


Ultrasound and new nerves

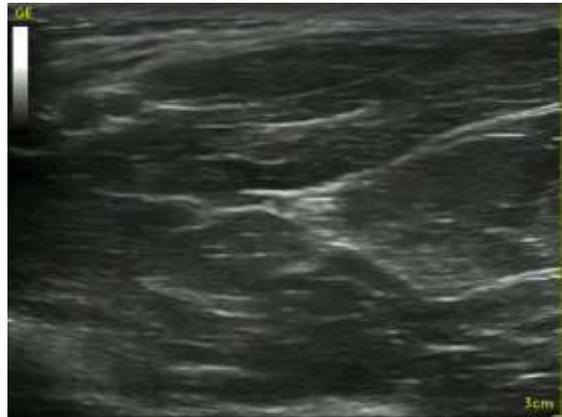


Ultrasound and new nerves

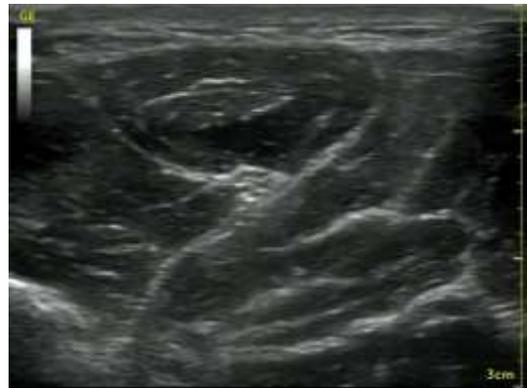
Carpal tunnel without recovery room



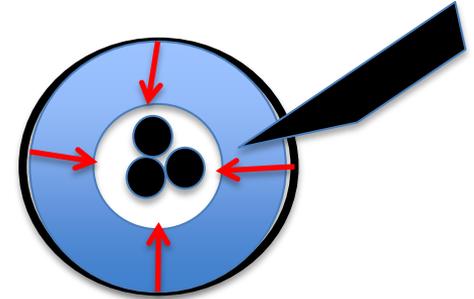
Carpal tunnel?



MEDIAN

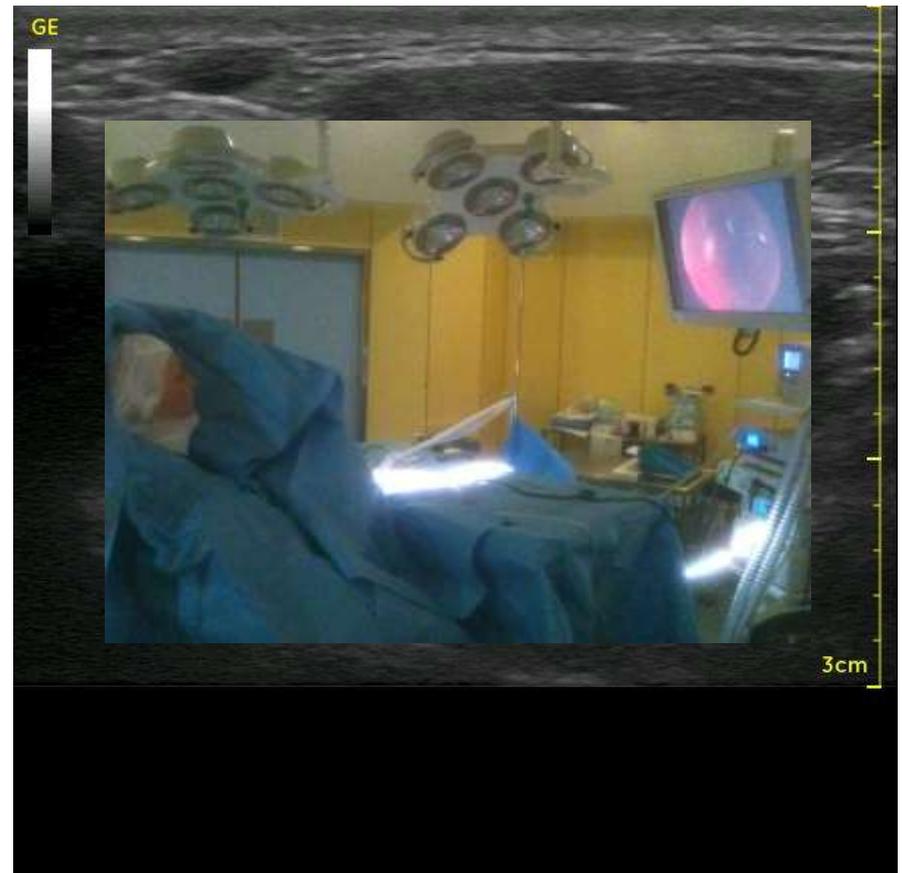


ULNAIRE

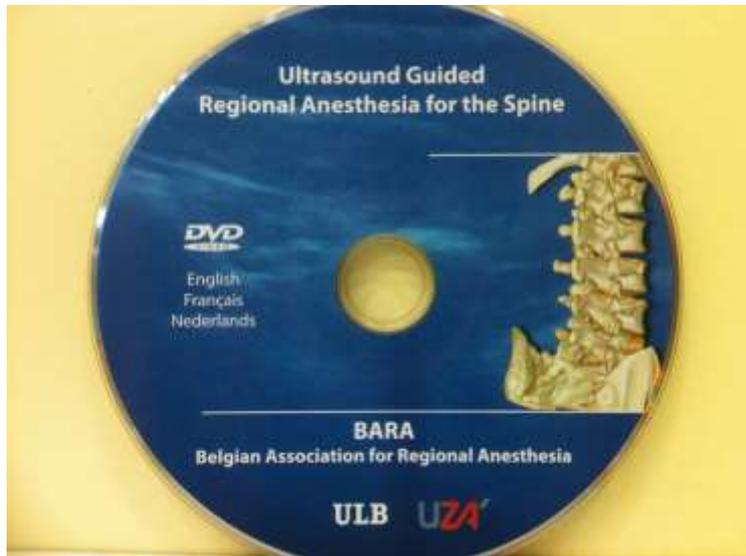


Ultrasound and Old Nerves

BIS for one day surgery

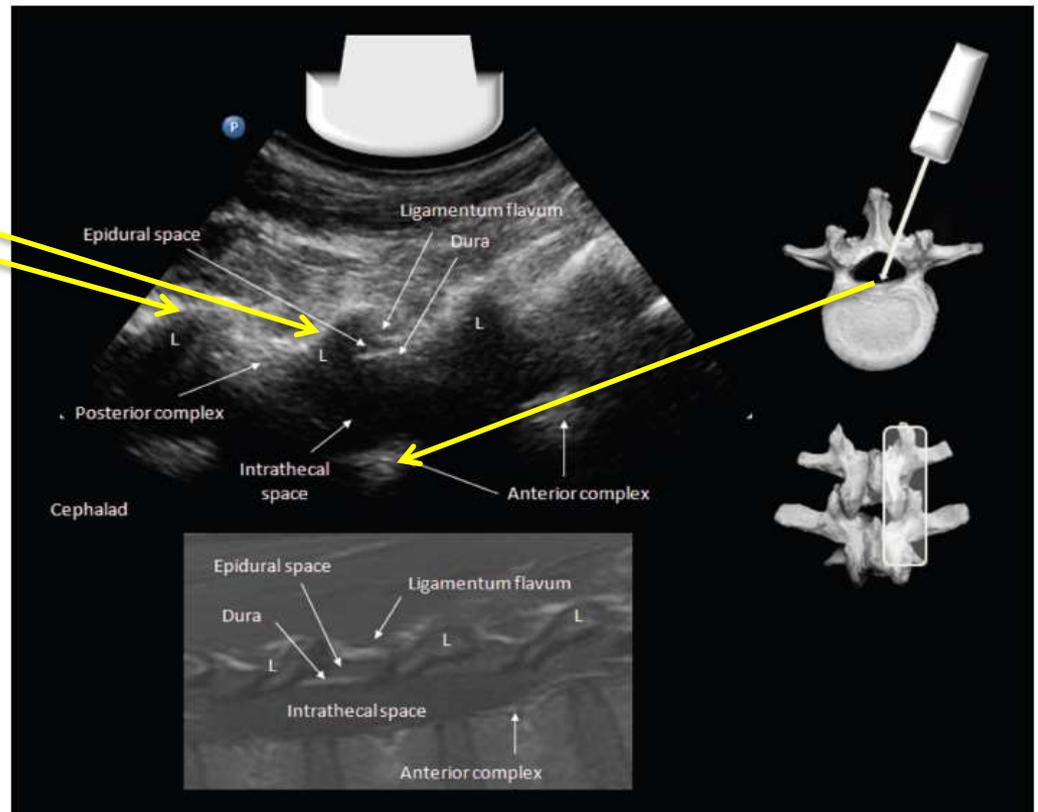
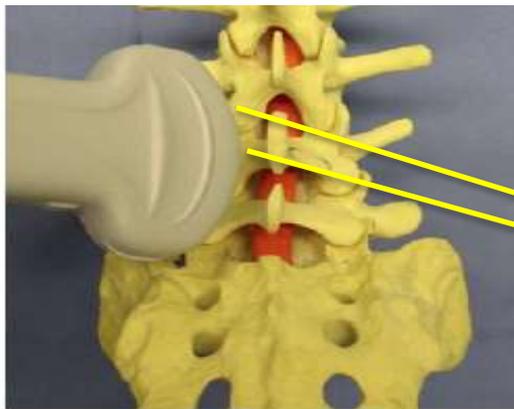


Ultrasound guided regional anesthesia for the spine

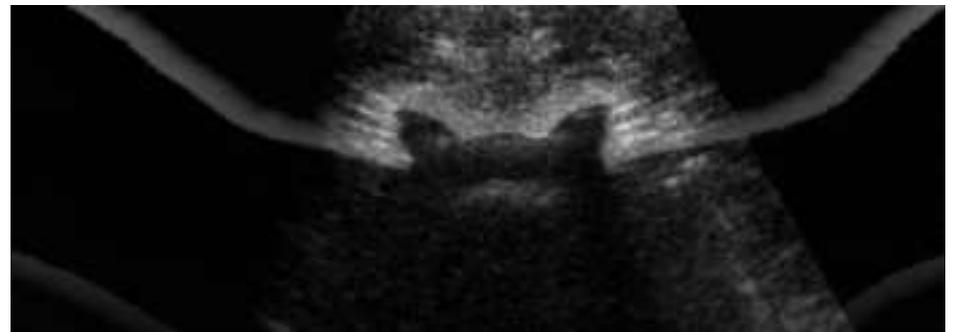
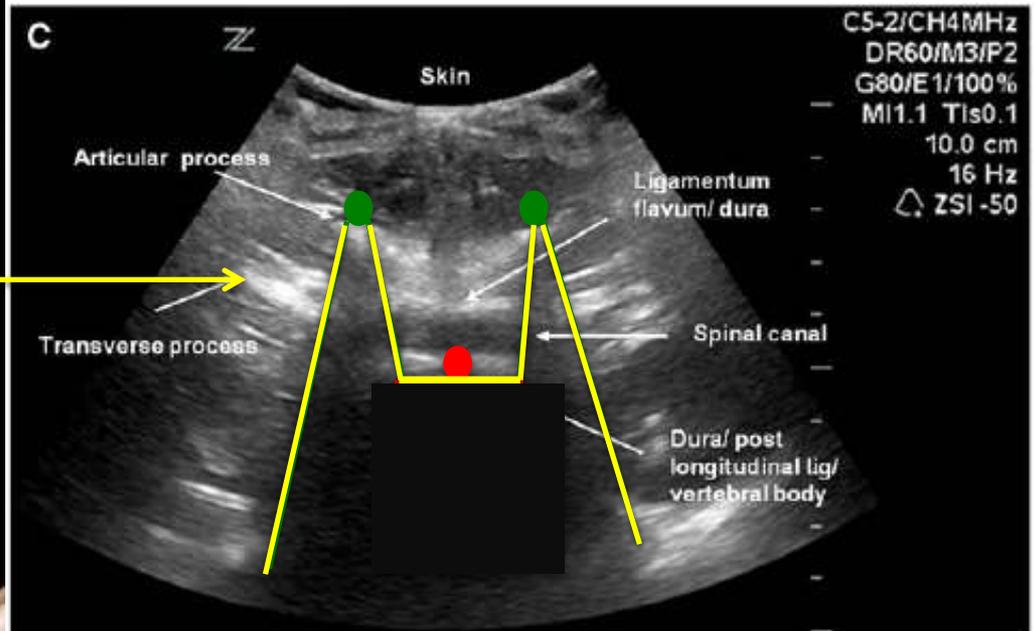
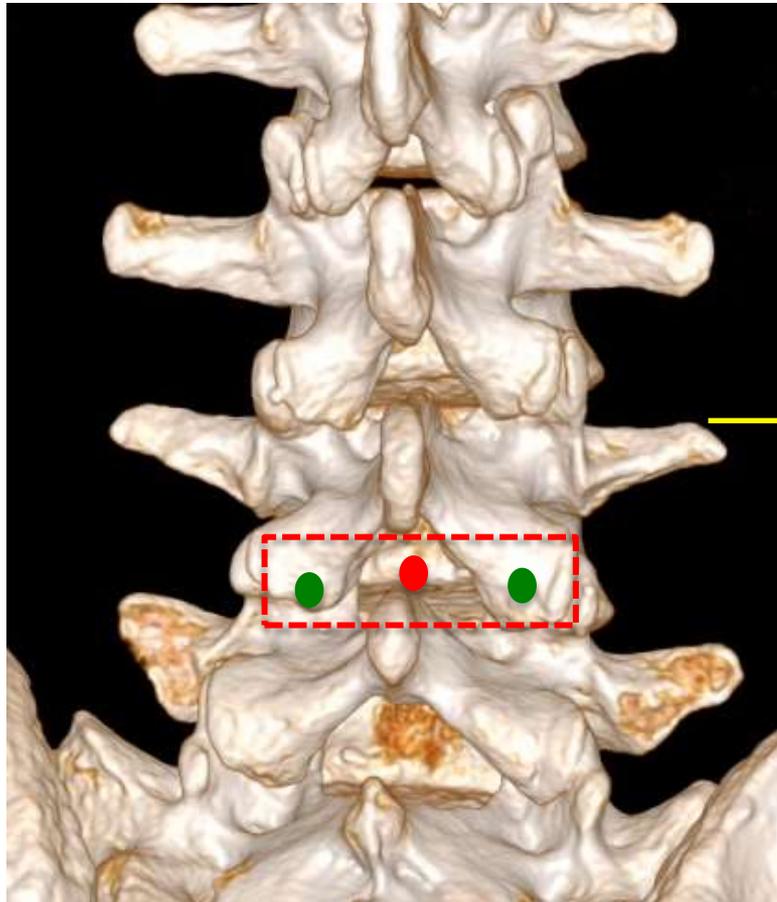


Ultrasonography of the Adult Thoracic and Lumbar Spine for Central Neuraxial Blockade

Ki Jinn Chin, F.R.C.P.C.,* Manoj Kumar Karmakar, M.D.,† Philip Peng, F.R.C.P.C.‡



Ultrasound guided regional anesthesia for the spine



Pain

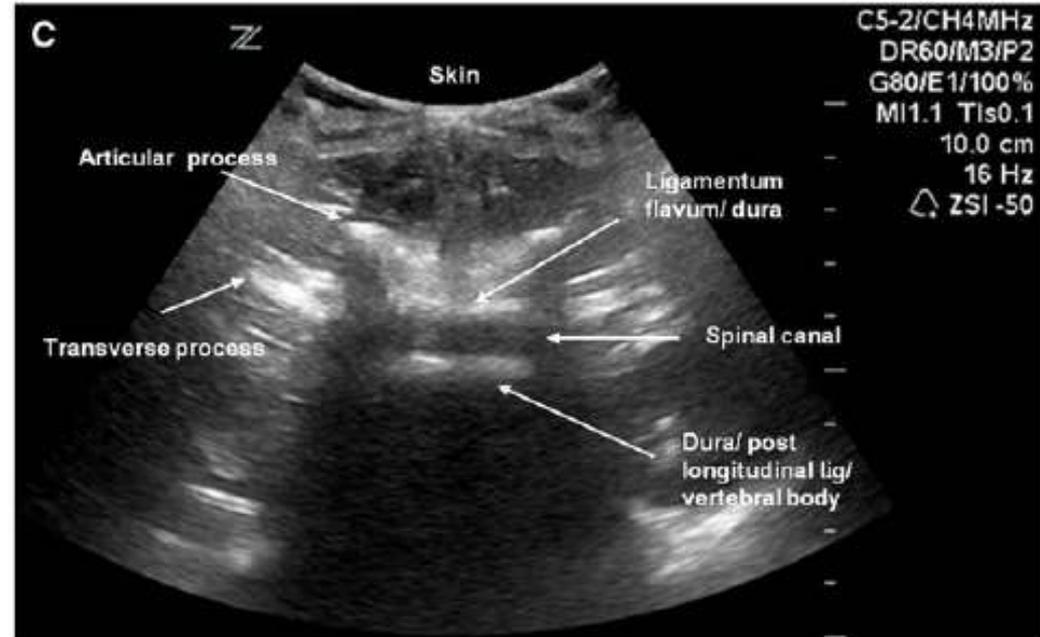
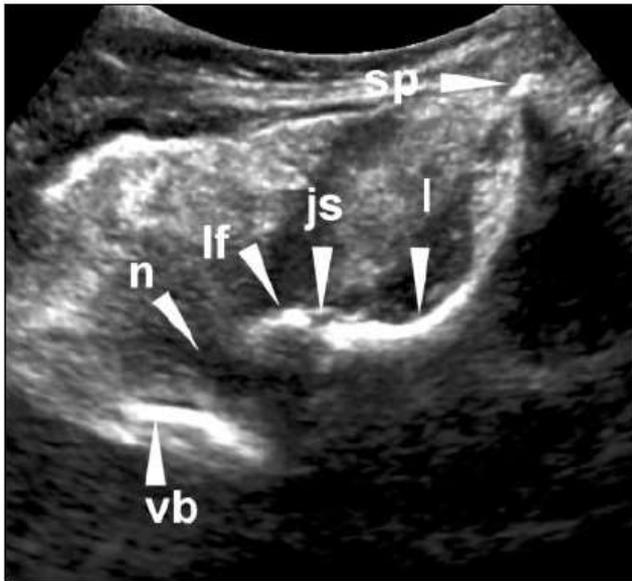
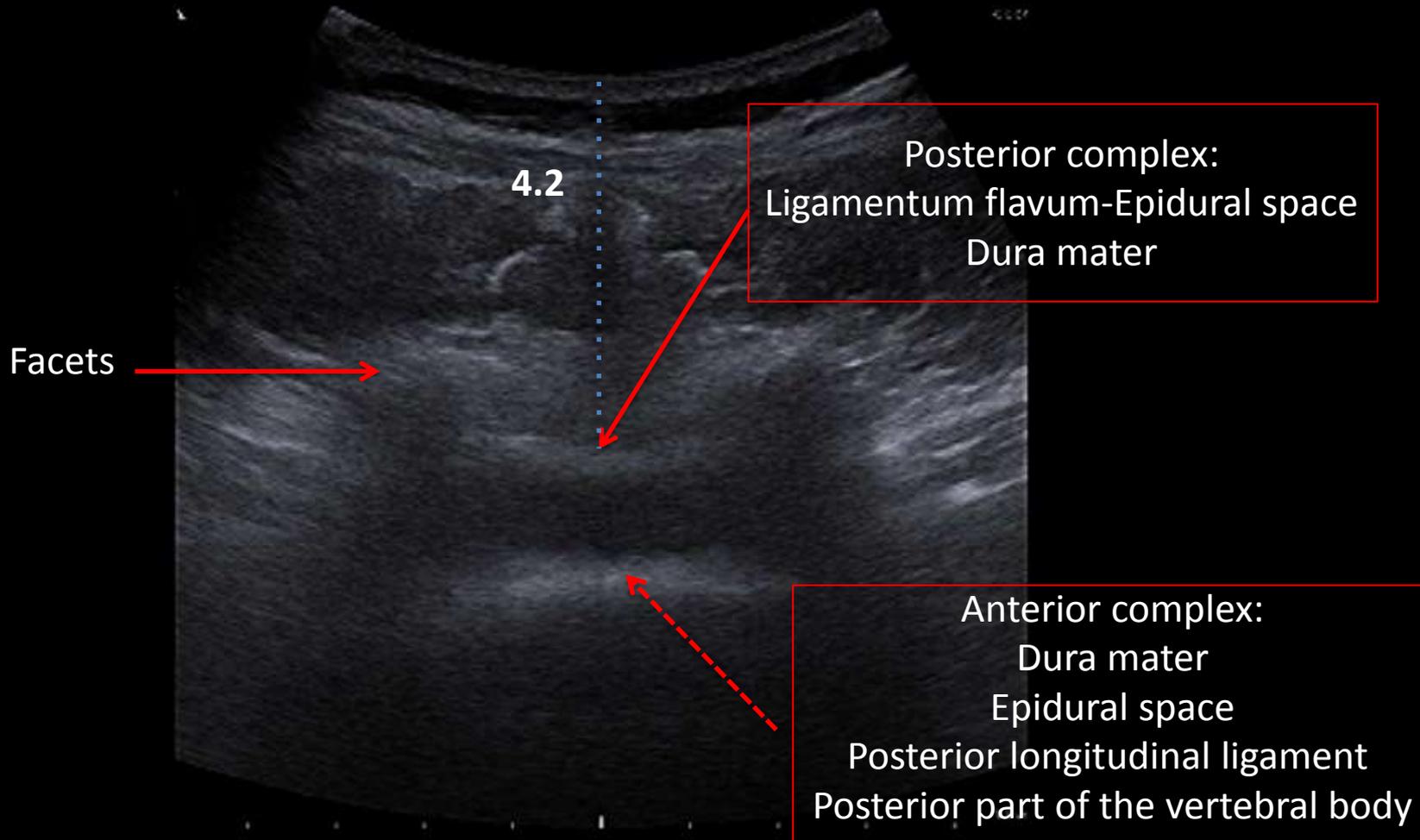


Figure 3. Panoramic view showing sonographic anatomic details for the systematic process; js indicates joint space; l, lamina; lf, lateral facet; n, spinal nerve; sp, spinal process; and vb, vertebral body.

Pain



Pathogenesis, Diagnosis, and Treatment of Lumbar Zygapophysial (Facet) Joint Pain

Steven P. Cohen, M.D.,* Srinivasa N. Raja, M.D.†

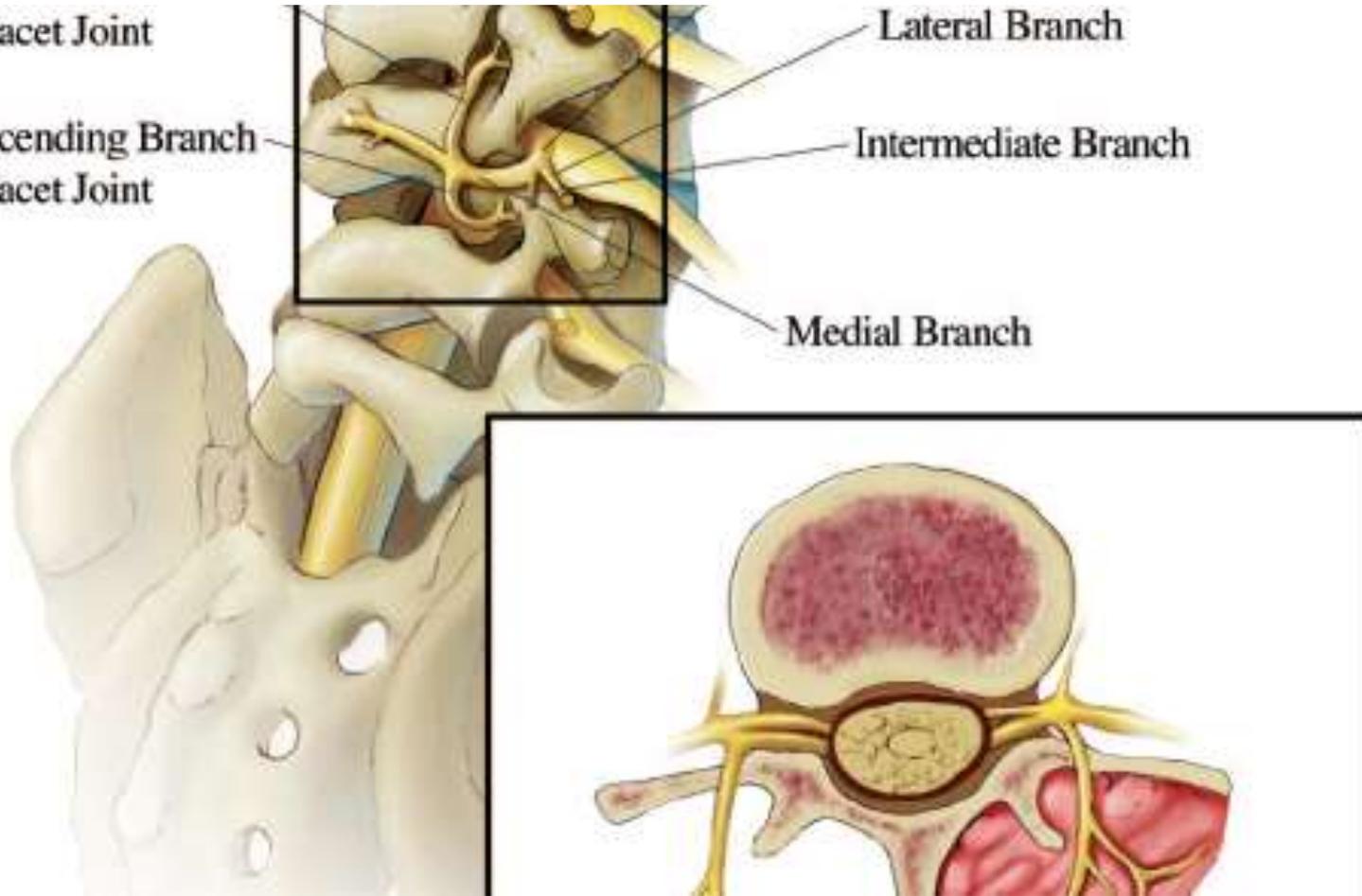
to Facet Joint

Descending Branch
to Facet Joint

Lateral Branch

Intermediate Branch

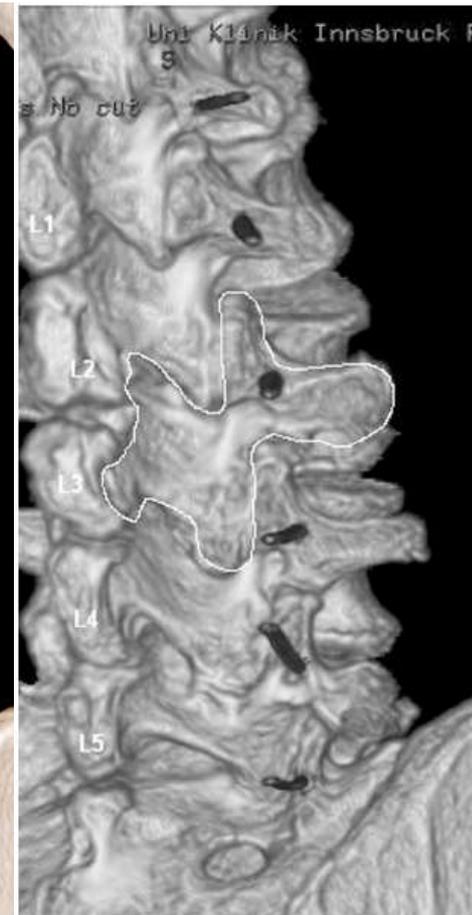
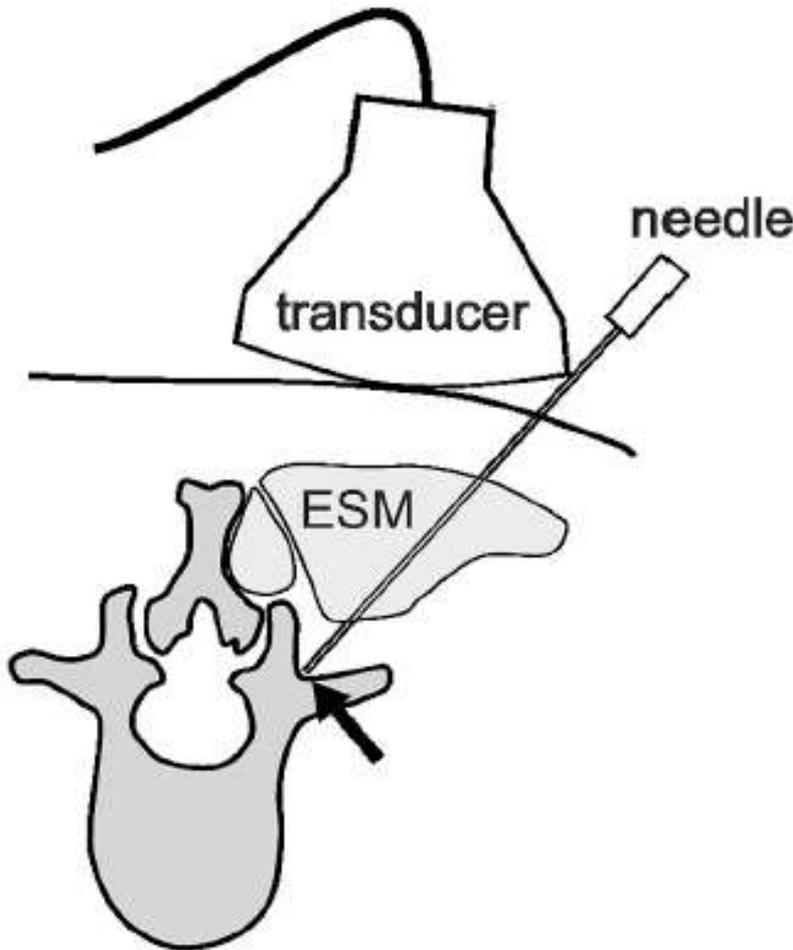
Medial Branch



Ultrasound-guided Lumbar Facet Nerve Block

Accuracy of a New Technique Confirmed by Computed Tomography

Manfred Greher, M.D.,* Lukas Kirchmair, M.D.,† Birgit Enna, M.D.,‡ Peter Kovacs, M.D.,§ Burkhard Gustorff, M.D.,||
Stephan Kapral, M.D.,# Bernhard Moriggl, M.D.**





Blood patch

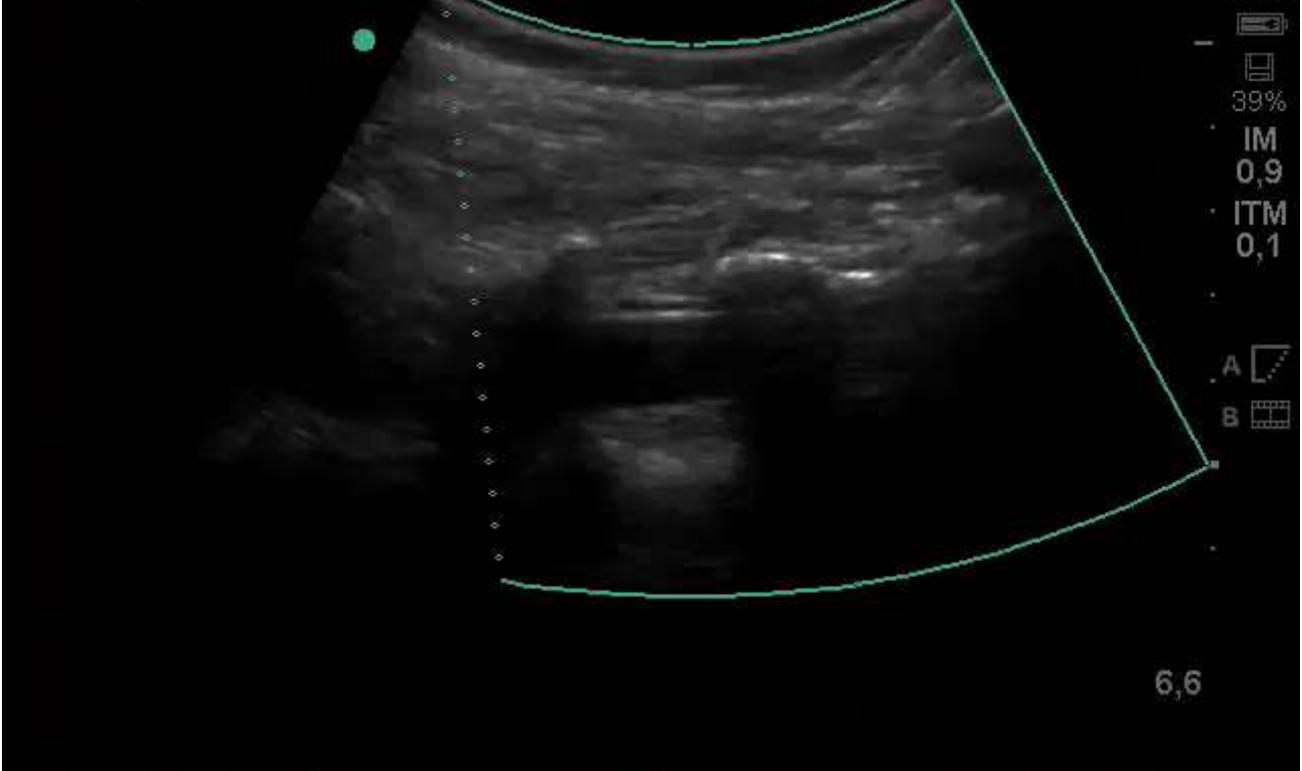
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Bas G/D Profond **Moyen** Marqué Inactif Retour...



The new old local anesthetics

Regional Anaesthesia VS General Anaesthesia

Difficult intubation

Difficult ventilation BPCO-Asthme

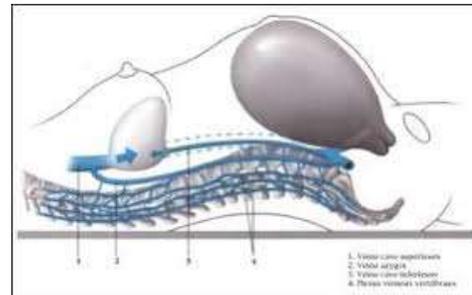
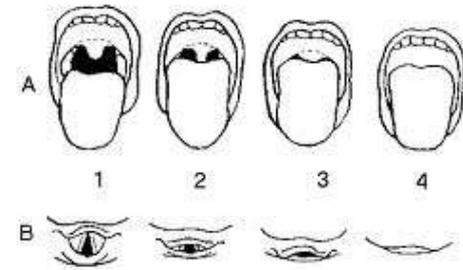
Full stomach

Old patient

High ASA score

Obésity

Pregnancy



Benefices-Risks Balance

The new old local anesthetics

Spinal Anesthesia

Rapid onset

Predictable onset

Suitable duration of
sensory block

Rapid recovery

Minimal side effects

General Anesthesia

Propofol

Remifentanil

Laryngeal mask



The new old local anesthetics

Small-dose bupivacaine

Failure, Inadequate block height

Urinary retention

Excessively long time-course to block resolution

Hyperbaric Lidocaine

40 years

Transient Neurological Symptoms (TNS)

10%

Gupta Acta Anaesthesiol Scand 2003

Hampl Anesthesiology 1998

Kamphuis Anesthesiology 1998

Ben David Anesth Analg 1997

The new old local anesthetics

TNS are characterized by moderate to severe pain in the buttocks and legs

Symptoms develop within **a few hours and up to 24 hours after anaesthesia**

They last, in most cases, up to **two days (<5 days)**

Incidence of TNS are increased by:

Patient Position **Lithotomy-arthroscopy**
Early deambulation



NOT ADAPTED TO ONE DAY SURGERY



Alternatives

The new old local anesthetics



Short-acting LA

surgical spinal block 60–90 min

Chlorprocaine: 1950

Ampres®

Amino-ester, Normobaric

Preservative and anti-oxydant free

(Na⁺ bisulfite)

Articaine: 1970

Astracaine®, Ultracaine®

Amino-amide, Normobaric

Intermediate-acting LA

surgical spinal block 90-150 min

Mepivacaine: 1962

Carbocaine®, Scandicaine®

Amino-amide, **Hyperbaric**

TNS

Prilocaine: 1965

Citanest

Tachipri®

Amino-amide, **Hyperbaric**

Prilocaine

1965?

Amide

hyperbaric

Safe

Rapid onset

Interm. duration

Rare side effects

Unstable

Loss of safety

Loss of efficiency

Why a sudden interest?

Tachipri seems stable at room temperature (3 years)

Additional actual factors

Duration of surgeries are constantly reduced

Economy: one day surgery represent 80% of hospitalizations (USA)

Social: patients ask for one day surgery

Chloroprocaine: Ampres?

Why a sudden interest?

Chloroprocaine: Ampres[®]

Amino-ester, Normobaric

pH :3

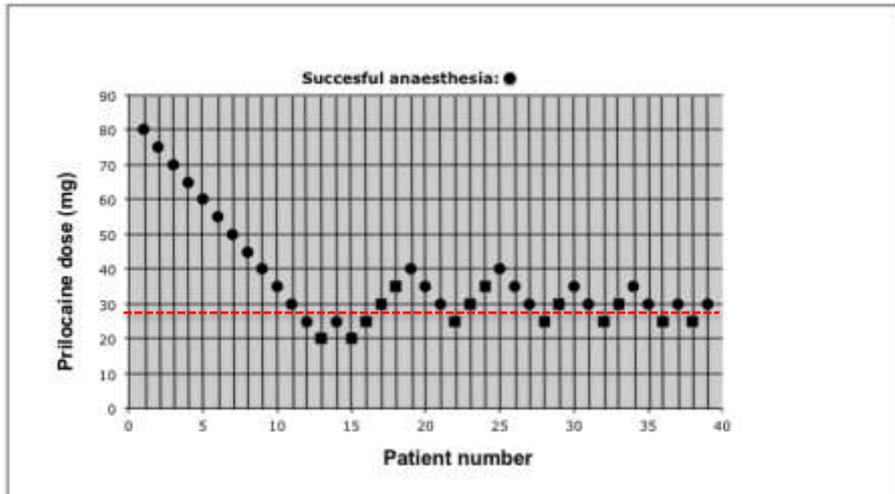
No Na⁺ bisulfite

Short-acting LA

Surgery < 60 min

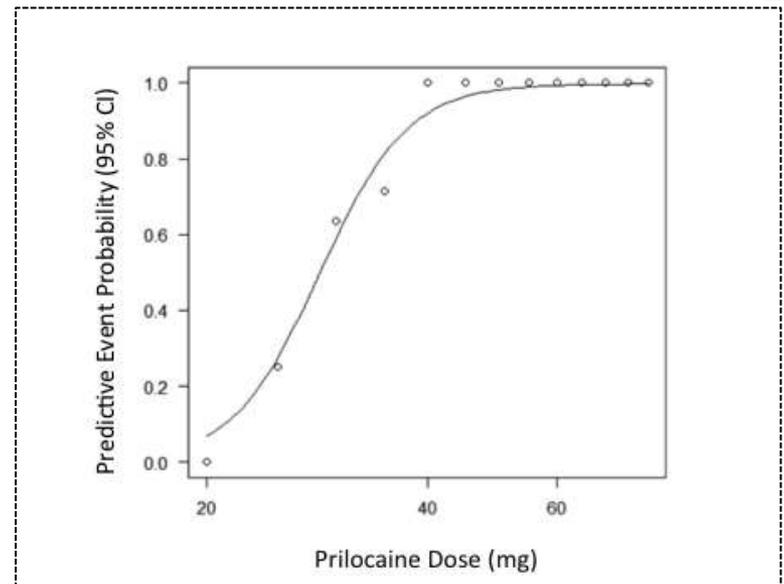
ED 90 Prilocaine

ED₅₀ and ED₉₀ of intrathecal hyperbaric 2% prilocaine in ambulatory knee arthroscopy



Age (years)	48,33 (11,66)
Weight (kg)	75,58 (14,05)
Height(cm)	172,69 (9,83)
BMI (kg/m ²)	25,23 (3,14)
ASA	
I	22
II	16
Gender	
F	16
M	22

PROBIT ANALYSIS ON DOSE			
Probability	Dose	95% confidence interval	
0.50	29.09566	24.55928	32.99707
0.55	29.87623	25.89173	34.54325
0.60	30.69082	27.10486	36.47542
0.65	31.55612	28.20134	38.88324
0.70	32.49442	29.20839	41.87277
0.75	33.53833	30.16911	45.60753
0.80	34.74028	31.13713	50.38360
0.85	36.19578	32.18416	56.79756
0.90	38.11406	33.43632	66.26816



Prilocaine vs Chlorprocaine

Cases and recipes

Knee Arthroscopy: 40 mg

ChloroP 40-50 mg

Saphenectomy: 60 mg

48 mg + 3 μ g sufentanil

Uterin revision: ChloroP 40-50 mg

Hysteroscopy, cystoscopy: ChloroP 40-50 mg

Clou gamma, triple vissage: 40 mg

30 mg + 1 μ g sufentanil

Cesarean section: 65 mg

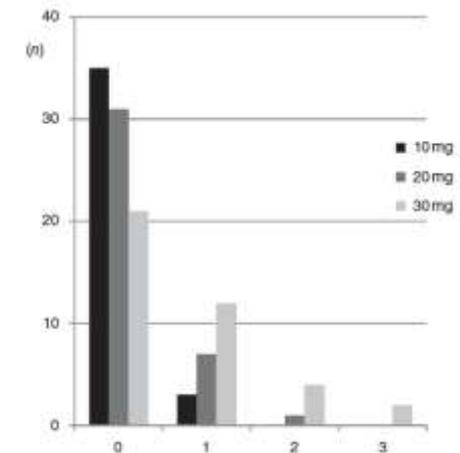
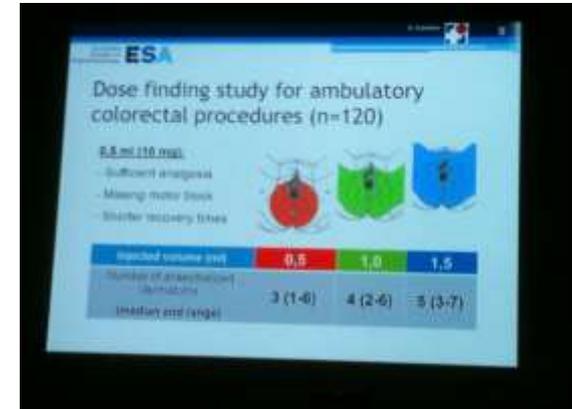


Fig. 1. Motor block. Pre-operative Bromage score in association to the applied dosage of hyperbaric prilocaine 20 mg/ml. ($P = 0.0002$, see Table 3)

Pure Chloroprocaine: Ampres?

Table 1. Surgical Procedures with 2-Chloroprocaine (CP) Spinal Anesthesia

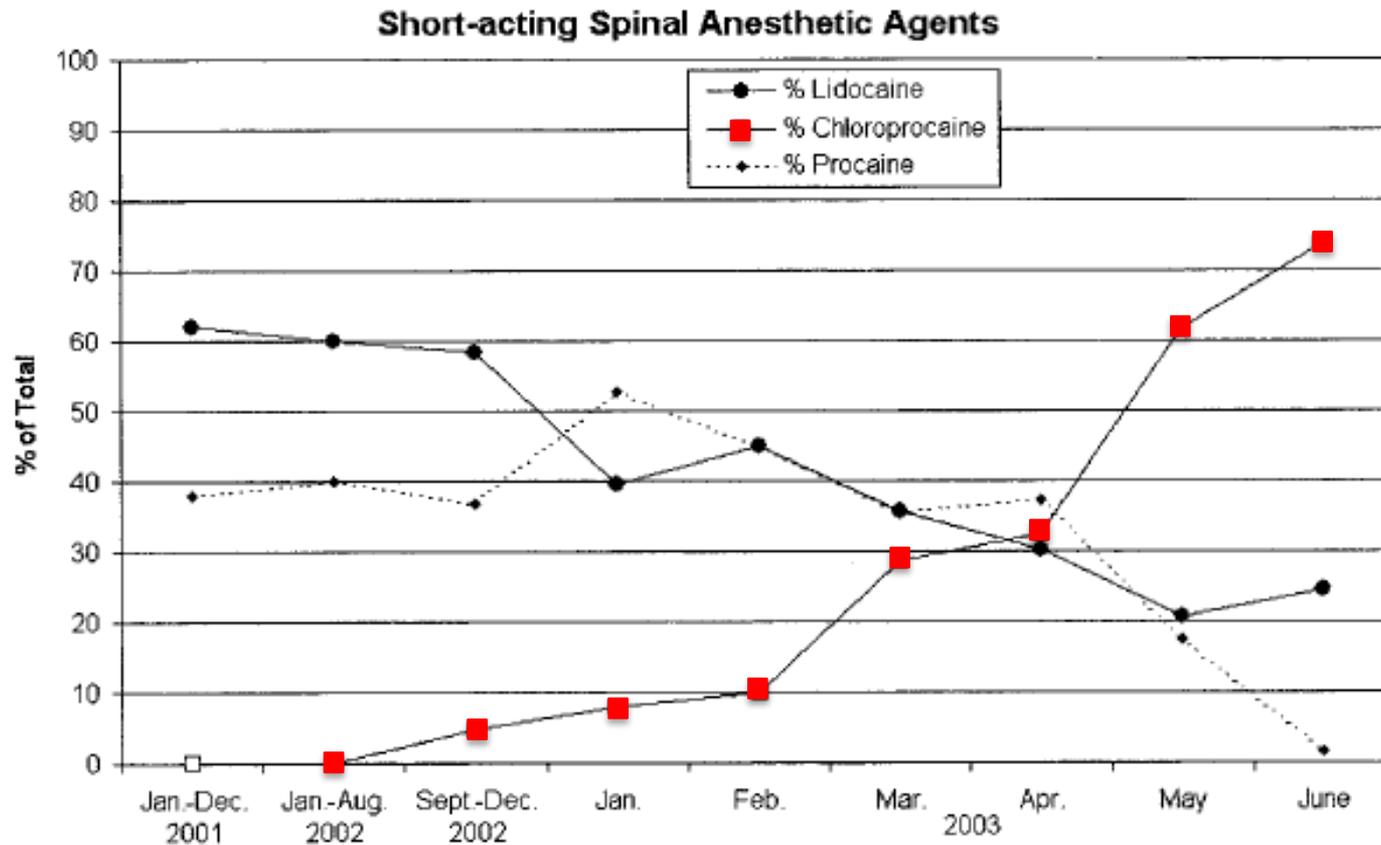
Type of operation	n	Procedure type	2-Chloroprocaine dose (mg)					Adjuvants				
			20	30	40	50	60	None	Fentanyl 10 µg	Fentanyl 20 µg	Dextrose	Water
Orthopedic	25	Knee arthroscopy		1	22	2 ^a		15	10			
	6	Biopsy/excision of lower extremity mass			6			4		1	1	
	4	Lower extremity debridement		1	2	1 ^a		2	2			
	5	Other			5			4		1		
General	14	Inguinal hernia repair		1	12		1 ^a	10	4			
	9	Perirectal procedure		3 ^a	6			4	2	1	1	1
	5	Varicose vein stripping			3	1	1 ^b	2	2	1		
	2	Other			2				2			
Gynecologic	6	Hysteroscopy		1	5			6				
	8	Dilation and curettage			8			5	1	1	1	
	4	Cervical laser procedures			3	1 ^b		3		1		
Genitourinary	13	Cystoscopy			5	8		12		1		
	9	Transvaginal sling				9		8	1			
	8	TURBT/TURP	1 ^a		5	2		7	1			
	4	Ureteroscopy				4		3	1			
Total	122		1	17	97	5	2	85	26	7	3	1

TURBT = transurethral resection of bladder tumor; TURP = transurethral resection of prostate.

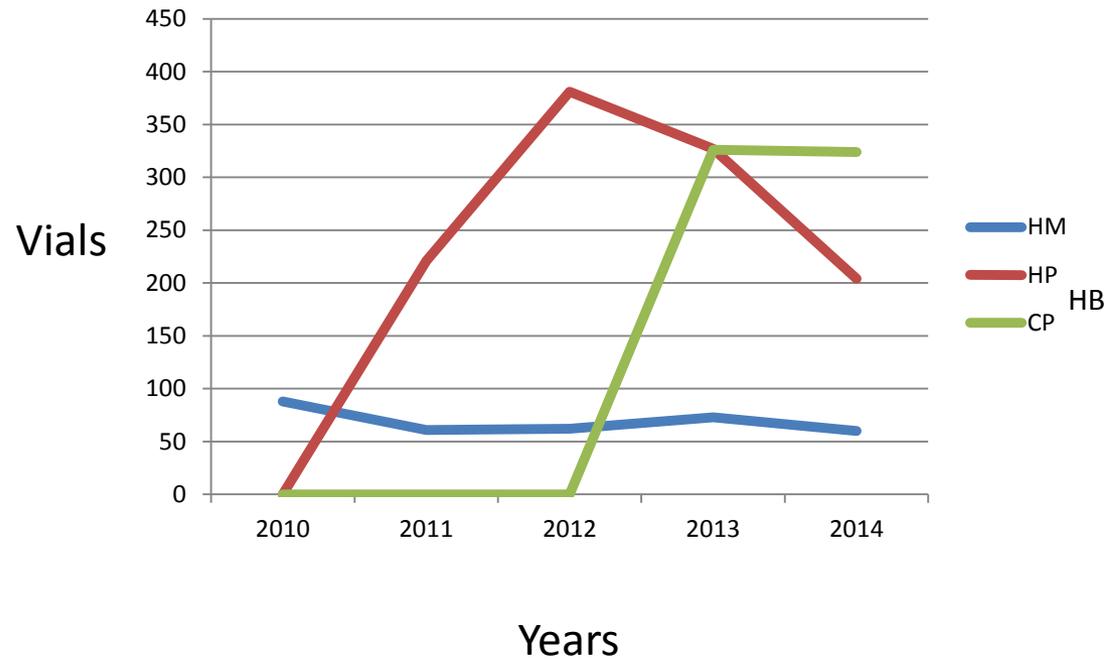
^a Includes one patient with 10 µg of fentanyl.

^b Includes one patient with 20 µg of fentanyl (all other patients who received fentanyl as an adjunct received 40 mg of chloroprocaine).

Any Interest into Chloroprocaine?



Local evolution *H. Braine L'Alleud*



Conclusion

RA vs GA

Few side effects: OD

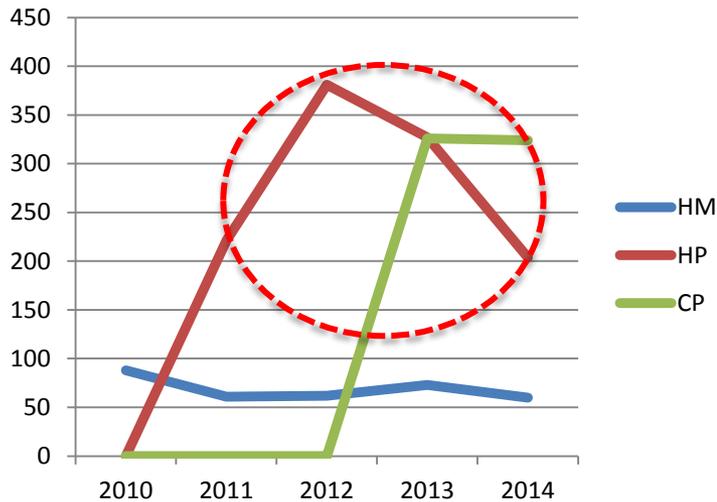
No infusion no urinary retention: OD

Time-specific RA: Prilo-Chloro: OD

No recovery room-rapid home discharge: OD

No need to organize the program relative to anesthesia: OD

Money: 8 euros + Materials



Conclusion

doses



Chloro-procaine NB : Fast

Prilocaine HB: Medium

Marcaine HB : Long

adjuvants



Baricity-Positions

indications

Conclusion

**Surgeon
Local organization
Nurses**



**Anesthesiologists feel free to
perform adapted spinal
anesthesia**



Put the right dose of the right drug in the right place ...

For the right surgery and with the right surgeon

Conclusion

New tools

New drugs

New organizations

New education

Performance

