The European Society
of Regional Anaesthesia
& Pain Therapy
ESRA ITALIA

ESRA ITALIAN CHAPTER

30° NATIONAL MEETING

13-15 NOV 2025

NAPOLI
HOTEL RAMADA

Presidents:
Giuseppe Servillo, Fabrizio Fattorini

MZ EVENTS

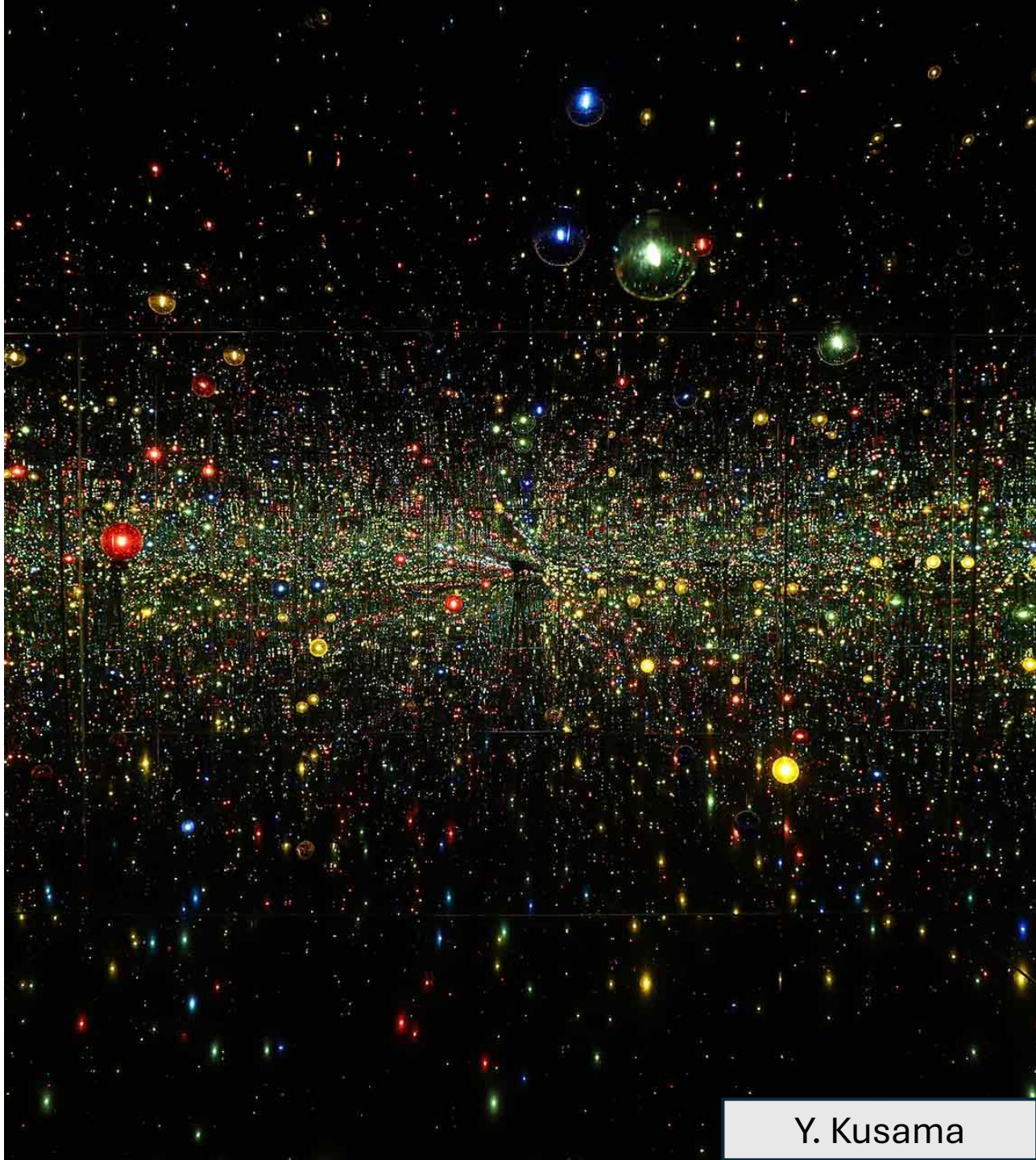
UPDATE ON NEURAXIAL ANESTHESIA

Thoracic spinal anesthesia: it's time to move forward

Benedetta Basta
Dirigente Medico UO Anestesia e Rianimazione
ASST Melegnano-Martesana MILANO

Disclosures

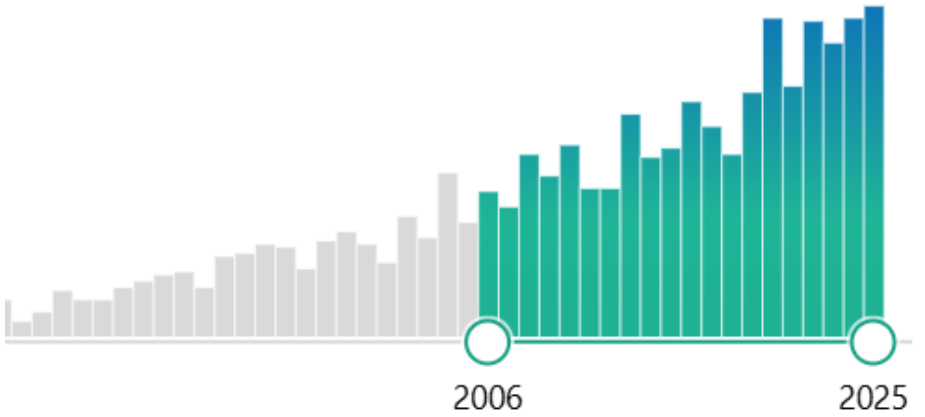
No conflict of interest to declare



1,216 results

PubMed®

thoracic spinal anesthesia



Cureus
Part of SPRINGER NATURE

Indications and Technique for Thoracic Segmental Spinal Anesthesia in Clinical Practice: A Narrative Review

Imran Ahmed Khan [1], Nurul Haque Siddiqui [2], Srikrishna S. Ramachandra [1], Abhijit Nair [3]

Online version at http://www.minervamedica.it

Minerva Anestesiologica 2020 March;86(3):261-9
DOI: 10.23736/S0375-9393.19.13896-5

ORIGINAL ARTICLE

Thoracic continuous spinal anesthesia for high-risk comorbid older patients undergoing major abdominal surgery: one-year experience of an Italian geriatric hospital

Francesco SPANNELLA [1, 2] *, Federico GIULIETTI [1, 2], Elisa DAMIANI [3], Lucia FALOIA [4], Massimo STRONATI [4], Alfredo VENEZIA [4], Paolo VINCENZI [5], Daniele CASTELLANI [6], Gianfranco BOCCOLI [5], Marco DELLABELLA [6], Marina GIAMPIERI [4], Riccardo SARZANI [1, 2], Roberto STARNARI [4]

BJA

British Journal of Anaesthesia, 130 (1): e56–e65 (2023)

doi: 10.1016/j.bja.2022.03.008
Advance Access Publication Date: 4 April 2022
Review Article

THORACIC ANAESTHESIA AND RESPIRATION

Defining the role of thoracic spinal anaesthesia in the 21st century: a narrative review

Johannes J. le Roux*, Koji Wakabayashi and Zainub Jooma

Cureus
Part of SPRINGER NATURE

Segmental Thoracic Spinal Anesthesia for Critical Patients Undergoing Abdominal Surgeries: A Case Series and Literature Review

Yahya M. Aljuba [1, 2], Amro T. Alkadi [1], Majde G. Hamamdh [1]

BJA British Journal of Anaesthesia

COMMENTARY

Enhancing the safety of thoracic segmental spinal anaesthesia: Do's and don'ts

Paliwal, Naresh W.; Khan, Imran A.[1]

Author Information

Indian Journal of Anaesthesia 69(5):p 509-511, May 2025. | **DOI:** 10.4103/ija.ija_157_25

CORRESPONDENCE · Volume 135, Issue 1, P226-228, July 2025

Thoracic segmental spinal anaesthesia: expanding applications while keeping it safe

Naresh W. Paliwal [1] · Imran A. Khan [2]

Neuraxial Anaesthesia Development Society

NADS

श्रेयो मार्ग:

COMMENTARY

Enhancing the safety of thoracic segmental spinal anaesthesia: Do's and don'ts

Paliwal, Naresh W.; Khan, Imran A.[1]

Author Information

Indian Journal of Anaesthesia 69(5):p 509-511, May 2025. | *DOI:* 10.4103/ija.ija_157_25

Table 1: Do's and don'ts of thoracic segmental spinal anaesthesia

Do's	Don'ts
Gain a thorough knowledge of TSSA technique, drug doses and complications	Do not use TSSA in the absence of a valid clinical indication
Carefully select patients according to surgical needs and valid indications	Do not be rough; advance the spinal needle gently and slowly
Conduct standard preoperative evaluation as done in any anaesthetic	Do not continue advancing if paraesthesia is observed; withdraw and redirect
Obtain informed consent after explaining the full details of TSSA	Do not exceed recommended LA doses to avoid complications
Use imaging guidance (ultrasound/fluoroscopy) in difficult cases	Do not use multiple or inappropriate additives
Choose an appropriate position for the successful conduct of the procedure (sitting/lateral)	Do not over-sedate, especially when using high thoracic blocks without an airway plan
Choose a suitable needle type based on expertise and availability	Do not use TSSA for superficial neck/upper limb surgeries
Consider combined spinal–epidural technique in expected prolonged procedures	Do not attempt TSSA in difficult airway patients without a backup airway plan
Use multimodal analgesia to provide adequate postoperative pain relief	Do not use paediatric TSSA unless experienced with paediatric regional anaesthesia

PATIENT SELECTION

René Magritte Decalcomania (1966)

OFF-LABEL

Use in clinical practice of drugs that are already authorized but administered in a manner not conforming to the authorized summary of product characteristics.

The prescription of off-label drugs is therefore permitted and regulated from a legal standpoint and represents an important opportunity that can lead to significant advances in the understanding and treatment of certain diseases.

OFF-LABEL

DECRETO-LEGGE 17 febbraio 1998, n. 23

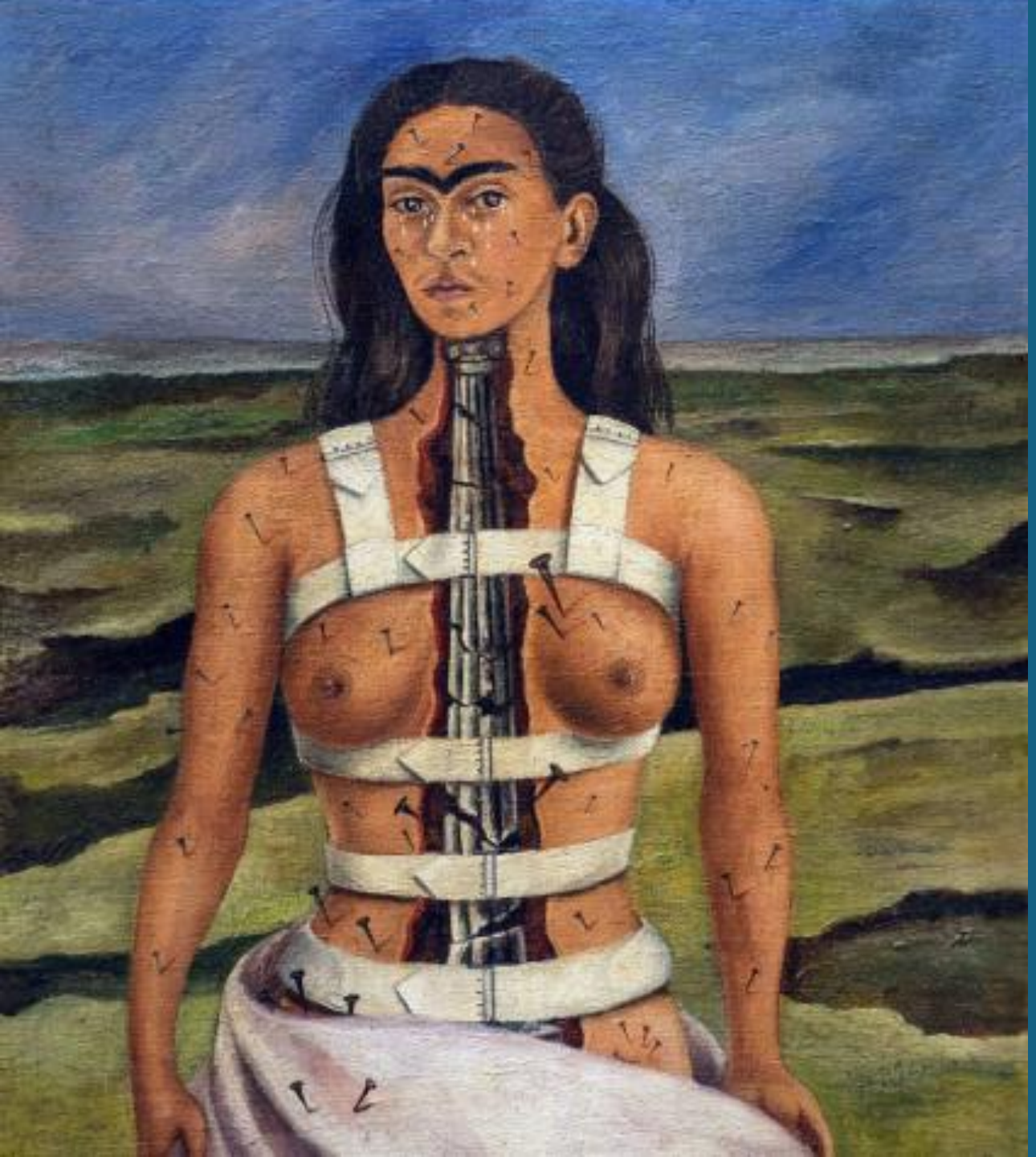
Comma 2. In singoli casi **il medico puo', sotto la sua diretta responsabilita' e previa informazione del paziente e acquisizione del consenso dello stesso**, impiegare un medicinale prodotto industrialmente **per un'indicazione o una via di somministrazione o una modalita' di somministrazione o di utilizzazione diversa da quella autorizzata**, ovvero riconosciuta agli effetti dell'applicazione dell'articolo 1, comma 4, del decreto-legge 21 ottobre 1996, n. 536, convertito dalla legge 23 dicembre 1996, n. 648, qualora il medico stesso ritenga, **in base a dati documentabili**, che il paziente non possa essere utilmente trattato con medicinali per i quali sia gia' approvata quella indicazione terapeutica o quella via o modalita' di somministrazione **e purche' tale impiego sia noto e conforme a lavori apparsi su pubblicazioni scientifiche accreditate in campo internazionale.**

D.M. 17 dicembre 2004

1. **Il presente decreto detta condizioni e prescrizioni di carattere generale relative all'esecuzione delle sperimentazioni cliniche finalizzate al miglioramento della pratica clinica** quale parte integrante dell'assistenza sanitaria e non a fini industriali.

…….

d) **che la sperimentazione non sia finalizzata** né utilizzata allo sviluppo industriale del farmaco o comunque **a fini di lucro**;
e) **che sia finalizzata al miglioramento della pratica clinica** e riconosciuta a tal fine dal Comitato etico competente come sperimentazione rilevante e, come tale, parte integrante dell'assistenza sanitaria.



TECHNICAL CONSIDERATION AND DRUG SELECTION

COMMENTARY

Enhancing the safety of thoracic segmental spinal anaesthesia: Do's and don'ts

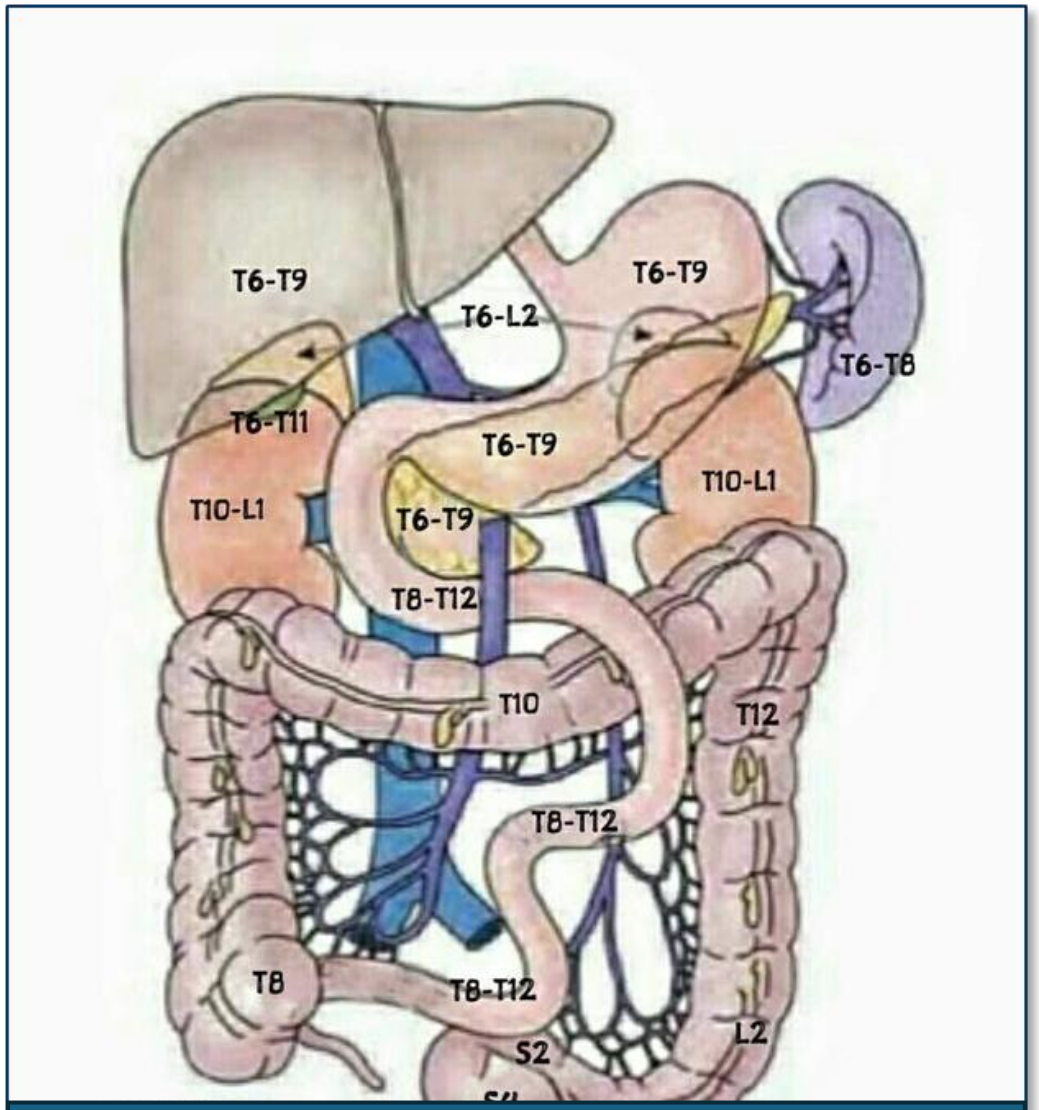
Paliwal, Naresh W.; Khan, Imran A.[1]

Author Information

Indian Journal of Anaesthesia 69(5):p 509-511, May 2025. | *DOI:* 10.4103/ija.ija_157_25

Table 1: Do's and don'ts of thoracic segmental spinal anaesthesia

Do's	Don'ts
Gain a thorough knowledge of TSSA technique, drug doses and complications	Do not use TSSA in the absence of a valid clinical indication
Carefully select patients according to surgical needs and valid indications	Do not be rough; advance the spinal needle gently and slowly
Conduct standard preoperative evaluation as done in any anaesthetic	Do not continue advancing if paraesthesia is observed; withdraw and redirect
Obtain informed consent after explaining the full details of TSSA	Do not exceed recommended LA doses to avoid complications
Use imaging guidance (ultrasound/fluoroscopy) in difficult cases	Do not use multiple or inappropriate additives
Choose an appropriate position for the successful conduct of the procedure (sitting/lateral)	Do not over-sedate, especially when using high thoracic blocks without an airway plan
Choose a suitable needle type based on expertise and availability	Do not use TSSA for superficial neck/upper limb surgeries
Consider combined spinal–epidural technique in expected prolonged procedures	Do not attempt TSSA in difficult airway patients without a backup airway plan
Use multimodal analgesia to provide adequate postoperative pain relief	Do not use paediatric TSSA unless experienced with paediatric regional anaesthesia



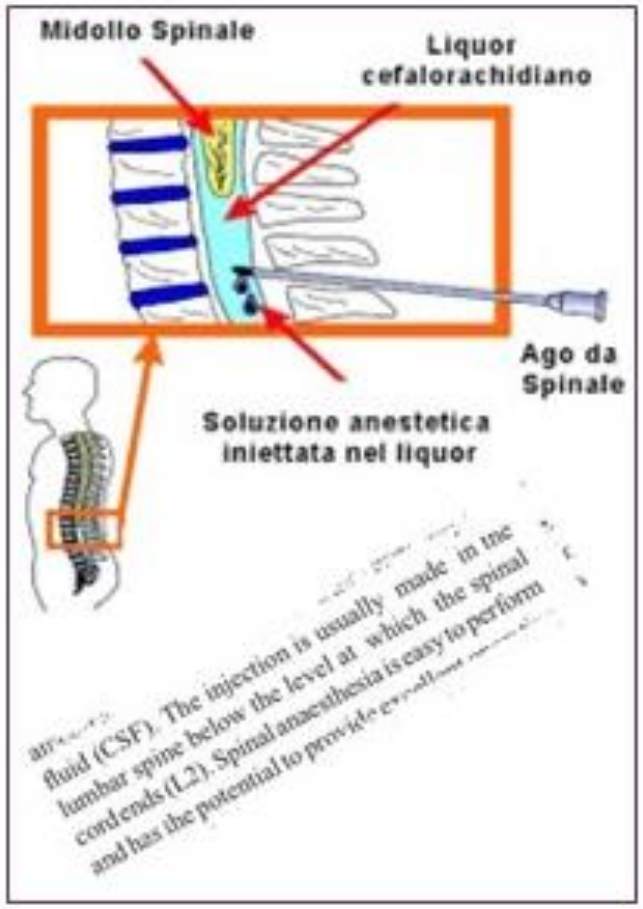
Abdominal visceral innervation generally spans the T5-L2 level

Segmental spinal anesthesia

- *depositing the anesthetic directly at the selected metameric level to achieve the visceral and somatic coverage required for the procedure*
- *for abdominal surgery, this method requires spinal puncture above the L2 level, specifically at the thoracic level*

Topic of the month – September 2022: Can a spinal be performed above L2?

European Society of Regional Anaesthesia & Pain Therapy
ESRA ITALIA



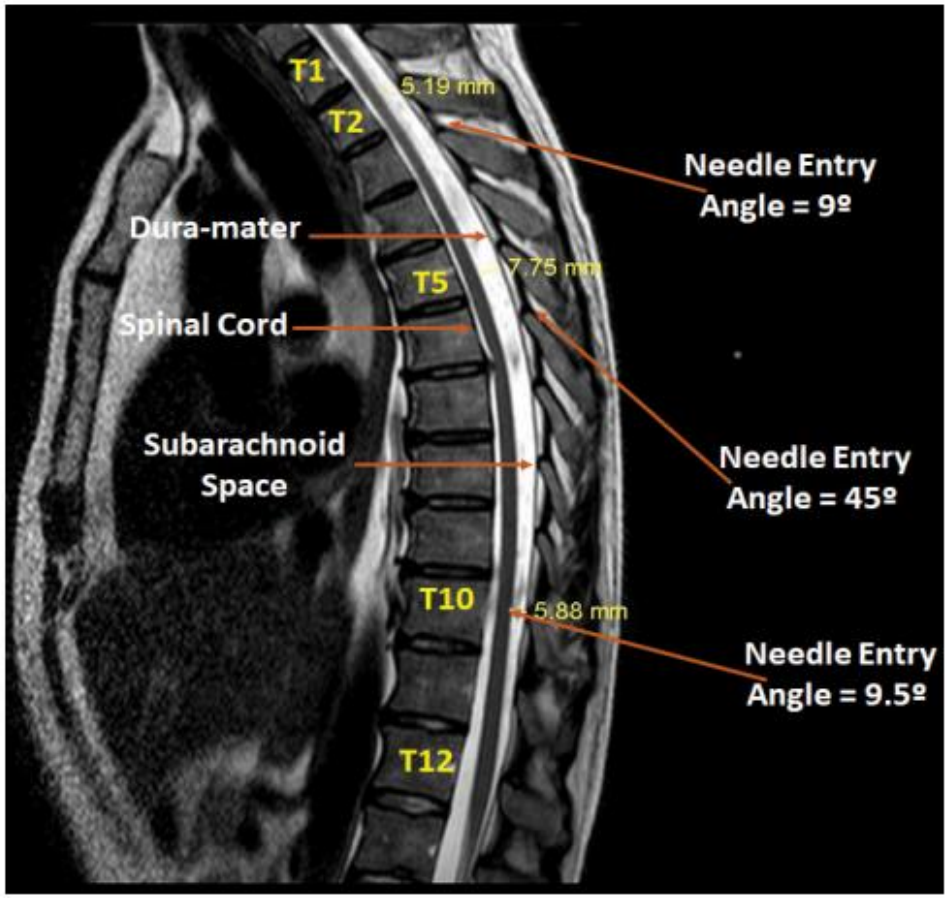
Where does the conus medullaris end?

- Located at **L2** in **43% of women** and **27% of men**
- Considering needle entry angle, risk of contacting the cord when puncturing at **L2–L3**: **4–20%**

How to identify the correct spinal level?

- **Tuffier's line** (connecting iliac crests) used as landmark for **L4 or L4–L5**, but often misleading
- **59%** of punctures are **1–2 spaces higher** than intended
- Even experienced anesthesiologists aiming for **L3–L4** actually punctured **1–4 spaces higher**

Retrospective study, between January 2007 and December 2019 (1406 pts). Paresthesias in 5.9% of patients, all paresthesias were transient, no sequelae neurologic were observed in all patients during this study



Imbelloni et al. Int J Anesthetic Anesthesiol 2022, 9:148

Anathomical hurdles for thoracic spinal anesthesia

One step-one check technique

Laminar /Paramedian approach could be indicated

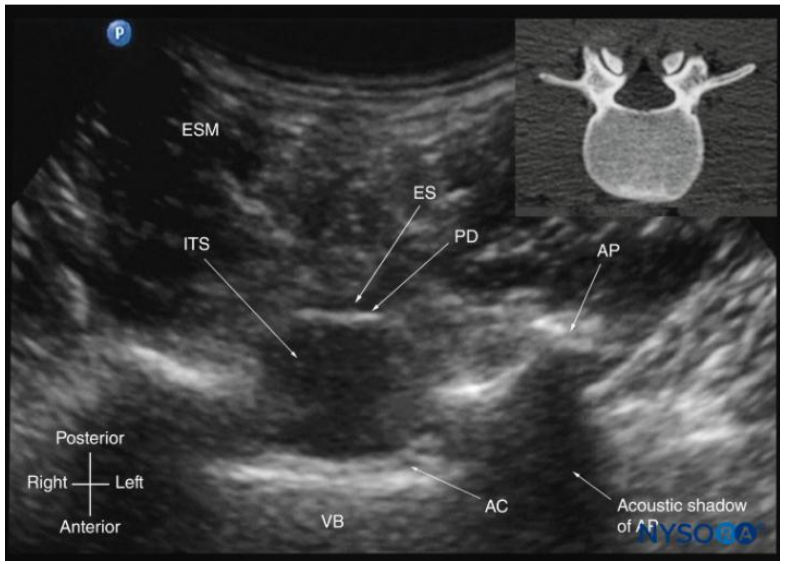
EJA

Eur J Anaesthesiol 2020; **37:**1–32

GUIDELINES

European Society of Anaesthesiology Guidelines on peri-operative use of ultrasound for regional anaesthesia (PERSEUS regional anesthesia)

Peripheral nerves blocks and neuraxial anaesthesia



Spinal anaesthesia

(1) The quality of evidence on which to base recommendations is generally weak, with a few RCTs that have a high degree of heterogeneity.

(2) We recommend the use of preprocedural ultrasound scanning to provide better accuracy in identifying the intended intervertebral space (1C).

(3) We are unable to make any recommendations about the use of preprocedural ultrasound scanning for other comparisons on the basis of improved success, incidence of complications, number of skin punctures, postprocedural back pain or patient satisfaction, although there is no evidence to suggest it is inferior to landmark/palpation techniques.

(4) We suggest any increase in time to perform spinal anaesthesia with the use of preprocedural ultrasound scanning is not clinically important (2C).

Which needle for thoracic spinal anesthesia?

JOURNAL ARTICLE

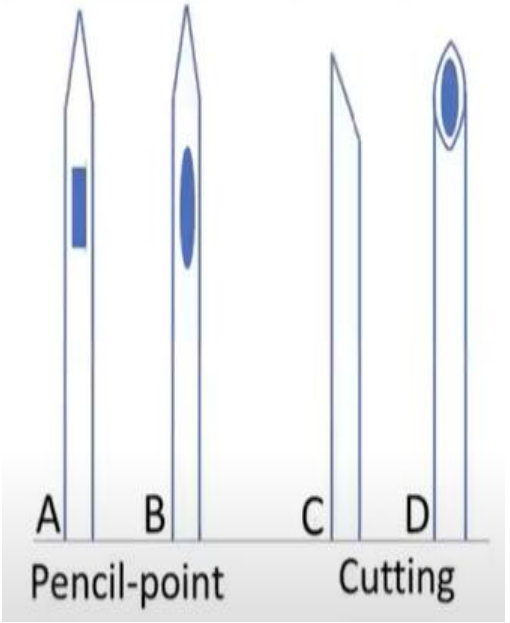
Low spinal thoracic anesthesia: Quincke or Whitacre needles? FREE

Luiz E Imbelloni

BJA: British Journal of Anaesthesia, Volume 103, Issue eLetters Supplement, 15 December 2009, https://doi.org/10.1093/bja/el_3862

Published: 15 January 2009

- PENCIL POINT NEEDLE
  - 1 mm blind tip beyond the orifice
  - Need to insert 2 mm over the subarachnoid space to see CSF
- CUTTING NEEDLE
  - Terminal orifice
  - Dural puncture brings CSF immediatly



COMMENTARY

Enhancing the safety of thoracic segmental spinal anaesthesia: Do's and don'ts

Paliwal, Naresh W.; Khan, Imran A.[1]

Author Information

Indian Journal of Anaesthesia 69(5):p 509-511, May 2025. | **DOI:** 10.4103/ija.ija_157_25

Table 1: Do's and don'ts of thoracic segmental spinal anaesthesia

Do's	Don'ts
Gain a thorough knowledge of TSSA technique, drug doses and complications	Do not use TSSA in the absence of a valid clinical indication
Carefully select patients according to surgical needs and valid indications	Do not be rough; advance the spinal needle gently and slowly
Conduct standard preoperative evaluation as done in any anaesthetic	Do not continue advancing if paraesthesia is observed; withdraw and redirect
Obtain informed consent after explaining the full details of TSSA	Do not exceed recommended LA doses to avoid complications
Use imaging guidance (ultrasound/fluoroscopy) in difficult cases	Do not use multiple or inappropriate additives
Choose an appropriate position for the successful conduct of the procedure (sitting/lateral)	Do not over-sedate, especially when using high thoracic blocks without an airway plan
Choose a suitable needle type based on expertise and availability	Do not use TSSA for superficial neck/upper limb surgeries
Consider combined spinal–epidural technique in expected prolonged procedures	Do not attempt TSSA in difficult airway patients without a backup airway plan
Use multimodal analgesia to provide adequate postoperative pain relief	Do not use paediatric TSSA unless experienced with paediatric regional anaesthesia

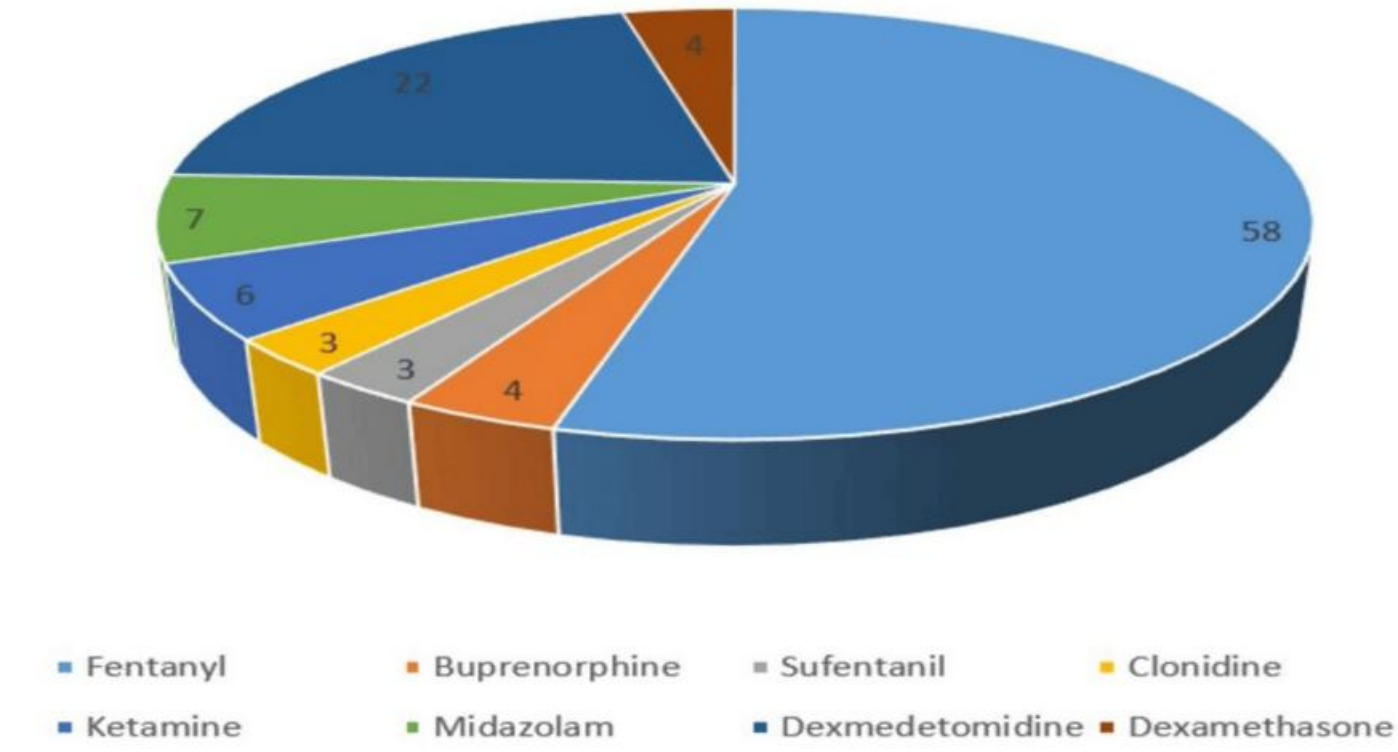


FIGURE 4: Intrathecal adjuvants used with local anesthetic

Khan I, Siddiqui N, Ramachandra S S, et al. (May 14, 2025) Indications and Technique for Thoracic Segmental Spinal Anesthesia in Clinical Practice: A Narrative Review. Cureus 17(5): e84118. DOI 10.7759/cureus.84118

Neuraxial Awareness Surgery: the intrathecal mixture MEL PROTOCOL

«The minimalist mixture»
1 local anesthetic
1 adjuvant
1 volume
1 syringe

DOI: 10.7860/JCDR/2017/26241.9654

Original Article

Anaesthesia Section

Dexmedetomidine as an Additive to Spinal Anaesthesia in Orthopaedic Patients Undergoing Lower Limb Surgeries: A Randomized Clinical Trial Comparing Two Different Doses of Dexmedetomidine

Drug Design, Development and Therapy

Dovepress

open access to scientific and medical research

Open Access Full Text Article

REVIEW

Comparison of dexmedetomidine and fentanyl as local anesthetic adjuvants in spinal anesthesia: a systematic review and meta-analysis of randomized controlled trials

This article was published in the following Dove Press journal:
Drug Design, Development and Therapy

ShuJun Sun[1]
JiaMei Wang[2]
NaRen Bao[1]
Ying Chen[1]
Jun Wang[1]

Purpose: To compare the effects of dexmedetomidine (Dex) and fentanyl as adjuvants to local anesthetics in spinal anesthesia.

Methods: Two researchers independently searched the PUBMED, EMBASE, Cochrane library, and CBM for randomized controlled trials comparing the effects of Dex and fentanyl as adjuvants to local anesthetics for intrathecal injection.

Anesth Pain Med. 2023 August; 13(4):e138274. https://doi.org/10.5812/aapm-138274.
Published online 2023 August 6. Research Article

Dexmedetomidine Versus Clonidine as Additives for Spinal Anesthesia: A Comparative Study

Meta Analysis

Journal of INTERNATIONAL MEDICAL RESEARCH

Dexmedetomidine as an adjuvant for single spinal anesthesia in patients undergoing cesarean section: a system review and meta-analysis

Journal of International Medical Research
48(5) 1–13

DOI: 10.1177/0300060520913423
journals.sagepub.com/home/imr
SAGE

Anesth Essays Res. 2018 Jan-Mar;12(1):251-255. doi: 10.4103/aer.AER_227_17.

Comparison of Levobupivacaine and Levobupivacaine with Dexmedetomidine in Infraumbilical Surgeries Under Spinal Anesthesia

HEMODYNAMIC EFFECTS MANAGEMENT

Side effects TSA:
Hypotension: 13,2%-28,5%
Bradycardia: 3,1%-13%

BJA

British Journal of Anaesthesia, 135 (1): 40–47 (2025)

doi: 10.1016/j.bja.2024.10.050
Advance Access Publication Date: 24 January 2025
Clinical Investigation

CARDIOVASCULAR

Influence of frailty status on the incidence of intraoperative hypotensive events in elective surgery: Hypo-Frail, a single-centre retrospective cohort study

Retrospective cohort study of 2495 robust, prefrail, and frail patients aged more than 70 yr with preoperative frailty assessment analysed for likelihood, rate, duration, and severity of intraoperative hypotension defined as mean arterial pressure <65 mm Hg.

Although there was no difference in the likelihood, there was a 9% increase in rate of intraoperative hypotension for prefrail and 16% increase for frail patients.

BJA Open

BJA Open, 14 (C): 100392 (2025)

doi: 10.1016/j.bjao.2025.100392
Original Research Article

ORIGINAL RESEARCH ARTICLE

A bundle to prevent postinduction hypotension in high-risk noncardiac surgery patients: the ZERO-HYPOTENSION single-arm interventional proof-of-concept study

Kristen K. Thomsen[1,2,†,*], Alina Kröker[1,†], Linda Krause[3], Karim Kouz[1,2], Christian Zöllner[1], Daniel I. Sessler[2,4], Bernd Saugel[1,2] and Moritz Flick[1]

- continuous intra-arterial blood pressure monitoring
- hypotension alarm set at a mean arterial pressure (MAP) of 75 mm Hg
- careful administration of anaesthetic drugs
- continuous administration of norepinephrine when MAP decreased below 75 mm Hg

Minimal postinduction hypotension in high-risk noncardiac surgery patients treated with a hypotension prevention bundle

Of 107 patients, 55 (51%) had at least one MAP reading <65 mm Hg, but only 16/107 patients (15%) had a MAP <65 mm Hg for at least one continuous minute. The median AUC65 was 0.1 mm Hg . min.

SPONTANEOUS BREATHING AND SEDATION

COMMENTARY

Enhancing the safety of thoracic segmental spinal anaesthesia: Do's and don'ts

Paliwal, Naresh W.; Khan, Imran A.[1]

Author Information

Indian Journal of Anaesthesia 69(5):p 509-511, May 2025. | **DOI:** 10.4103/ija.ija_157_25

Table 1: Do's and don'ts of thoracic segmental spinal anaesthesia

Do's	Don'ts
Gain a thorough knowledge of TSSA technique, drug doses and complications	Do not use TSSA in the absence of a valid clinical indication
Carefully select patients according to surgical needs and valid indications	Do not be rough; advance the spinal needle gently and slowly
Conduct standard preoperative evaluation as done in any anaesthetic	Do not continue advancing if paraesthesia is observed; withdraw and redirect
Obtain informed consent after explaining the full details of TSSA	Do not exceed recommended LA doses to avoid complications
Use imaging guidance (ultrasound/fluoroscopy) in difficult cases	Do not use multiple or inappropriate additives
Choose an appropriate position for the successful conduct of the procedure (sitting/lateral)	Do not over-sedate, especially when using high thoracic blocks without an airway plan
Choose a suitable needle type based on expertise and availability	Do not use TSSA for superficial neck/upper limb surgeries
Consider combined spinal–epidural technique in expected prolonged procedures	Do not attempt TSSA in difficult airway patients without a backup airway plan
Use multimodal analgesia to provide adequate postoperative pain relief	Do not use paediatric TSSA unless experienced with paediatric regional anaesthesia

SEDATION
IN NEURAXIAL AWARENESS SURGERY

OBJECTIVES

- Ensure patient comfort
- Mantain physiological breathing

Brain saving strategy

Anaesthesia 2012, 67, 1189–1201

SEDATIVE TARGET FOR AWARENESS SURGERY

Table 1 Classification of intra-operative cognitive states (first presented at the 7th International Symposium on Memory and Awareness in Anaesthesia, Munich, Germany, March 2008).

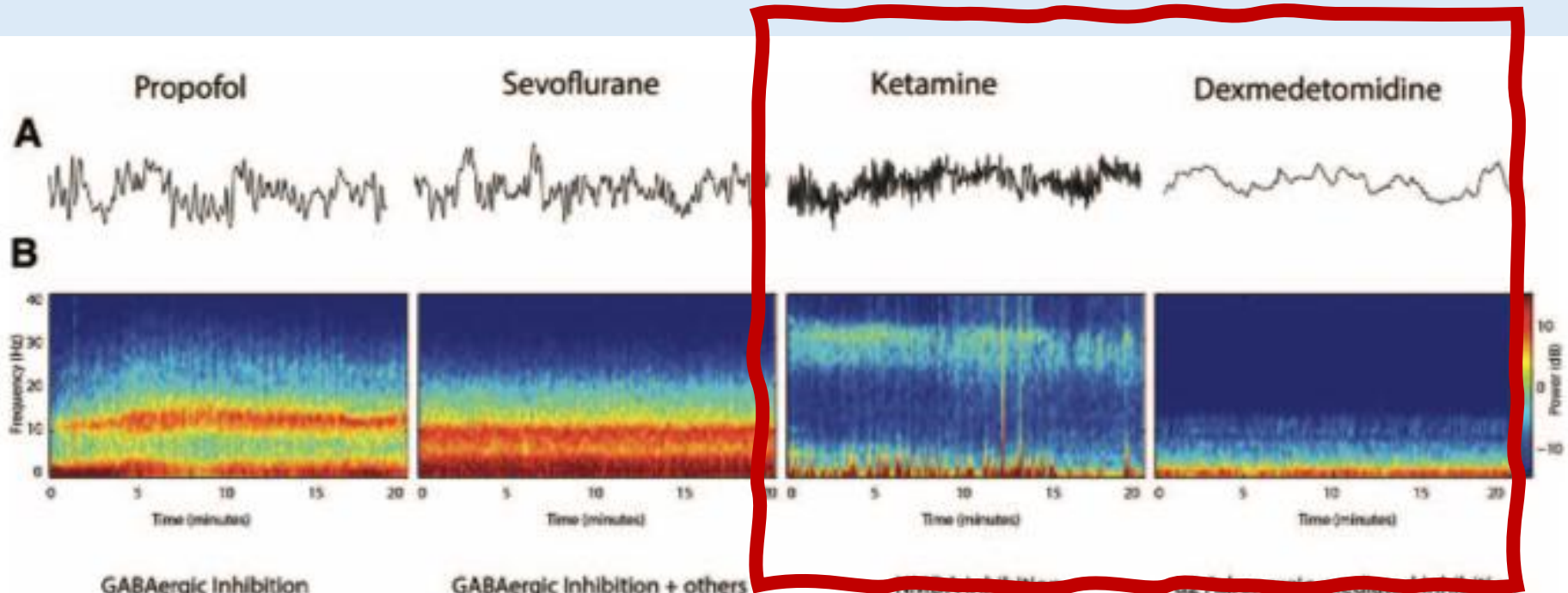
Intra-operative state			Postoperative state: Immediate	Postoperative state: Late (>1 month)	Descriptor	Exemplar study/review
0	Unconscious	No signs; no response to command	No recall	No recall	Adequate anaesthesia	[12]
1	Conscious	Signs/response to command	No recall	No recall or emotional sequelae	Intra-operative *wakefulness* with obliterated explicit and implicit memory	[4]
2	Conscious; word stimuli presented	Signs/response to command	No explicit recall, implicit memory for word stimuli	No explicit recall; implicit memory for word stimuli but no emotional sequelae	Intra-operative *wakefulness* with subsequent *implicit memory*	[11]
3	Conscious	Signs/response to command	No recall	PTSD/nightmares but no explicit recall	Intra-operative *wakefulness* with *implicit emotional memory*	[15]
4	Conscious	Signs/response to command	Explicit recall with or without pain	Explicit recall but no emotional sequelae	*Awareness* but resilient patient	[16]
5	Conscious	Signs/response to command	Explicit recall with distress and/or pain	PTSD/nightmares with explicit recall	*Awareness* with *emotional sequelae*	[25]

What is the optimal pharmacological sedative approach for Awareness Surgery?

NO GABA sedation more indicated

GABAergic Sedation May Be Harmful to the Brain

may worsen pre-existing cognitive impairment or accelerate decline



MONITORING

Techinical consideration and drug selection

Hemodinamic management

Spontaneous breathing and sedation

STANDARDIZING

Vailati *et al. J Anesth Analg Crit Care* (2025) 5:35
https://doi.org/10.1186/s44158-025-00259-6

Journal of Anesthesia, Analgesia and Critical Care

EDITORIAL Open Access

A bundle for thoracic segmental spinal anaesthesia: it is time to move forward!

Davide Vailati[1*], Benedetta Basta[2], Roberto Starnari[3] and Fabrizio Fattorini[4]

Neuraxial Awareness Academy
Anesthesia & Surgery Melegnano

Table 1 Thoracic segmental spinal anaesthesia "MEL bundle"

1	Patient selection
2	Technical consideration and drug selection
3	Ethical and legal consideration
4	Spontaneous breathing and sedation
5	Monitoring
6	Haemodynamic management
7	Teamwork and strategy

AWARENESS SURGERY

THE BASICS OF CLINICAL MANAGEMENT IN SEGMENTAL SPINAL ANESTHESIA AND SPONTANEOUS BREATHING SURGERY

FEASIBILE

SAFE

EFFECTIVE

REPRODUCIBLE
REPLICABLE

T

It's time to move forward!