
XIII congresso nazionale
simeu
GENOVA 30 MAG - 1 GIU 2024

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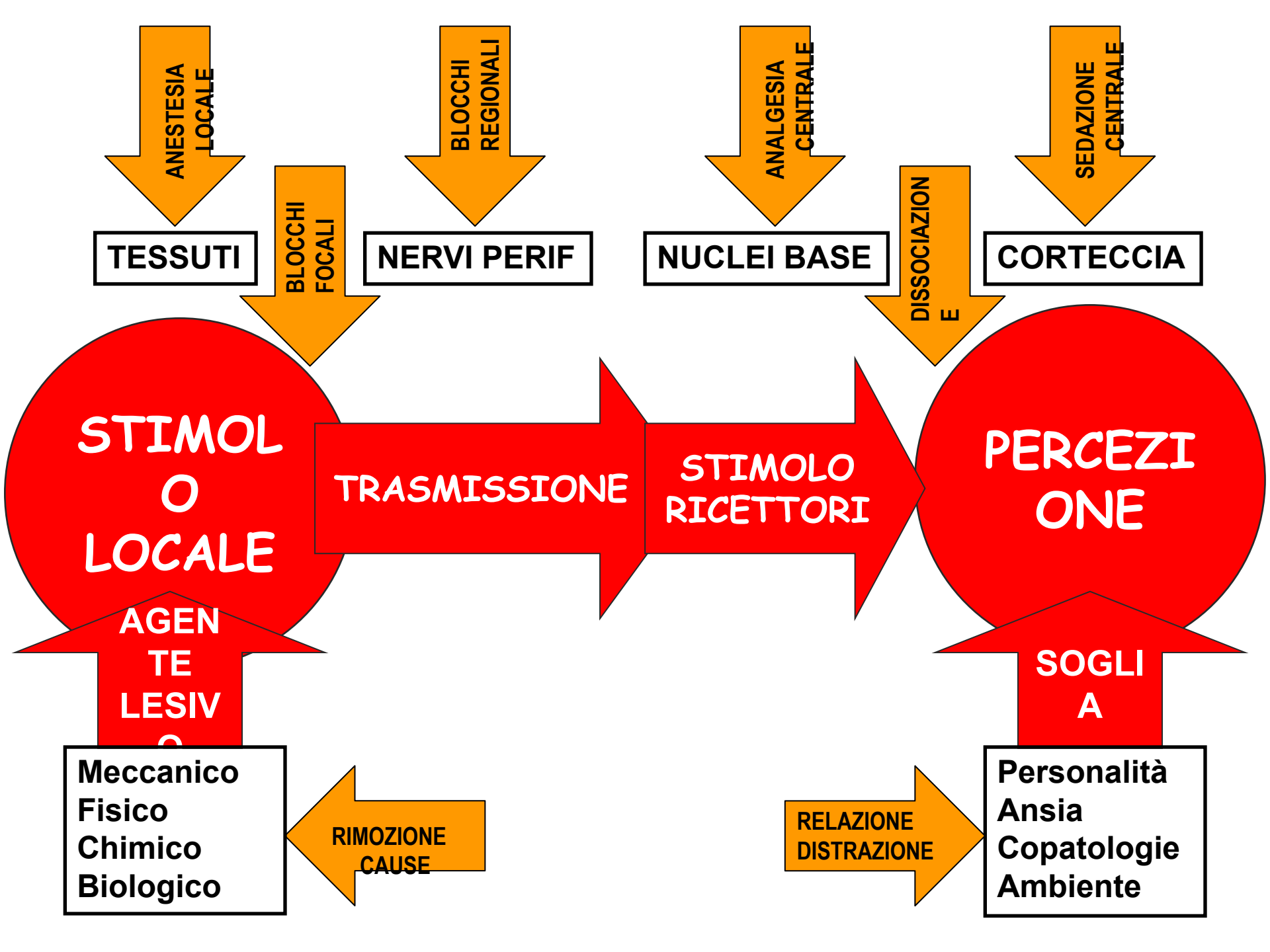
I BLOCCHI NERVOSI ECOGUIDATI NEL TRATTAMENTO MULTIMODALE DEL DOLORE

31 maggio 2024

Gian A. Cibinel – Medico d'Urgenza
ASL Torino 3


ANESTESIA LOCALE
BLOCCHI REGIONALI
ANALGESIA CENTRALE
SEDAZIONE CENTRALE
TESSUTI
BLOCCHI FOCALI
NERVI PERIF
NUCLEI BASE
DISSOCIAZIONE
CORTECCIA
STIMOLO LOCALE
TRASMISSIONE
STIMOLO RICETTORI
PERCEZIONE
AGENTE LESIVO
SOGLIA
Meccanico
Fisico
Chimico
Biologico
RIMOZIONE CAUSE
RELAZIONE DISTRAZIONE
Personalità
Ansia
Copatologie
Ambiente

American College of Emergency Physicians®

ADVANCING EMERGENCY CARE

POLICY STATEMENT

Approved April 2021

Ultrasound-Guided Nerve Blocks

It is the position of ACEP that UGNBs are not only within the scope of practice of emergency physicians,[6] but represent a core component of a multimodal pathway to control pain for patients in the ED.

Ultrasound guidance improves efficacy, efficiency, and safety when compared to the blind approach.[24-26] UGNBs offer patient-centered benefits while avoiding dangerous adverse side effects encountered with opioid medications, non-opioid adjuncts and procedural sedation.[27-28]

2021

Acad Emerg Med Educ Training 2021;5:1-7

ORIGINAL CONTRIBUTION

Defining an Ultrasound-guided Regional Anesthesia Curriculum for Emergency Medicine

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POCUS J 2022;7:253-61

POCUS Protocol

Ultrasound-Guided Nerve Blocks: Suggested Procedural Guidelines for Emergency Physicians

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Abstract

Acute pain is one of the most frequent, and yet one of the most challenging, complaints physicians encounter in the emergency department (ED). Currently, opioids are one of several pain medications given for acute pain, but given the long-term side effects and potential for abuse, alternative pain regimens are sought. Ultrasound-guided nerve blocks (UGNB) can provide quick and sufficient pain control and therefore can be considered a component of a physician's multimodal pain plan in the ED. As UGNB are more widely implemented at the point of care, guidelines are needed to assist emergency providers to acquire the skill necessary to incorporate them into their acute pain management.

Dtsch Arztebl Int 2023;120:815-22

Review article

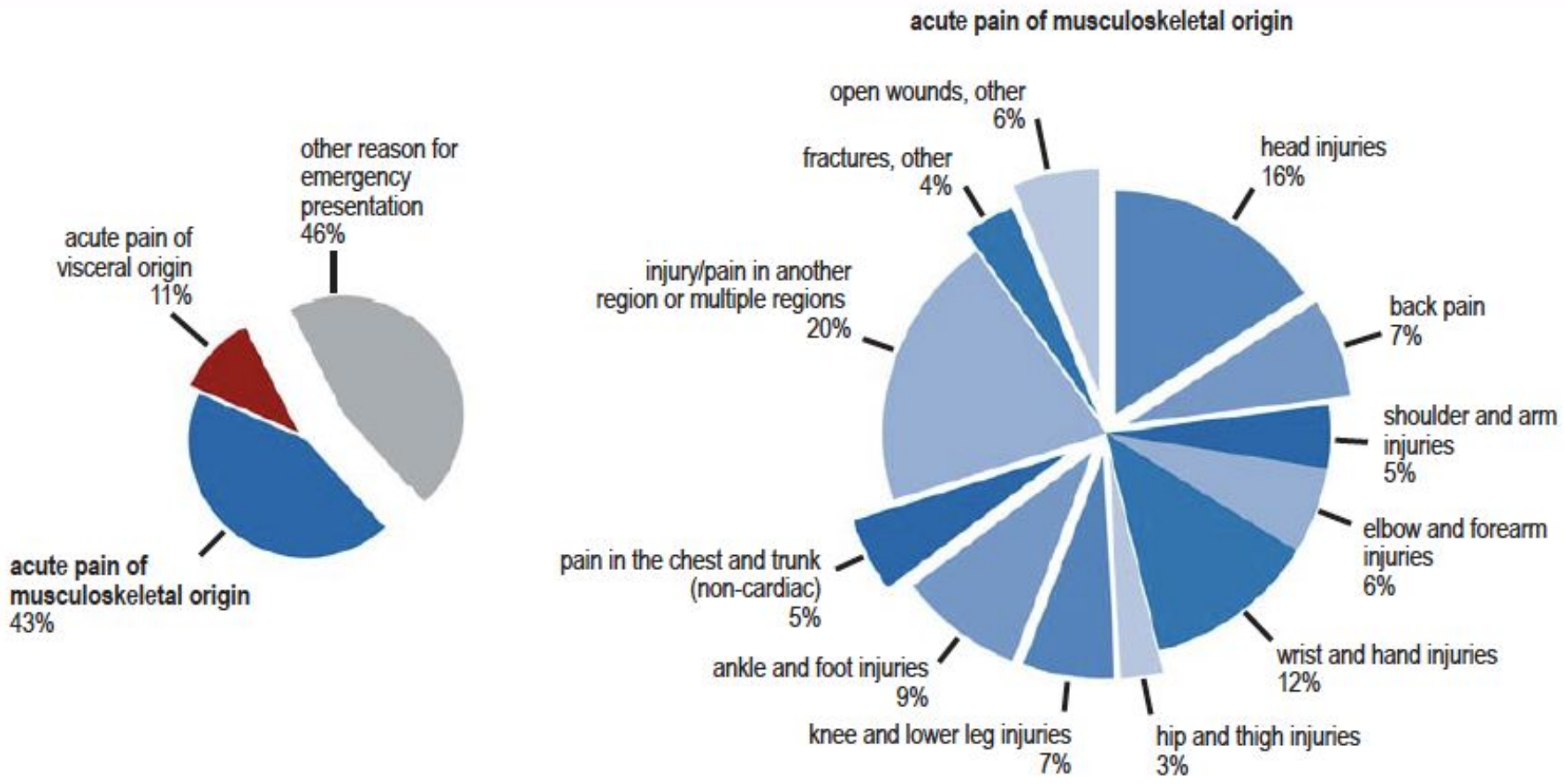
Regional Anesthesia for Acute Pain Treatment in Pre-Hospital and In-Hospital Emergency Medicine

Pain of Musculoskeletal Origin

by Andreas Fichtner, Benedikt Schrofner-Brunner, Tina Magath, Peik Mutze, and Thea Koch

Dtsch Arztebl Int 2023;120:815-22

FIGURE 1



Painful conditions and their frequencies in emergency patients, by body region. More than half of patients presenting for emergency treatment suffer from pain, and, in 43% of these patients, the pain is of musculoskeletal origin.

ECO BLOCCHI NERVOSI
LE CONDIZIONI

- Conoscenze fisio-patologiche sul dolore
- Conoscenze anatomiche sul sistema nervoso periferico
- Competenze ecografiche
- Competenze procedurali
- Presidi e farmaci
- Conoscenza indicazioni/controindicazioni e valutazione possibilità alternative per il controllo del dolore
- Scelta dei blocchi da implementare e predisposizione procedure operative
- Predisposizione procedure per la gestione delle complicanze

ECO BLOCCHI NERVOSI

DOVE

- Plessi e nervi prossimali/distali
- Bordi e piani muscolari/ossei
  - COLLO: bordo posteriore dello SCM
  - TORACE: piani del serrato anteriore
  - DORSO: piano dell'erettore spinale
  - ADDOME: piano del trasverso
  - BACINO: ala iliaca
- Sedi di lesione
  - focolai di frattura
  - articolazioni
  - tessuti con corpi estranei ritenuti

Tronchi

Diramazioni nervose

Terminazioni nervose

I BLOCCHI IN DEA
COSA - Risorse e tecnica

- Tecnologia e materiali
  - ecografo SI
  - elettrostimolatore NO
  - aghi “da siringa” o spinali
- Farmaci
  - lidocaina
  - altro AL a lunga durata di azione (ropi- o bupivacaina)
- Tecnica
  - blocchi estemporanei (single-shot)
  - precauzioni antisettiche come per accesso venoso periferico

ANESTETICI LOCALI
Quantità da somministrare

- Le **dosi massime** sono inversamente proporzio-nali alla durata di azione dei farmaci
  - BUPIVACAINA 2 mg/Kg
  - ROPIVACAINA 3 mg/Kg
  - LIDOCAINA 4 mg/Kg
- La **dose per il singolo blocco** può essere attorno alla metà della dose massima
- Oltre alla dose è fondamentale il volume di fluido che si impiega

ANESTETICI LOCALI

Volumi da somministrare

- **Blocchi prossimali degli arti**
  - ➪ 20 – 30 mL
- **Blocchi fasciali**
  - ➪ 20 – 30 mL
- **Blocchi distali degli arti**
  - ➪ 3 – 10 mL

ECO BLOCCHI NERVOSI

COME

- Valutazione preliminare dell'anatomia locale nervosa e dei rapporti
- Definizione del tipo di approccio
  - nervo: trasversale/obliquo o longitudinale
  - ago: in-plane (IP) o out-of-plane (OOP)
- Preparazione del materiale e della sonda
- Preparazione del campo e deglioperatori
- Visualizzazione del nervo o del piano
- Visualizzazione dell'ago (progressione fino al bersaglio)
- Iniezione dell'anestetico con visualizzazione della diffusione perinervosa o parafasciale

ECO BLOCCHI NERVOSI

COMPLICAZIONI da evitare

- Fallimento del blocco
- Puntura vascolare
- **LAST –** Tossicità Sistemica da Anestetici Locali
- Danni nervi periferici
- Complicanze cervicali
  - paralisi simpatico
  - anestesia neuroassiale
  - paralisi ricorrente
  - paralisi n. frenico
- Complicanze toraciche
  - paralisi emidiaframma
  - pneumotorace

ECO BLOCCHI NERVOSI

PERCHE'

- Efficacia nel controllo del dolore
- Risparmio/annullamento dell'uso di analgesici non oppiacei e oppiacei, con riduzione/annullamento degli effetti avversi correlati (LAST inclusa)
- Risparmio/annullamento dell'uso di sedativi, con riduzione/annullamento degli effetti avversi correlati
- Efficacia e sicurezza maggiori rispetto ai blocchi nervosi guidati con elettrostimolazione
- Riduzione dei tempi di gestione e di permanenza in DEA/PS

ECO BLOCCHI NERVOSI
QUALI

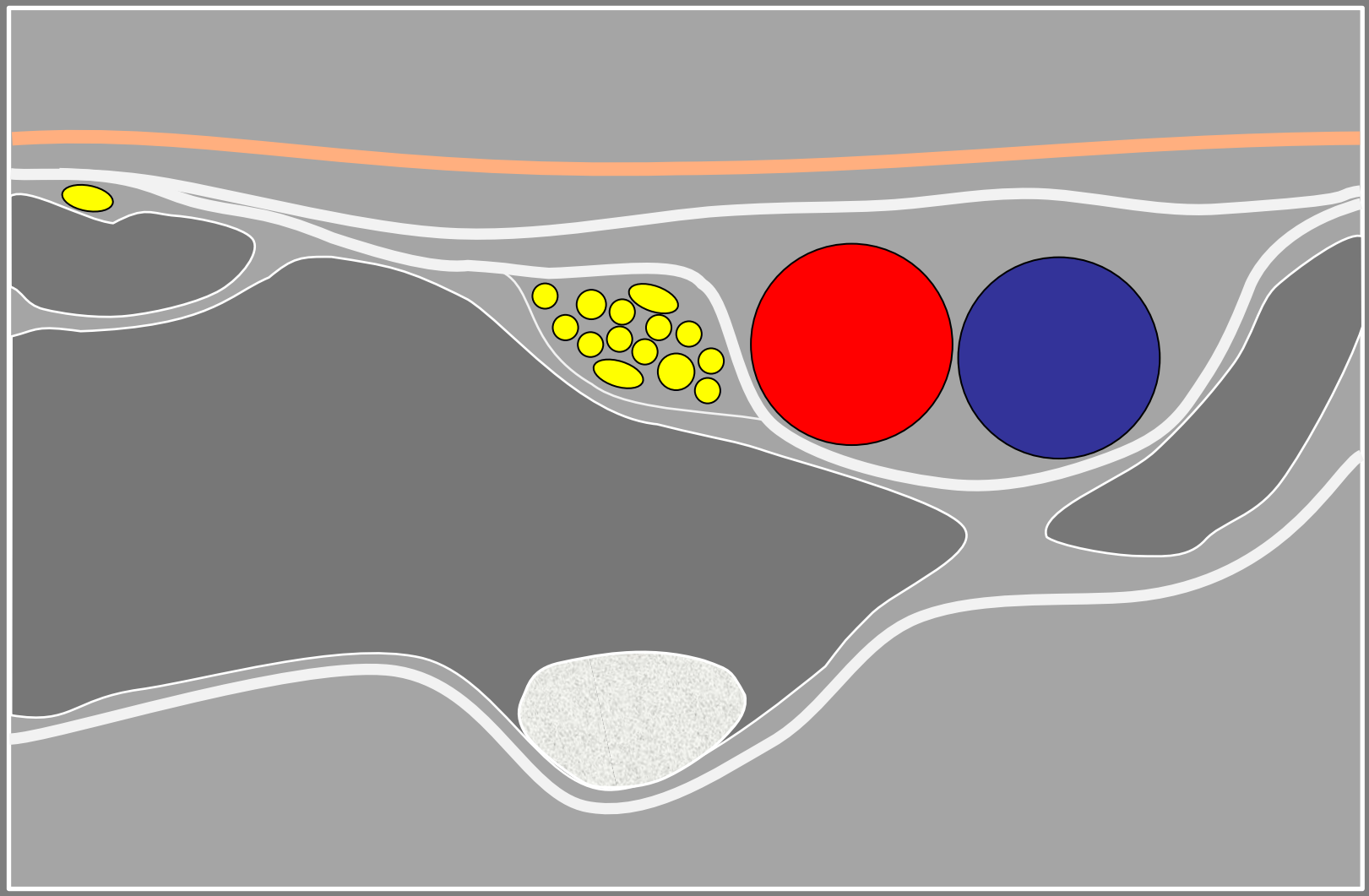
- Estremità
  - Plesso brachiale
  - **Radiale, ulnare, mediano**
  - **Femorale, fascia iliaca e PENG**
  - Sciatico e popliteo
- Collo e Tronco
  - Bordo posteriore dello SCM (plesso cervicale)
  - **Piano del serrato anteriore**
  - **Piano dell'erettore spinale**
  - Piano del trasverso
  - Bordo dell'ala iliaca (nervi cluneali)

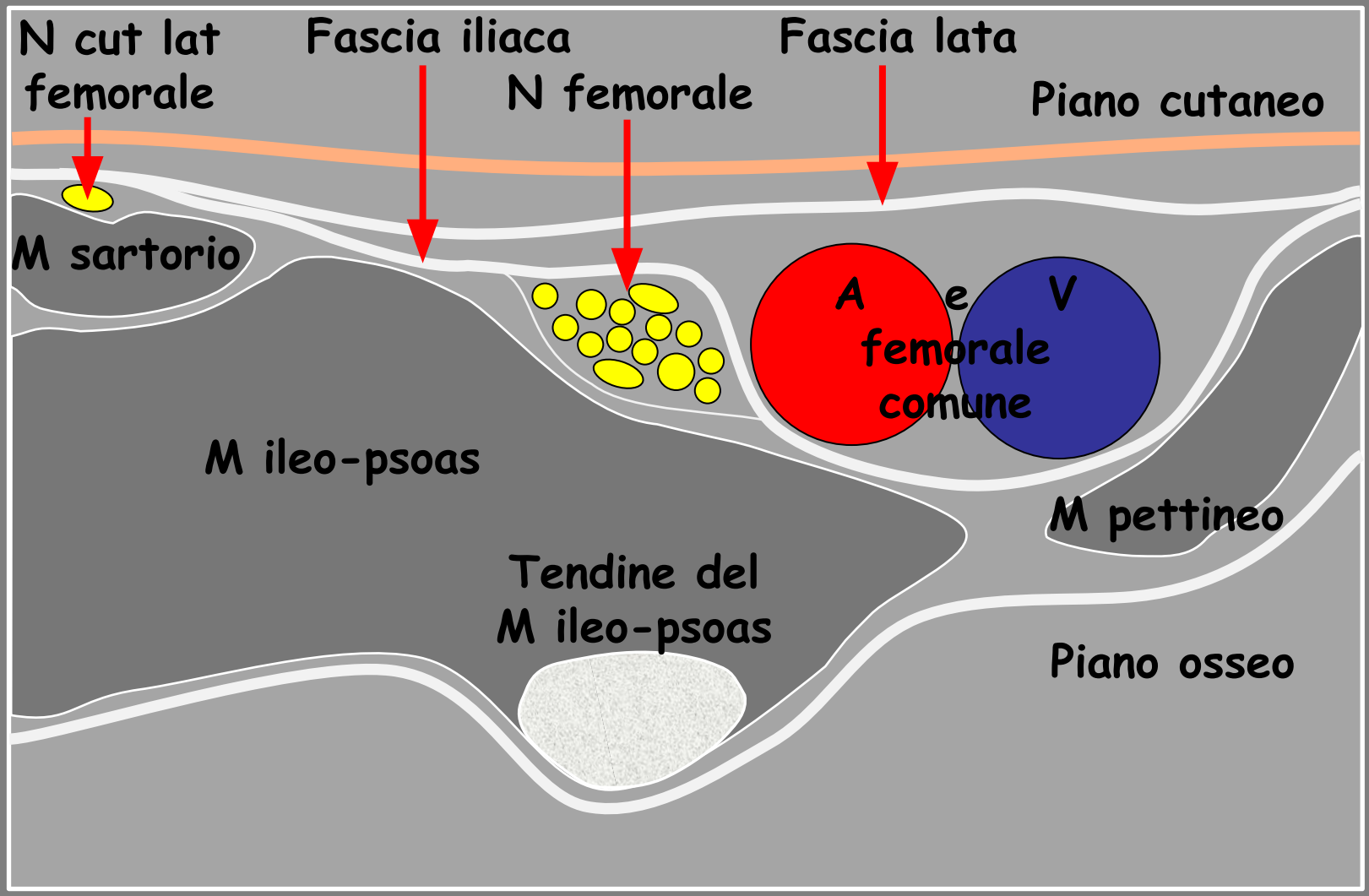
BLOCCHI PRIMARI

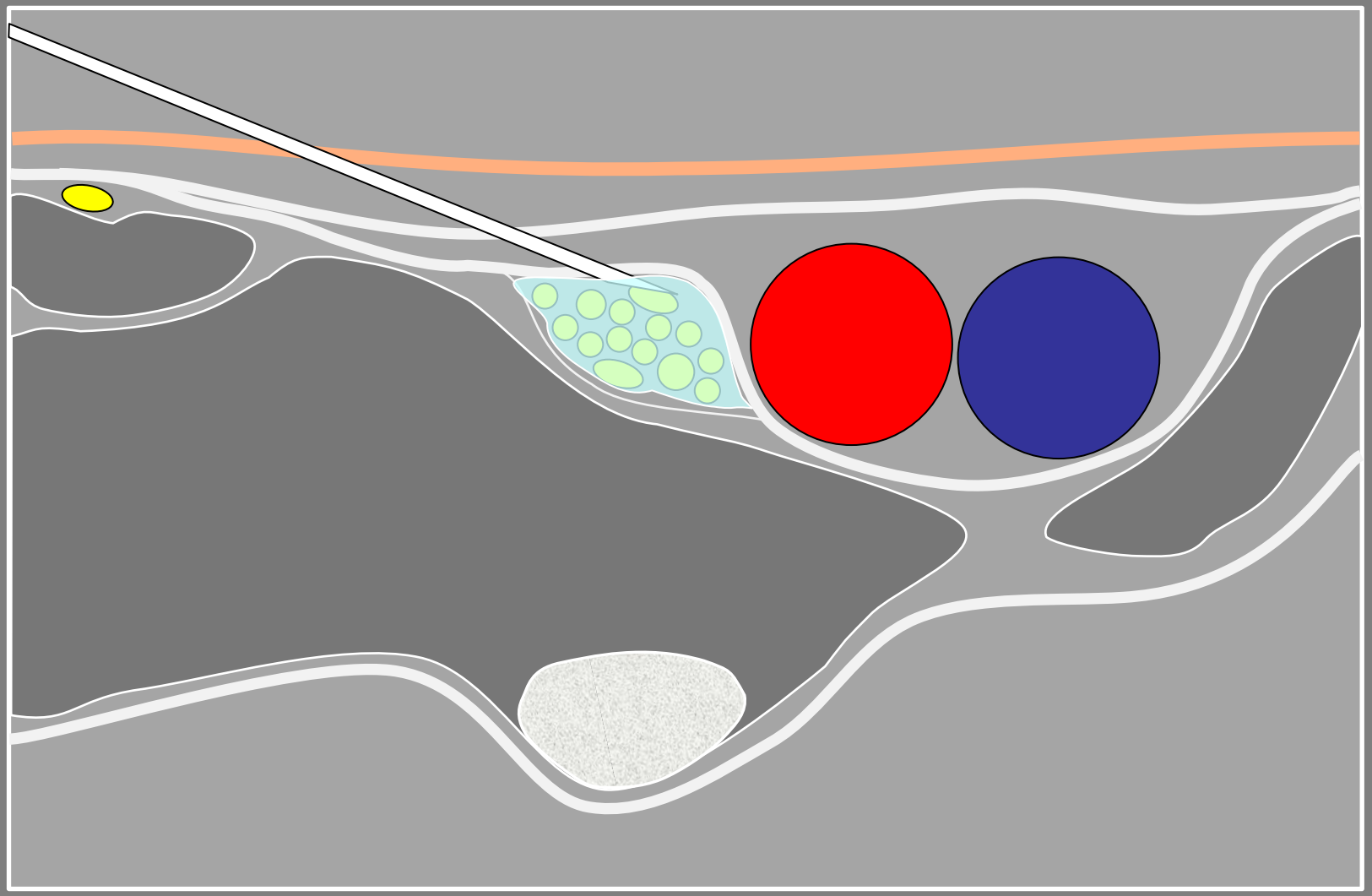
REGIONAL BLOCKS	ANESTHESIOL Plan A Blocks *	EMERG MED Primary Blocks
ESP – Erector Spinae	X	**X**
SAP – Serratus Anterior		**X**
RSP – Rectus Sheath	X	
IS – Interscalene Brachial Plexus	X	X
SC – Supraclavear Brachial Plexus		X
Ax – Axillary Brachial Plexus	X	
FN – Femoral Nerve	X	**X**
FI – Fascia Iliaca		**X**
PENG – Pericapsular Nerve Group		**X**
AC – Abductor Canal	X	
PSN – Popliteal Sciatic Nerve	X	X
MUR – Median-Ulnar-Radial Nerves		X

*PLAN A BLOCKS: Anaesthesia 2020; 75:293-7 - Reg Anesth Pain Med 2022;47:106-12

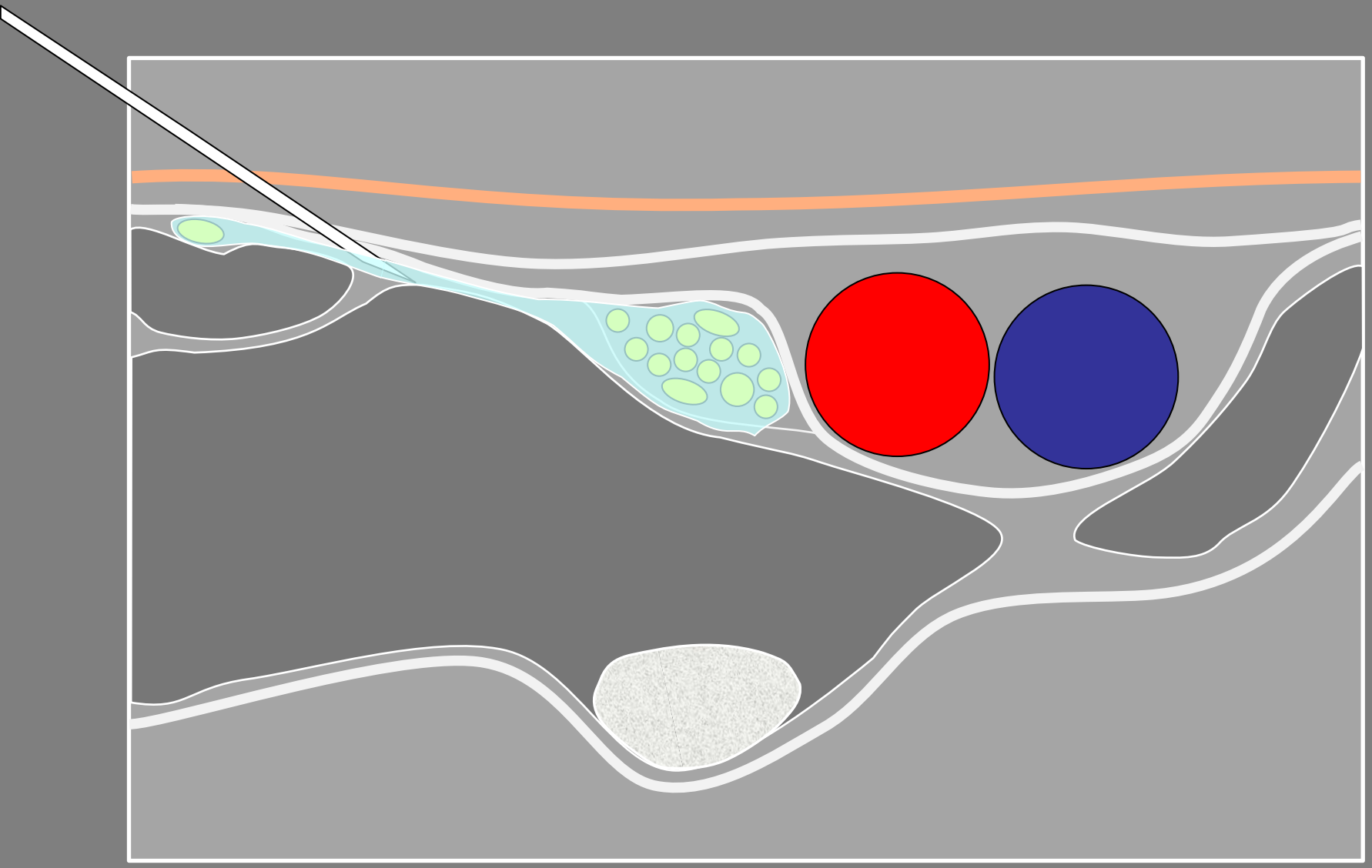
BLOCCHI ESTREMITA'



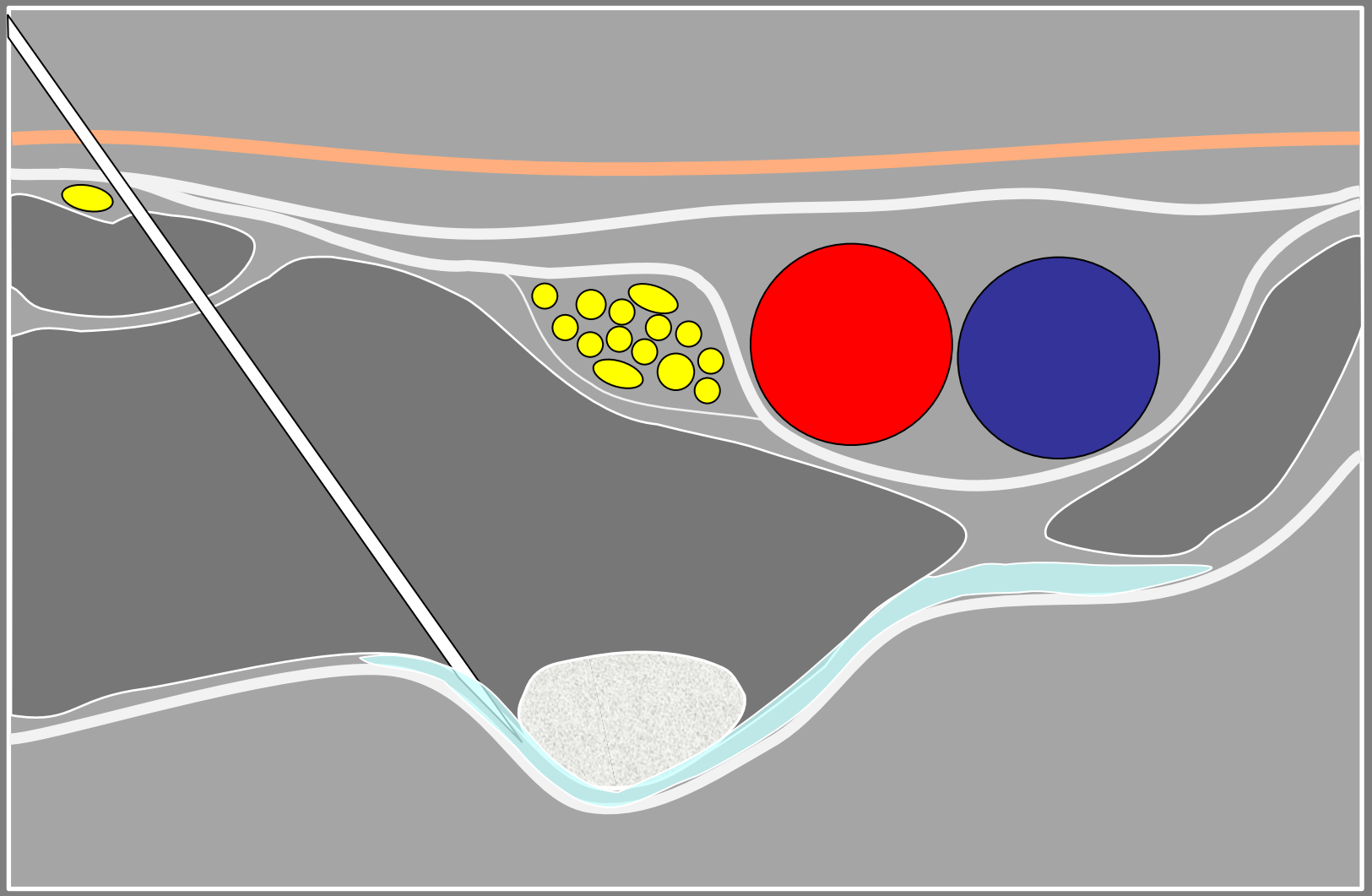

N cut lat femorale
Fascia iliaca
N femorale
Fascia lata
Piano cutaneo
M sartorio
A
e
V
femorale comune
M ileo-psoas
M pettineo
Tendine del M ileo-psoas
Piano osseo



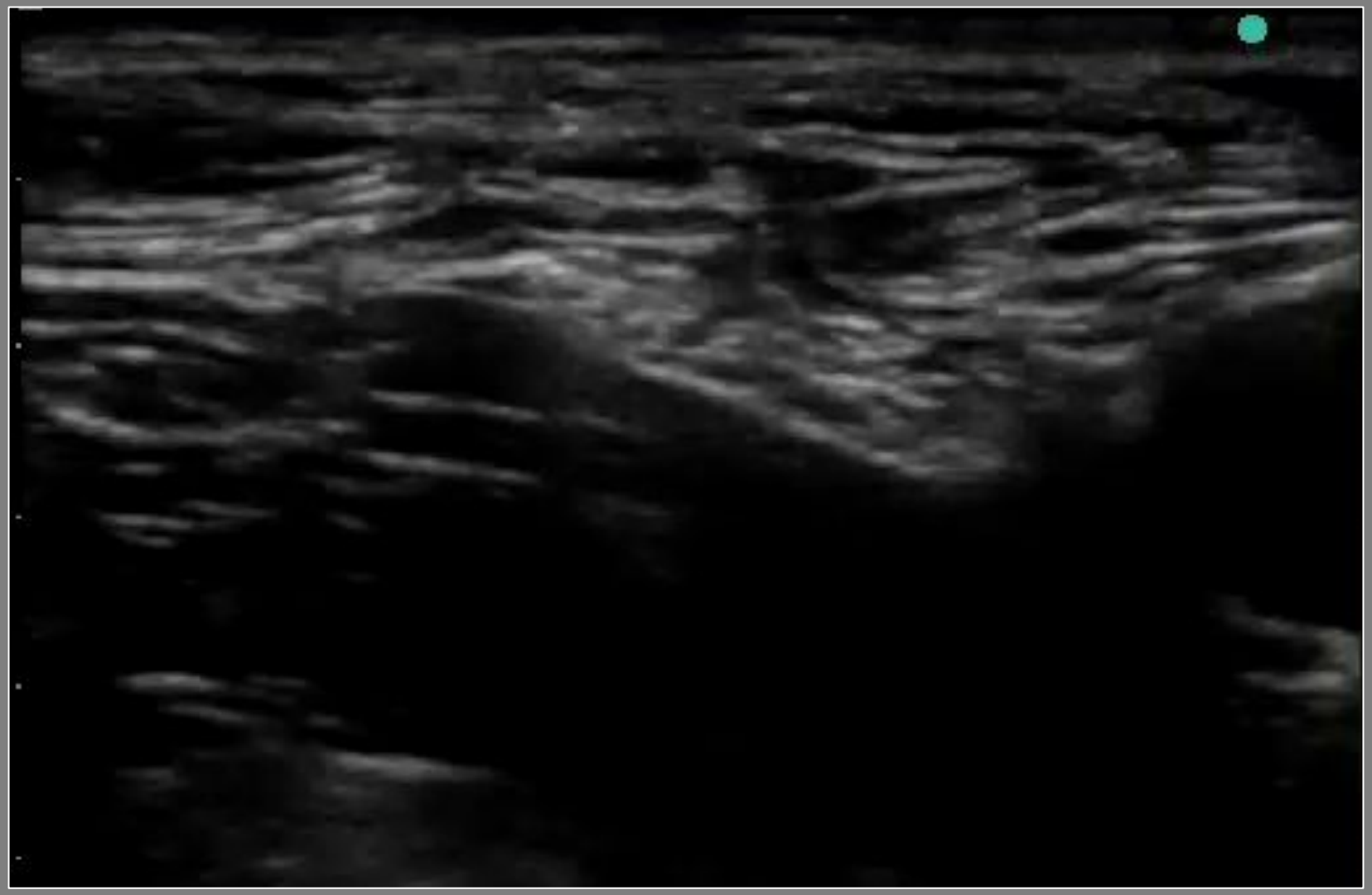
Blocco del nervo femorale



Blocco della fascia iliaca



Blocco del gruppo dei nervi pericapsulari (PENG)



Blocco del nervo femorale

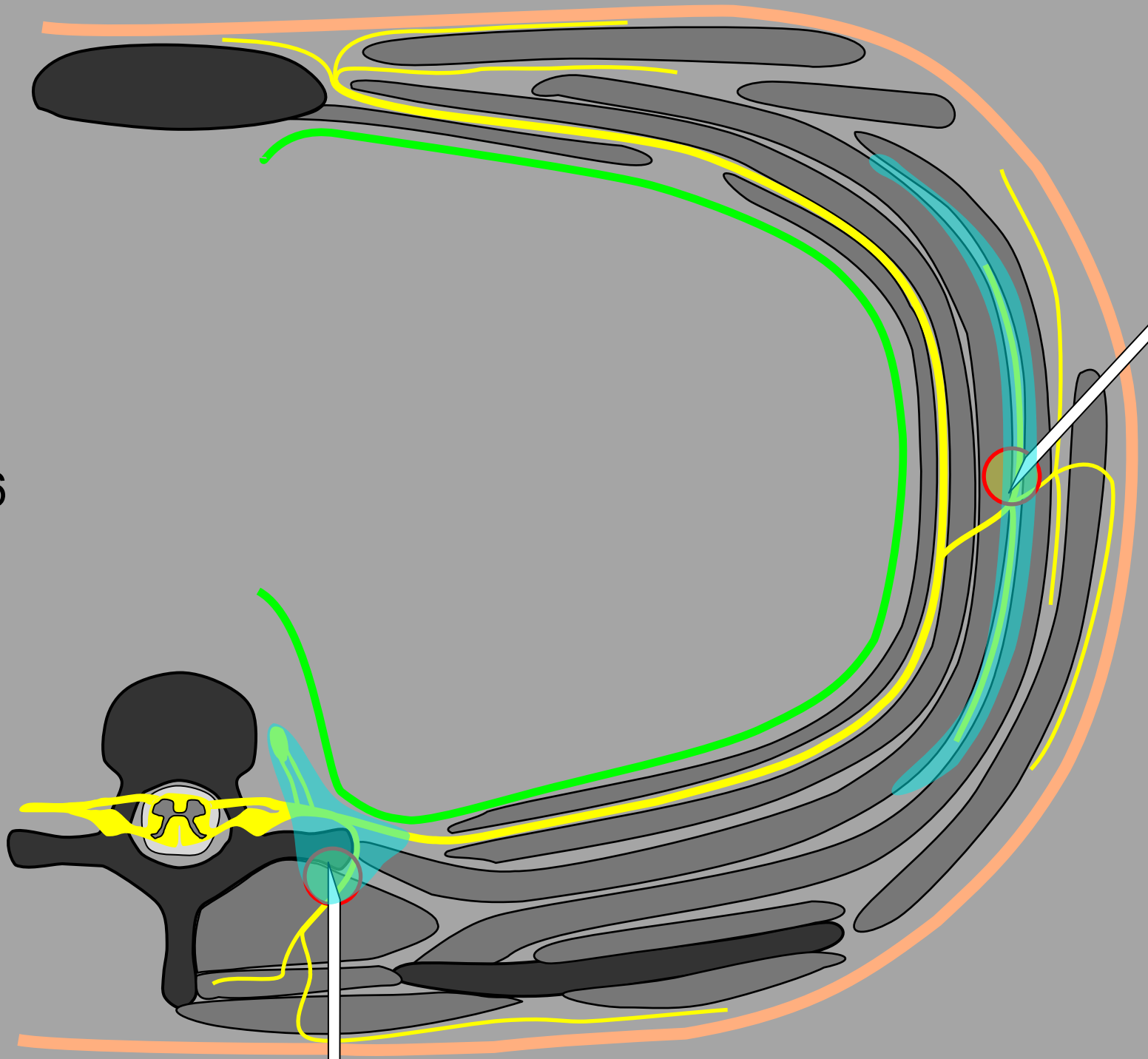
Blocchi ESTREMITA'
INDICAZIONI

PRE-H e PS

- Fratture e lussazioni (trattamento dolore spontaneo e prevenzione dolore procedurale)
- Trattamento ferite e ustioni
- Rimozione corpi estranei
- Drenaggio ematomi
- Drenaggio ascessi

BLOCCHI DEL TRONCO

T1 – T6



Blocchi TRONCO

Serrato

Anaesthesia 2013, 68, 1107–1113 doi:10.1111/anae.12344

Original Article

Serratus plane block: a novel ultrasound-guided thoracic wall nerve block

R. Blanco,[1] T. Parras,[2] J. G. McDonnell[3] and A. Prats-Galino[4]

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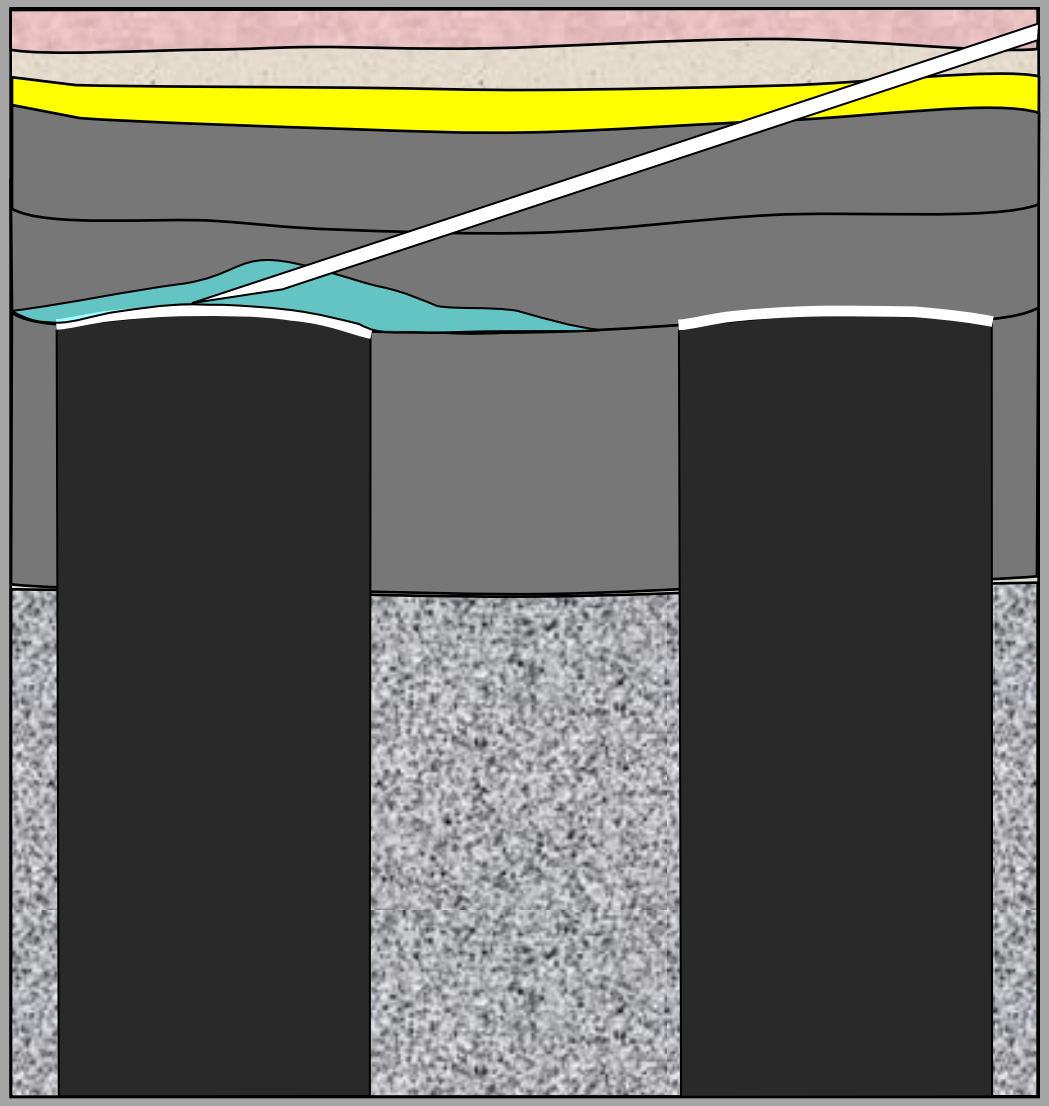
2 Clinical Fellow, Anaesthetic Department, University Hospital of Lewisham, London, UK
3 Consultant, Anaesthetic Department, Galway University Hospital, Galway, Ireland
4 Professor of Human Anatomy and Embryology, Faculty of Medicine, University of Barcelona, Barcelona, Spain

Summary

We present a novel ultrasound-guided regional anaesthetic technique that may achieve complete paraesthesia of the hemithorax. This technique may be a viable alternative to current regional anaesthetic techniques such as thoracic paravertebral and central neuraxial blockade, which can be technically more challenging and have a higher potential side-effect profile. We performed the serratus block at two different levels in the midaxillary line on four female volunteers. We recorded the degree of paraesthesia obtained and performed fat-suppression magnetic resonance imaging and three-dimensional reconstructions of the spread of local anaesthetic in the serratus plane. All volunteers reported an effective block that provided long-lasting paraesthesia (750–840 min). There were no side-effects noted in this initial descriptive study. While these are preliminary findings, and must be confirmed in a clinical trial, they highlight the potential for the serratus plane block to provide analgesia following surgery on the thoracic wall. We suggest that this novel approach appears to be safe, effective, and easy to perform, and is associated with a low risk of side-effects.

2013

SAP Block PROFONDO



Blocco SAP profondo 7a costa dx – Iniezione sub-fasciale

Blocco SAP
INDICAZIONI

PS

- Traumi toracici con fratture costali multiple laterali
- Drenaggio toracico
- Rimozione corpi estranei
- Drenaggio raccolte superficiali

Blocchi TRONCO

Erettore spinale

The Erector Spinae Plane Block

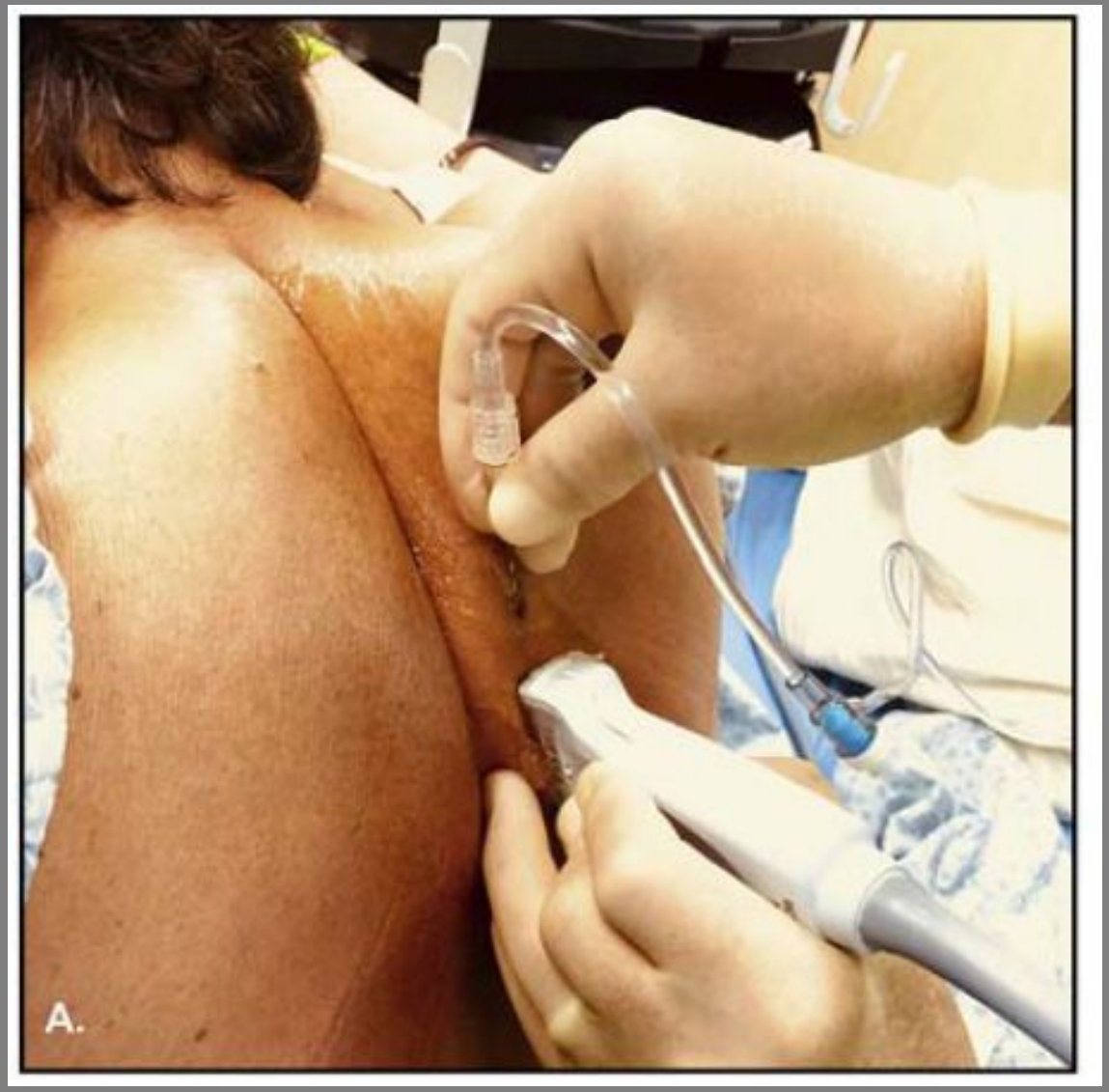
A Novel Analgesic Technique in Thoracic Neuropathic Pain

Mauricio Forero, MD, FIPP, Sanjib D. Adhikary, MD,† Hector Lopez, MD,‡ Calvin Tsui, BMSc,§ and Ki Jinn Chin, MBBS (Hons), MMed, FRCPC||*

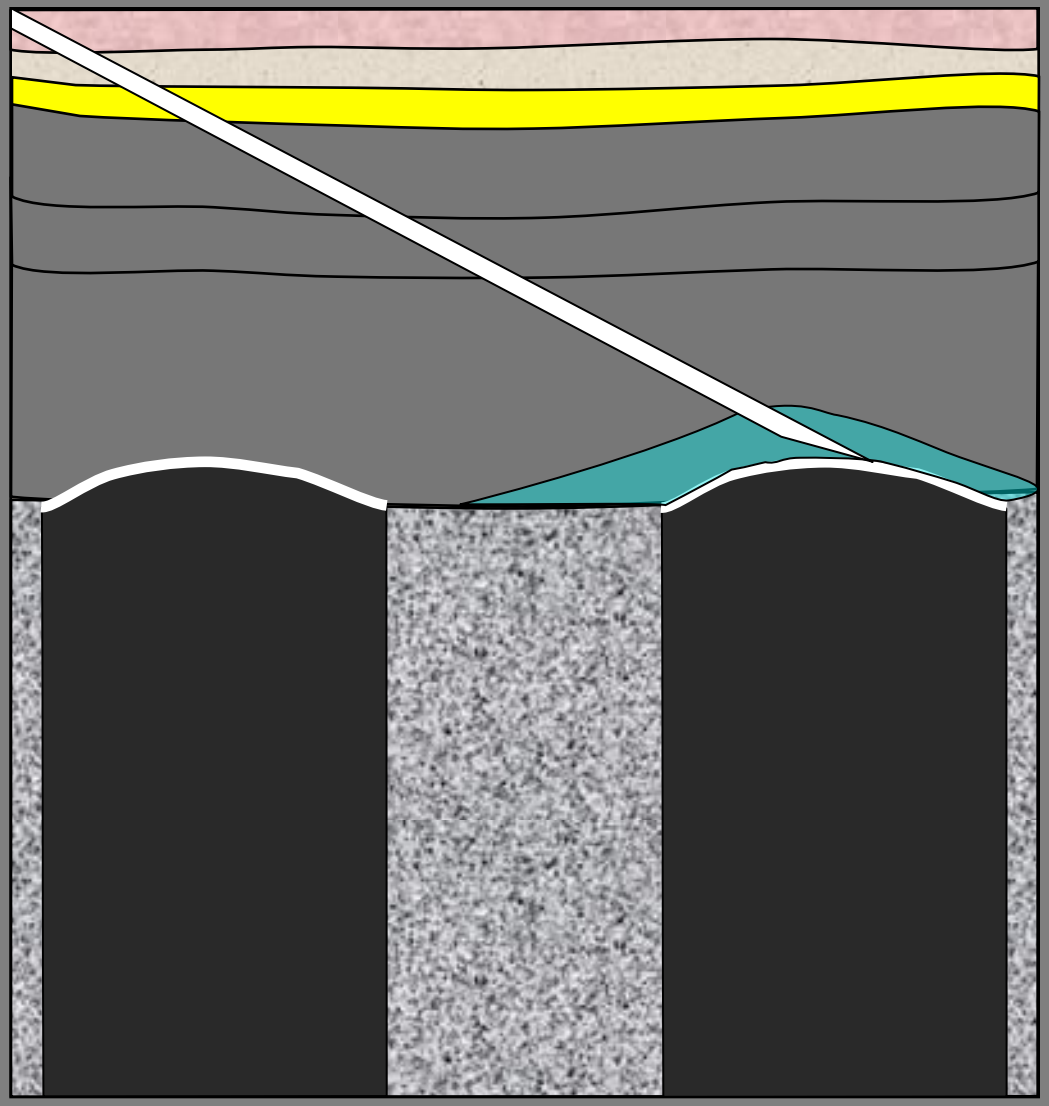
Abstract: Thoracic neuropathic pain is a debilitating condition that is often poorly responsive to oral and topical pharmacotherapy. The benefit of interventional nerve block procedures is unclear due to a paucity of evidence and the invasiveness of the described techniques. In this report, we describe a novel interfascial plane block, the erector spinae plane (ESP) block, and its successful application in 2 cases of severe neuropathic pain (the first resulting from metastatic disease of the ribs, and the second from malunion of multiple rib fractures). In both cases, the ESP block also produced an extensive multidermatomal sensory block. Anatomical and radiological investigation in fresh cadavers indicates that its likely site of action is at the dorsal and ventral rami of the thoracic spinal nerves. The ESP block holds promise as a simple and safe technique for thoracic analgesia in both chronic neuropathic pain as well as acute postsurgical or posttraumatic pain.

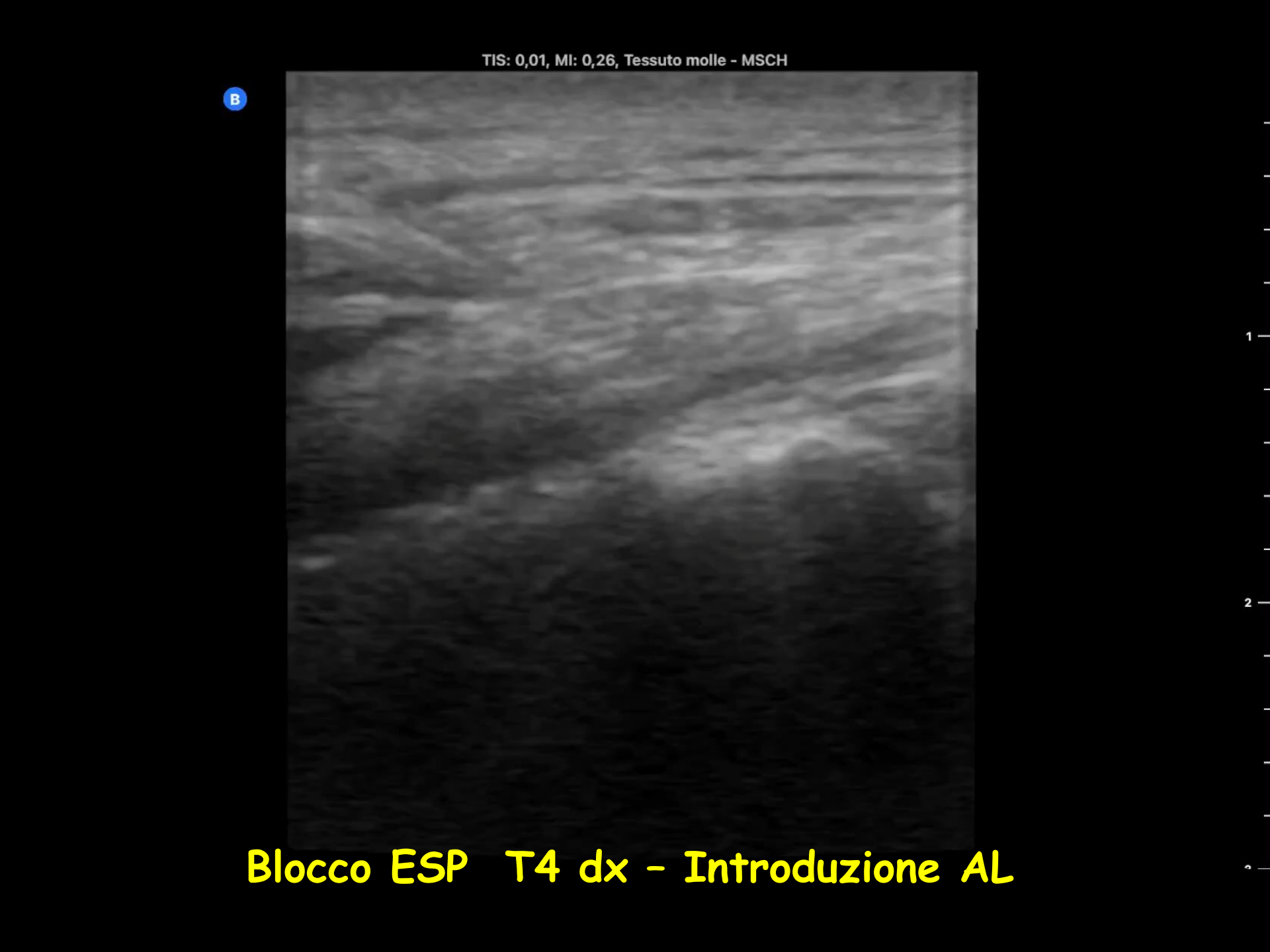
(*Reg Anesth Pain Med* 2016;41: 621–627)

2016


A.

ESP Block




TIS: 0,01, MI: 0,26, Tessuto molle - MSCH
B
1
2
Blocco ESP T4 dx - Introduzione AL

ESP block

DOLORE

Nocicettivo
- somatico
- viscerale

Neuropatico periferico

Acuto
Cronico

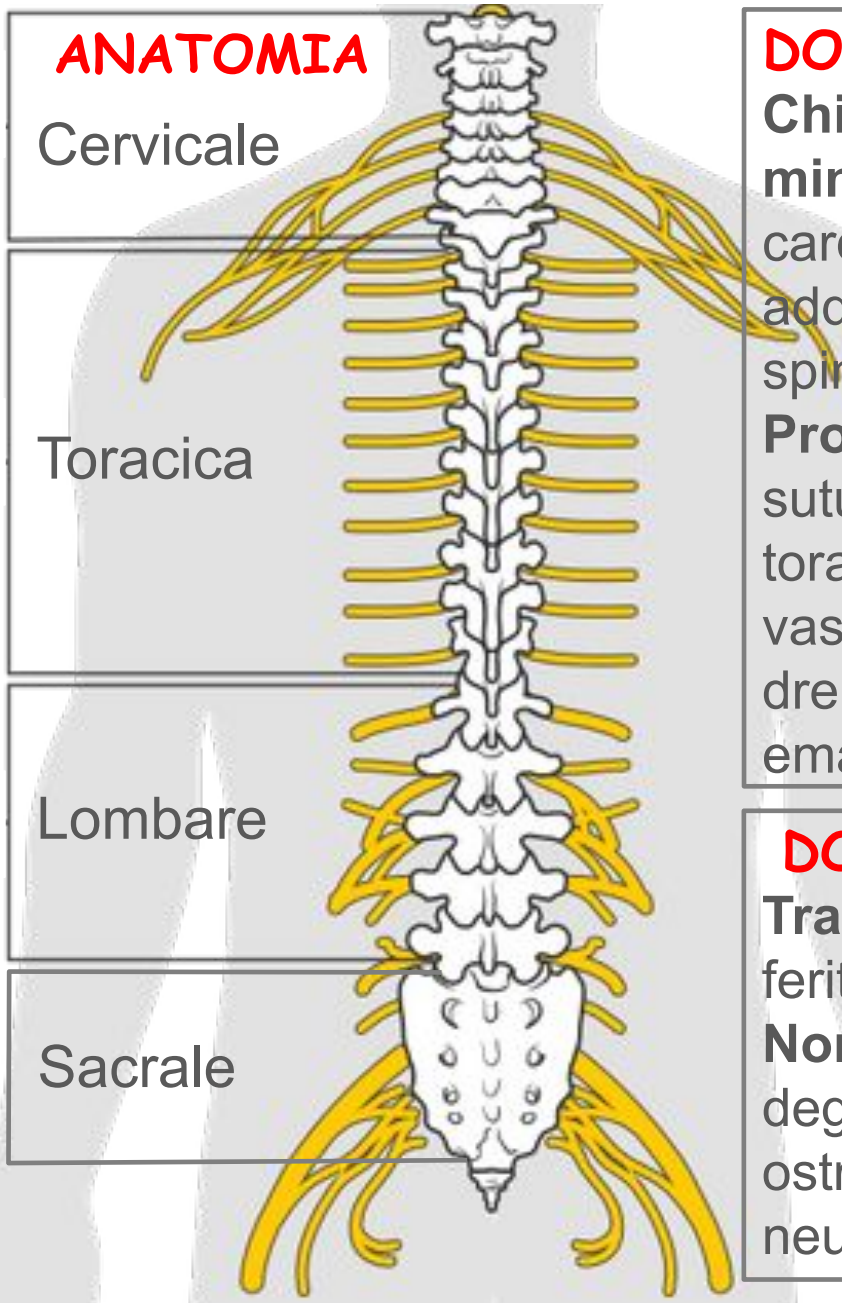
PAZIENTI

Pediatrici
Adulti
Anziani

SETTINGS

Unità tx dolore
Sala operatoria
PS
TI e TSI
Pre-H

ANATOMIA



DOLORE PROCEDURALE

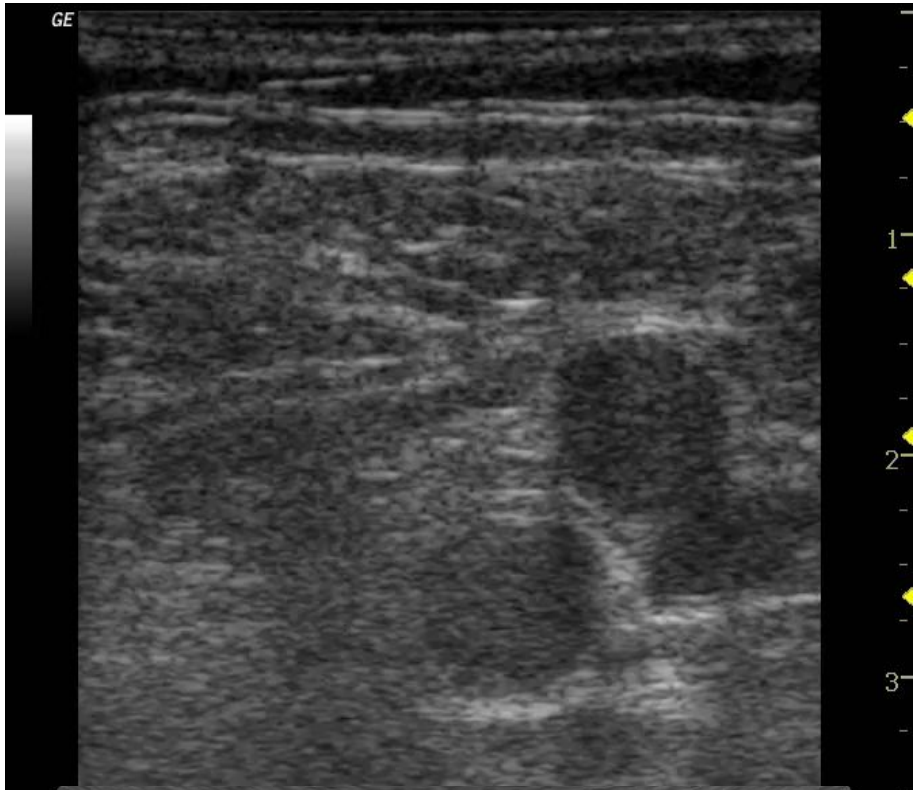
Chirurgia tradizionale e mini-invasiva (toracica, cardiaca, mammaria, addominale, ortopedica spinale e prossimale arti)
Procedure (riduzioni, suture, procedure toraco-addominali e vascolari, medicazioni, drenaggio ascessi ed ematomi)

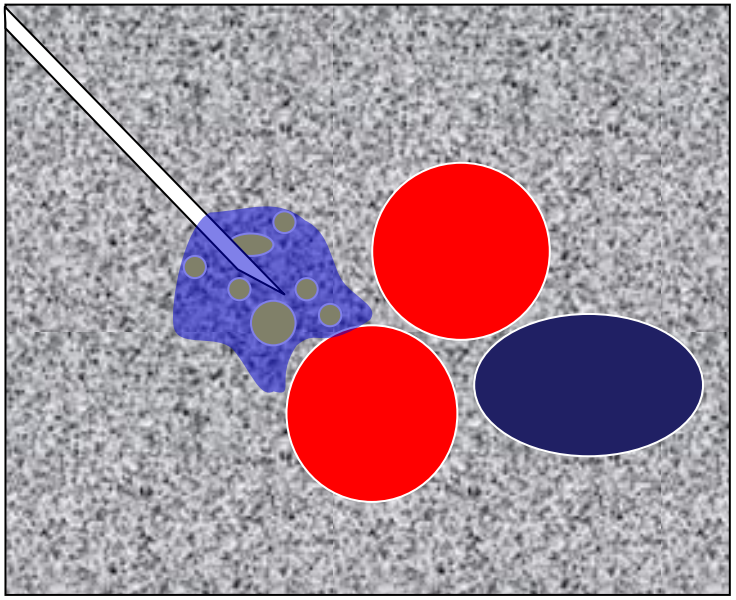
DOLORE SPONTANEO

Traumatico (ustioni, ferite, fratture/lussazioni)
Non traumatico (MSK degenerativo, flogistico, ostruttivo, neoplastico, neuropatico)

ANDIAMO
DAI PAZIENTI

ASLTO3 Pinerolo PS – 2012 set 12





FEMORAL BLOCK

Bupivacaina 75 mg / 30 mL

DOLORE TRAUMATICO

Frattura collo femorale dx

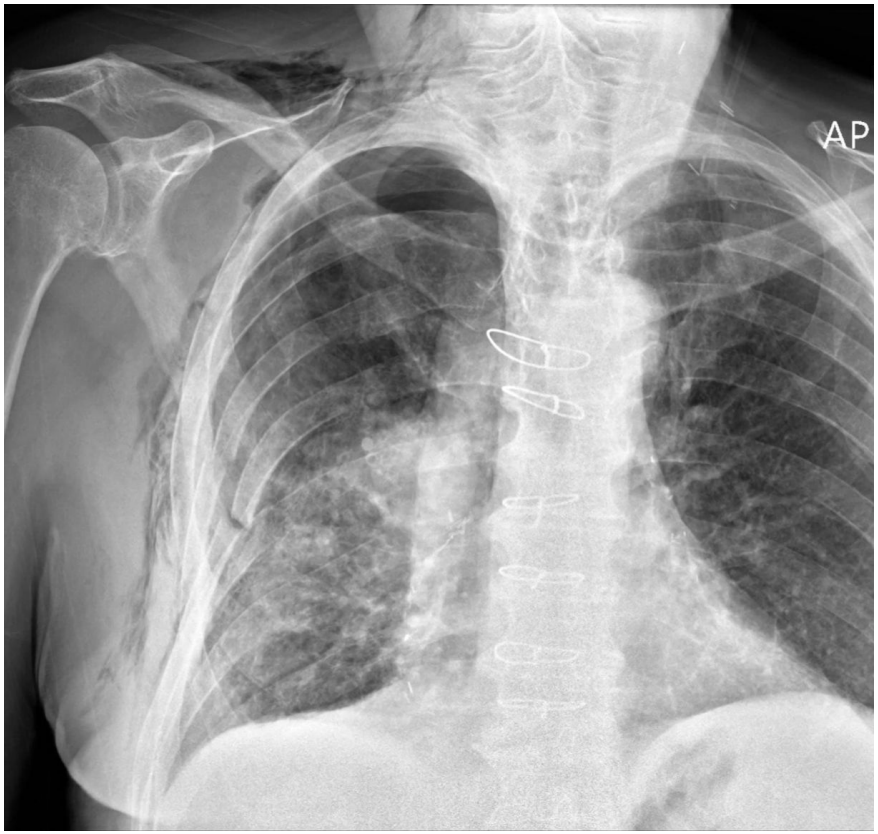
Tx: Morfina 5 mg e.v.

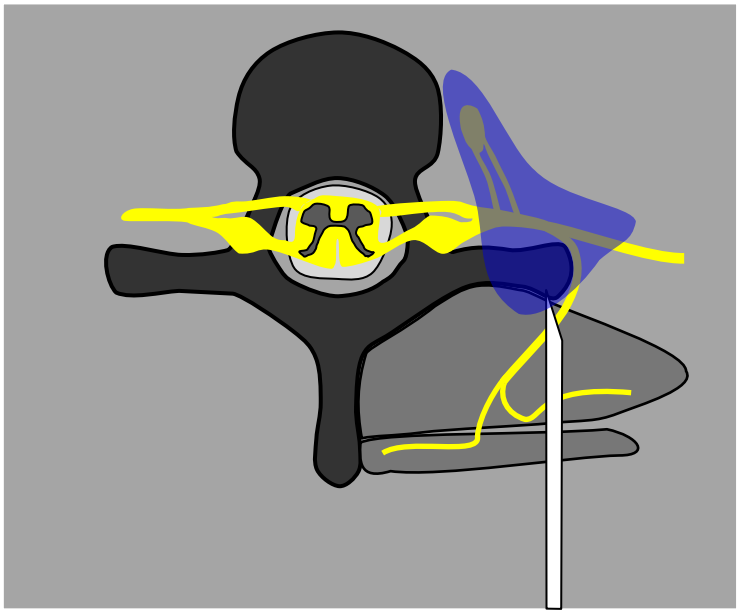
DOOR TO NEEDLE Time : 35'

NEEDLE TO BLOCK Time : 15'

NRS 8 → **NRS 2**

ASLTO3 Pinerolo PS – 2019 ott 31





ESP BLOCK – T5

Bupivacaina 62.5 mg / 25 mL

DOLORE TRAUMATICO

Fratture costali multiple dx

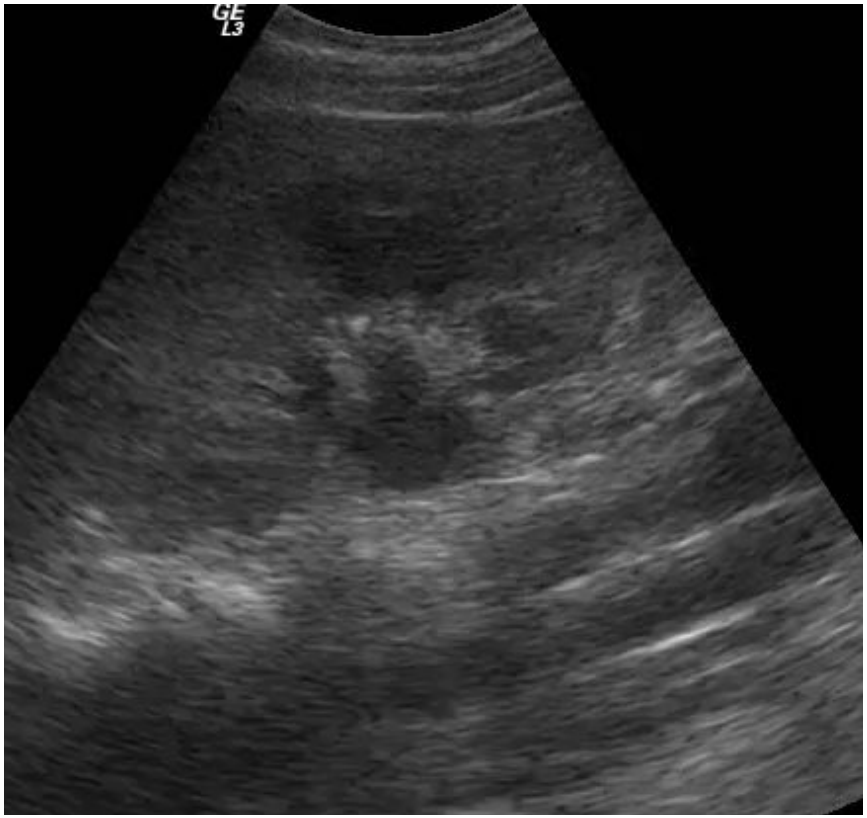
Tx: Morfina 5 + 5 mg e.v.

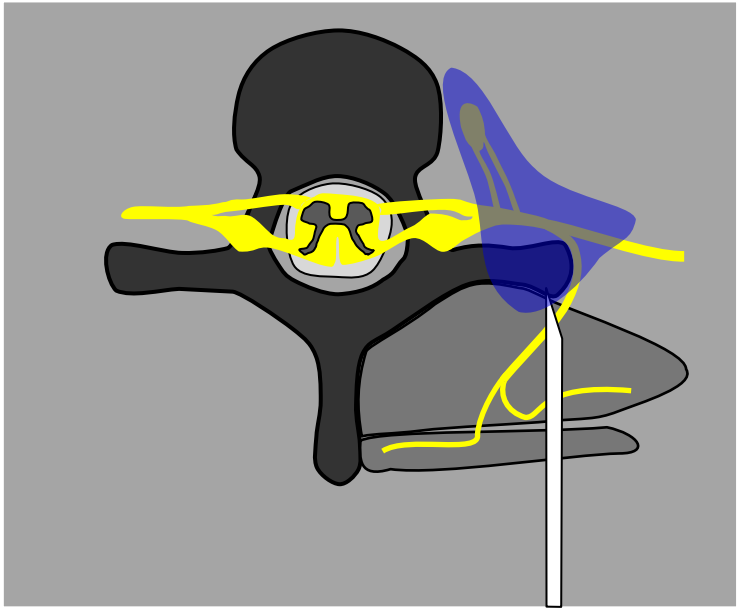
DOOR TO NEEDLE Time : 35'

NEEDLE TO BLOCK Time : 20'

NRS 10 → **NRS 3**

Int J Clin Pract 2021;75:e13789 - RCT 20 + 20 casi





ESP BLOCK – T8

Bupivacaina 75 mg / 30 mL

DOLORE OSTRUTTIVO

Colica renale dx

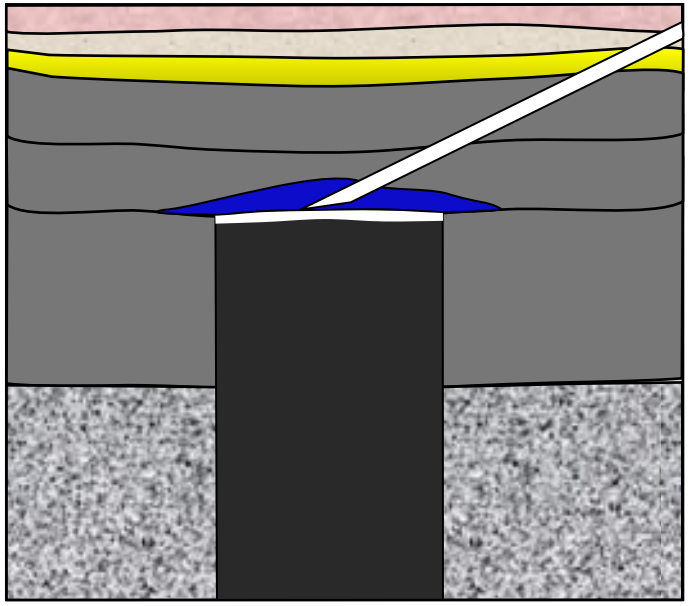
Tx: ESP block vs FANS
(dexketoprofene trometamolo)

DOOR TO NEEDLE Time :

NEEDLE TO BLOCK Time : 15'

NRS 10 → **NRS 1**

Domicilio del paziente a Torino – 2022 set 03



SERRATUS BLOCK

Ropivacaina 50 mg / 20 mL

DOLORE NEUROPATICO

Neuralgia post-herpetica dx

Tx: Paracetamolo, lidocaina TD, oppiacei, FANS

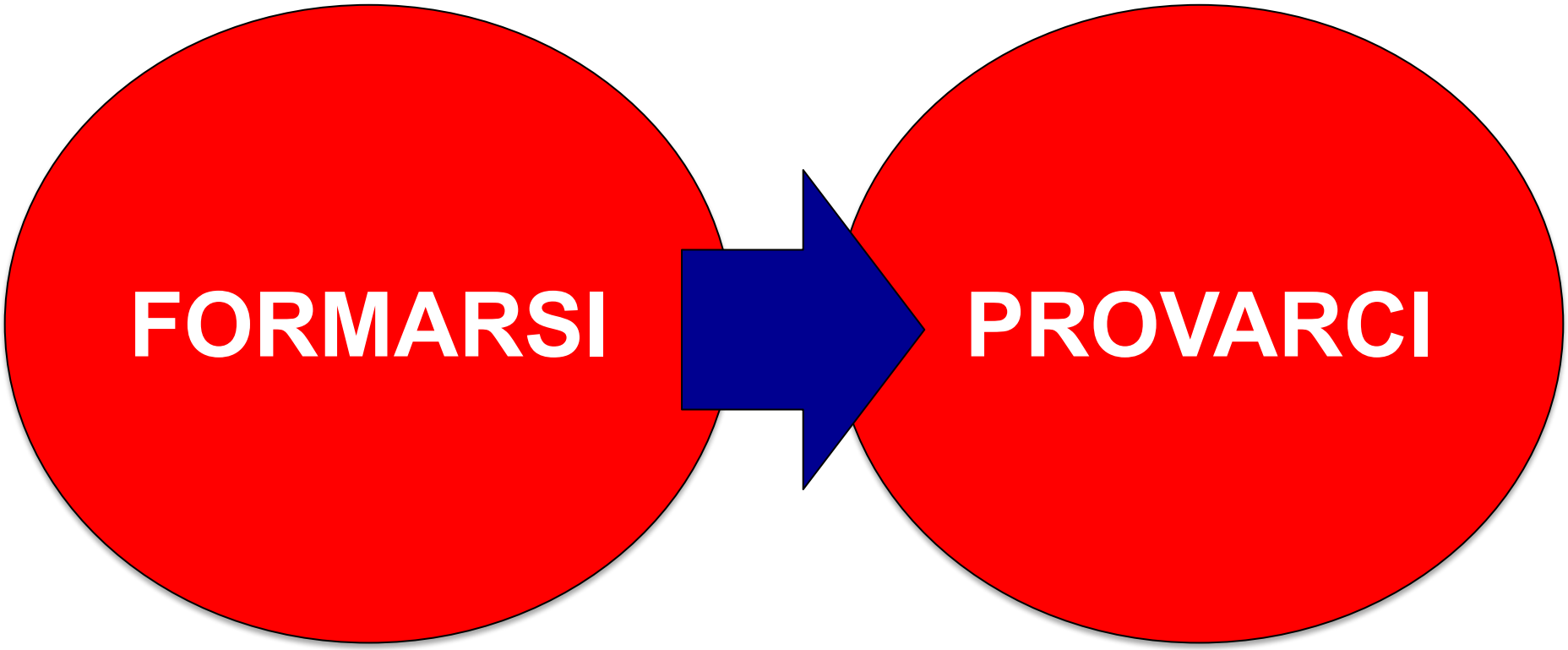
CONTACT TO NEEDLE Time : 20'

NEEDLE TO BLOCK Time : 15'

NRS 9 → **NRS 2**

BLOCCHI NERVOSI

COME



BLOCCHI NERVOSI IN MEU
UN REGISTRO ITALIANO ?

STUDIO PILOTA – ASL TO3 Pinerolo

Stefano Baldassare e Alessia Beux

- Serrato
- ESP
- Femorale
- Fascia iliaca
- PENG
- Mediano
- Ulnare


GRAZIE !
E BUON LAVORO