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

European Society of Regional Anaesthesia & Pain Therapy
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ESRA MEETING
ANNUAL UPDATE

1 day, 1 programme, 3 cities

NAPOLI, 13 APRILE 2024

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Giuseppe Servillo

Responsabile scientifico:
Giuseppe Lubrano
Antonio Coviello

ALR: NON SOLO SALA OPERATORIA

DOTT. GIORGIO RANIERI

UOC ANESTESIA E RIANIMAZIONE

OSPEDALE ISOLA TIBERINA®

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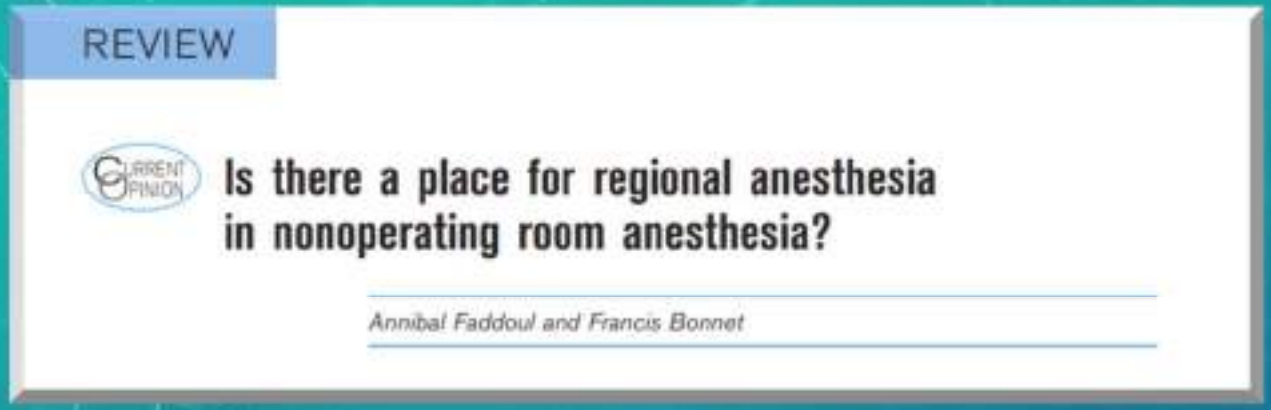
ROMA

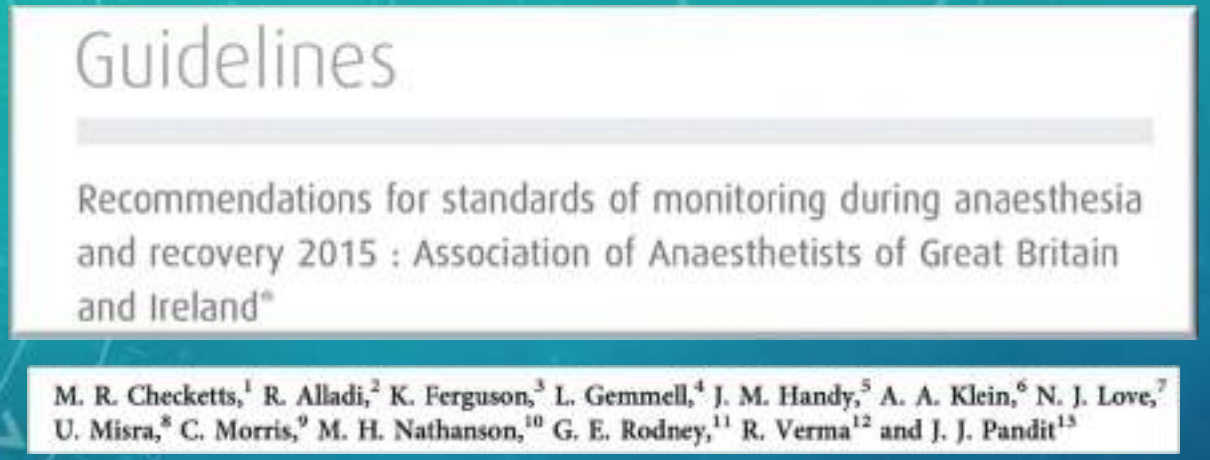


- The application of anesthesiology outside of the operating room, while widespread and moreover extending, requires heightened vigilance and skill
- With new and more invasive interventional procedures becoming more commonplace, it remains the anesthesiologists' responsibility to adapt their practice to such procedures and ensure a well tolerated and painless journey for their patients
- Ultrasound-guided regional anesthesia has become a popular technique increasing the opportunities to practice regional anesthesia because of technical facilities to perform new blocks.

SAFETY IS A PERMANENT CONCERN

- NORA should follow the same safety protocols agreed upon by local or international anesthesia guidelines, and applied in the operating room
- The preoperative assessment should be thorough, and the agreed - upon anesthetic plan decided beforehand.
- Qualified personnel should be present at all times during the procedure.
- The patient's vitals should also be continually monitored in accordance with the ASA Standards for Basic Anesthesia Monitoring

SAFETY IS A PERMANENT CONCERN


Guidelines

Recommendations for standards of monitoring during anaesthesia and recovery 2015 : Association of Anaesthetists of Great Britain and Ireland*

M. R. Checketts,[1] R. Alladi,[2] K. Ferguson,[3] L. Gemmell,[4] J. M. Handy,[5] A. A. Klein,[6] N. J. Love,[7] U. Misra,[8] C. Morris,[9] M. H. Nathanson,[10] G. E. Rodney,[11] R. Verma[12] and J. J. Pandit[13]

- National guidelines for patient monitoring during anesthesia should be followed
- An. Techniques must guarantee minimum stress and maximum comfort for the patient and must take into consideration the risk and benefits of the individual technique
- Analgesia is essential and must be long-acting
- PONV must be minimezed and indiscriminate use of opioids is not recommended

KJA
Korean Journal of Anesthesiology
Review Article
pISSN 2005-6419 · eISSN 2005-7563
Korean J Anesthesiol 2017 August 70(4): 398-406
https://doi.org/10.4097/kjae.2017.70.4.398

Anesthesia for ambulatory surgery

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Patient selection

SURGICAL CONSIDERATION

SOCIAL CONSIDERATION

CLINICAL CONSIDERATION

ANESTHESIOLOGICAL CONSIDERATION

Ambulatory Anesthesiology

NARRATIVE REVIEW ARTICLE

Patient Selection for Adult Ambulatory Surgery: A Narrative Review

Niraja Rajan, MD,* Eric B. Rosero, MD, MSc,† and Girish P Joshi, MBBS, MD, FFARCSI†

DOI: 10.1213/ANE.0000000000005605

Comorbidity	Summary of recommendations
ASA physical status	• ASA physical status III patients should have optimized stable comorbidities • ASA physical status IV patients with stable comorbid conditions may undergo low-risk procedures such as cataract surgery performed under topical/local/regional anesthesia
Age/frailty	• Age alone should not be an exclusion factor. Consider comorbid conditions, frailty, cognitive status, surgical, anesthetic, and social factors such as lack of home care support or unwillingness of patient to comply
Obesity	• BMI <40 kg/m^2: suitable for ambulatory surgery • BMI 40–50 kg/m^2: optimize comorbidities and screen for obstructive sleep apnea • BMI >50 kg/m^2: schedule as outpatient for low-risk procedures in the absence of severe cardiopulmonary comorbidities
Obstructive sleep apnea	• Screen for obstructive sleep apnea and optimize comorbidities • Preoperative sleep study is not required • Encourage positive airway pressure use in compliant patients • Pain control with multimodal nonopioid analgesia
Cardiac disease	• Asymptomatic cardiac patients do not require cardiac testing • Do not postpone surgery based solely on a blood pressure values. Delay only for patients with malignant hypertension (diastolic blood pressure >110 mm Hg) with acute end-organ damage • Exclude for at least 30 d after acute myocardial infarction • Exclude only for patients with decompensated, new onset, or untreated heart failure as well as symptomatic patients with low (<35%) left ventricular ejection fraction • Exclude symptomatic (fatigue, dizziness, syncope, palpitations, chest pain, and shortness of breath) patients with new onset atrial fibrillation • Exclude symptomatic (chest pain, dyspnea, syncope, and poor exercise tolerance) patients severe valvular heart disease • Patients with coronary stents are suitable if comorbidity burden is low, sufficient time has elapsed since stent implantation (30 d for BMS, 6 mo for newer DES, 12 mo for older DES) allowing for interruption of dual antiplatelet therapy, patient has transitioned to a state of stable ischemic coronary disease, or if procedure is noninvasive, allowing continuation of dual antiplatelet therapy with low risk of bleeding. • Patients with cardiac electronic implantable devices are suitable if the potential for electromagnetic interference is low, and with ability to manage the device if use of magnet or reprogramming is necessary
Chronic obstructive pulmonary disease	• Exclude severe disease. Encourage smoking cessation, optimize bronchodilator therapy, treat respiratory infection
Diabetes mellitus	• Continue antidiabetic drugs, as appropriate • Resume oral intake and hypoglycemic regimen as soon as possible postoperatively • Exclude unstable metabolic conditions such as diabetic ketoacidosis, and nonketotic hyperosmolar states
End-stage renal disease	• Exclude if not on dialysis, optimize comorbidities, accept chronic anemia and asymptomatic hyperkalemia ($K \leq 6.0$)
Previous stroke/transient ischemic attack	• Delay elective surgery for at least 9 mo • Manage antiplatelet therapy
Malignant hyperthermia susceptible	• Proceed as outpatient using nontriggering anesthetics • Malignant hyperthermia cart and dantrolene available in facility
Chronic pain/opioid use disorder	• Procedures with expected mild/moderate pain manageable with nonopioid analgesia including local/regional analgesia may be scheduled as outpatient • Procedures with expected severe pain or requiring tapering of maintenance regimens should be scheduled as inpatient

NARRATIVE REVIEW ARTICLE

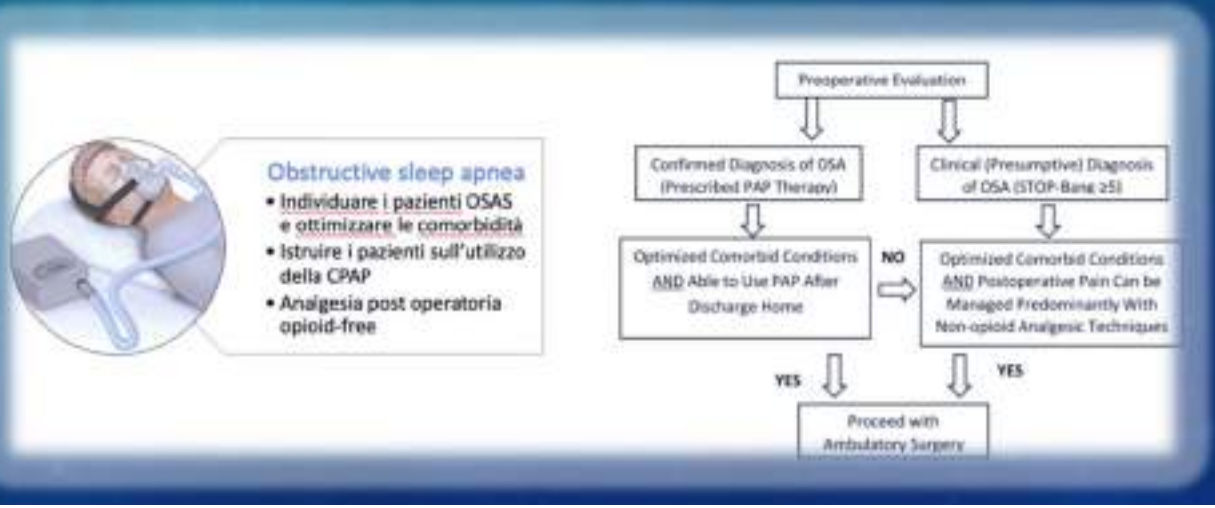
Patient Selection for Adult Ambulatory Surgery: A Narrative Review

Niraja Rajan, MD,* Eric B. Rosero, MD, MSc,† and Girish P. Joshi, MBBS, MD, FFARCSI†

ASA III – IV → monitoraggio post-operatorio complesso o lunga durata

Età → Non è un criterio di esclusione. Considerare le comorbidità associate. Può essere un vantaggio l'intervento in regime di day-surgery o ambulatoriale per i pazienti più anziani

BMI → No Cut-off. Valutare comorbidità, possibile IOT difficile (criterio di esclusione) e OSAS



Diabete → Rinvio giustificato solo in caso di complicanze significative dell'iperglicemia

Non-Operating Room Anesthesia: An Overview

Yeliz Kılıç

Department of Anesthesiology and Reanimation, Eskişehir Osmangazi University School of Medicine, Eskişehir, Turkey

CRITERIO	OPZIONI	PUNTI ATTRIBUITI
Apertura della bocca	maggiore di 4 cm	0
	minore di 4 cm	1
Distanza tiromentoniera	superiore a 6.5 cm	0
	tra 6 e 6.5 cm	1
	inferiore a 6 cm	2
Classe di Mallampati	I	0
	II	1
	III	2
Estensione del collo	superiore a 90 gradi	0
	tra 80 e 90 gradi	1
	inferiore a 80 gradi	2
Capacità di prognatismo	Si	0
	No	1
Peso corporeo	inferiore a 90 kg	0
	tra 90 e 110 kg	1
	superiore a 110 kg	2
Storia di intubazione difficile	Nessuna	0
	Probabile	1
	Certa	2

TABLE 2. Basic rules of radiological and hematological testing in preprocedural evaluation outside of the OR (18, 19)

ECG is indicated in patients above 50 years, and is valid for six months provided no interval change.

Chest radiography is not mandatory at any age.

Complete blood count and electrolyte panel as indicated by history, and valid for six months.

Blood glucose check for all diabetic patients.

Potassium check for patients with end stage renal disease.

Pregnancy test on the day of the procedure is indicated for women of child-bearing age who had no documented hysterectomy.

An indication should be made for all tests ordered.

Tests already in the record are acceptable.

REVIEW

Curr Opin Anesthesiol 2015, 28:617–622
DOI:10.1097/ACO.0000000000000255

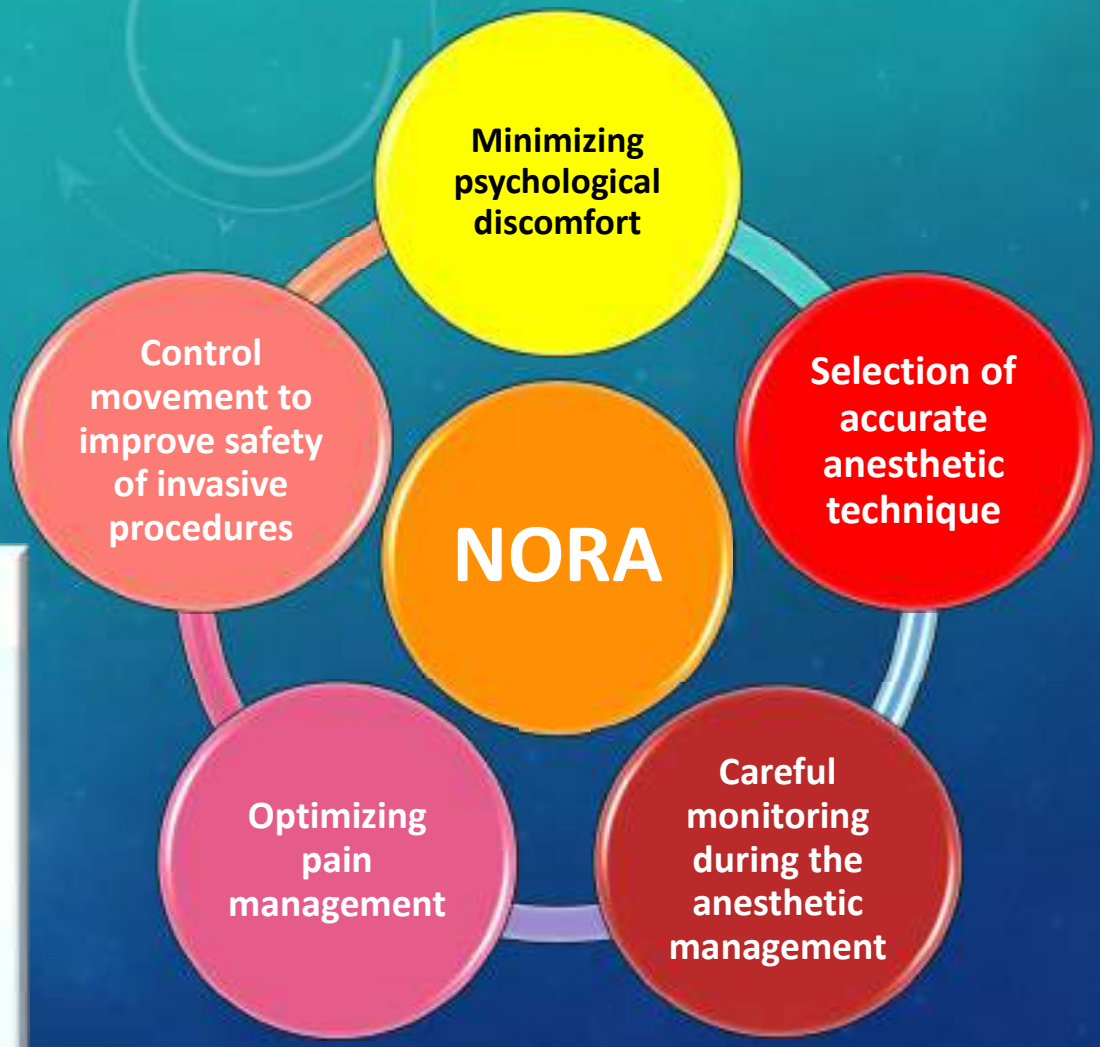
Providing value in ambulatory anesthesia

Caroline D. Fosnot[a], Lee A. Fleisher[a], and John Keogh[a,b]

TARGETS ANESTHESIA

NON OPERATING ROOM ANESTHESIA

TAILORED ANESTHESIA



CYPRUS JOURNAL OF MEDICAL SCIENCES

Review

REVIEW

Standard procedures in nonoperating room anesthesia

Curr Opin Anesthesiol 2020, 33:539–547

Susan M. Dabu-Bondoc

Table 1. Diagnostic and Interventional procedures in NORA

Cardiology
1. Electrophysiology laboratory
   a. Atrial or ventricular tachycardia ablation
   b. TEE
   d. Electrical cardioversion
2. Stroke risk reduction
   a. Left atrial appendage occlusion (Watchman procedure)
3. Arterial interventions
   a. PCI – angioplasty and stenting
   b. Hybrid coronary revascularization
   c. Complex coronary intervention for chronic total occlusion
4. Heart defect repair
   a. PFO closure
   b. ASD closure
   c. VSD closure
   d. PDA closure
5. Heart valve repair or replacement
   a. Balloon aortic valvuloplasty
   b. Balloon mitral valvuloplasty
   c. TAVI/TAVR
   d. TMVR
   e. Aortic coarctation and pulmonary artery stenting

Gastroenterology
1. Simple diagnostic EGD
2. Foreign body removal
3. EUS diagnosis and treatment of tumor in the pancreas
4. Stent placement for internal drainage of the gallbladder/pancreas or creation of gastrojejunal fistula, for bypass of obstruction (ERCP)
5. Electrocoagulation and heater probe, laser treatment, injection therapy – control bleeding
6. Pneumatic dilation or POEM – treatment for achalasia
7. Banding and injection for sclerosis of esophageal varices
8. Endoscopic removal of early cancer in the esophagus, stomach, or colon/rectum: technique using ESD
9. Submucosal delivery of medication, biopsy of nerve and muscle tissue
10. Full thickness resection, equivalent to a laparoscopy via the endoscope
11. Endoscopic implantation of motility monitoring/stimulating devices
12. Endoscopic techniques to manage obesity
   a. Insertion of space-occupying balloons in the stomach
   b. Endoscopic suturing to create a sleeve gastrectomy
   c. Remodeling of the duodenal mucosa
   d. Insertion of venting tube to allow aspiration treatment (medical bulimia)

Interventional radiology
1. Procedures for treatment of malignancy
   a. Chemoembolization, radioembolization, and ablation – regional or transarterial delivery of therapy to targeted tumors such as hepatocellular carcinoma, metastatic colorectal cancer, and metastatic neuroendocrine tumors
   b. Cryotherapy for prostate cancer
2. Hepatic procedures
   a. TIPS
   b. PTHC or PTC
   c. Interventions for hepatic tumors treatment
3. Renal
   a. Renal cryoablation
   b. Renal artery angioplasty and stenting in patients with renal artery stenosis, stent grafting in hemodialysis patients
   c. Nephrostomy tube placement
   d. Central catheters for acute and chronic hemodialysis access
4. Neurologic procedures
   a. Intracranial interventions
      i. Thrombolytic therapy
      ii. Endovascular coiling
      iii. Carotid artery angioplasty/stenting
   b. Spinal interventions
5. Gynecological – UFE or UAE
6. Gastrointestinal – gastrostomy tube placement
7. Vascular intervention/Endovascular management of traumatic injuries
   a. Endovascular aortic repair
   b. Lower extremity revascularization

Top 20 major ambulatory surgeries performed in hospital-owned facilities, 2019

ık	CCS-Services and Procedures category	Total major ambulatory surgeries		Encounters involving one or more major ambulatory surgery	
		Number	Percent	Number	Percent
1	Lens and cataract procedures	1,235,400	7.9	1,172,800	9.9
2	Other (select) therapeutic procedures on muscles and tendons*	1,158,600	7.4	911,700	7.7
3	Cholecystectomy and common duct exploration	643,200	4.1	606,900	5.1
4	Other (select) operating room therapeutic procedures on joints*	594,500	3.8	518,600	4.4
5	Other (select) operating room therapeutic procedures on nose, mouth and pharynx*	537,800	3.4	292,700	2.5
6	Other (select) operating room therapeutic procedures on skin and breast*	537,700	3.4	376,100	3.2
7	Inguinal and femoral hernia repair	494,900	3.2	456,600	3.8
8	Hernia repair other than inguinal and femoral	470,500	3.0	434,200	3.7
9	Tonsillectomy and/or adenoidectomy	460,400	2.9	422,100	3.6
10	Decompression of the peripheral nerve	449,200	2.9	387,600	3.3
11	Excision of semilunar cartilage (meniscus) of knee	433,500	2.8	404,800	3.4
12	Hysterectomy, abdominal and vaginal	419,000	2.7	399,800	3.4
13	Myringotomy	371,900	2.4	335,400	2.8
14	Lumpectomy, quadrantectomy of breast	347,500	2.2	331,700	2.8
15	Other (select) operating room therapeutic procedures on bone*	334,500	2.1	288,200	2.4
16	Arthroplasty knee	317,800	2.0	301,900	2.5
17	Insertion, revision, replacement, removal of cardiac pacemaker or cardioverter/defibrillator	310,200	2.0	265,900	2.2
18	Appendectomy	308,500	2.0	278,400	2.3
9	Partial excision bone	307,100	2.0	277,300	2.3
	Laminectomy, excision intervertebral disc	296,200	1.9	276,700	2.3
	0 major ambulatory surgeries	**10,028,500**	**64.0**	**8,057,700**	**67.8**
	or ambulatory surgeries	**15,669,400**	**100.0**	**11,880,500**	**100.0**

H-CUP HEALTHCARE COST AND UTILIZATION PROJECT

Overview of Major Ambulatory Surgeries Perfo
Hospital-Owned Facilities, 2019

ORIGINAL ARTICLE

Complications of Non–Operating Room Procedures: Outcomes From the National Anesthesia Clinical Outcomes Registry

Beverly Chang, MD, Alan D. Kaye, MD, PhD,† James H. Diaz, MD, MPH,†‡ Benjamin Westlake, BS,§ Richard P. Dutton, MD, MBA,§‖ and Richard D. Urman, MD, MBA**

2015

TABLE 3. Minor Adverse Outcomes Analysis: OR Versus NORA

Outcomes	OR Counts	NORA Counts	χ^2 Values	*P*	RRs (95% CIs)
Any PONV	70,116	7915	16,034	<0.0001	3.9254 (3.8358–4.0170)
Inadequate postoperative pain control	44,195	7508	6721	<0.0001	2.6473 (2.5837–2.7124)
Dental/oral/tooth/mouth	1055	144	209	<0.001	3.3489 (2.1838–3.9857)
Blood-vascular	197	40	26	<0.01	2.3443 (1.6688–3.2932)
Airway/intubation	3763	776	429	<0.001	2.2148 (2.0502–2.3926)
Hemodynamic instability	41,902	4650	9773	<0.0001	4.0427 (3.9226–4.1666)
Unanticipated upgrade of care	1324	140	325	<0.001	4.3221 (3.6313–5.1440)
Eye/ocular/corneal	1475	414	79	<0.001	1.6287 (1.4606–1.8162)
Respiratory-pulmonary	865	153	114	<0.001	0.9145 (0.8134–1.0218)
Neurological-any	551	179	16	<0.001	1.4075 (1.1892–1.6660)
Dural/wet/headache	262	32	31	<0.001	2.7239 (1.8872–3.9318)
Central/intravenous line problem	280	40	21	<0.001	2.1277 (1.5241–2.9564)
Equipment/monitor	405	125	15	<0.001	1.4851 (1.2124–1.8105)
Reversal of neuromuscular blocking agents	795	85	176	<0.001	4.0411 (3.2313–5.0540)
Regional anesthesia problem	475	18	107	<0.001	8.0610 (5.0350–12.9057)
Reversal of narcotics	222	28	29	<0.001	2.805 (1.8935–4.1560)

ORIGINAL ARTICLE

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2015

TABLE 4. Major Adverse Outcomes Analysis: OR Versus NORA—Summary of Outcomes

Outcomes	OR Counts	NORA Counts	χ^2 Values	*P*	RRs (95% CIs)
Anaphylaxis	127	34	2.10	0.1473	0.1171 (0.0802–0.1709)
Awareness	68	25	0.71	0.3394	0.8214 (0.5154–1.2491)
Hemodynamic instability	2008	782	14.54	<0.001	1.1740 (1.0810–1.2751)
Central nervous system injury	379	85	31.57	<0.001	1.9389 (1.5325–2.4531)
Infection	95	8	9.89	0.0017	3.0090 (1.4624–6.1913)
Malignant hyperthermia	6	3	0.759	0.3836	0.0542 (0.1364–2.180)
Medication error	148	50	3.452	0.0632	1.3536 (0.9823–1.8652)
Peripheral nerve injury	223	30	9.054	0.0026	1.780 (1.2165–2.6070)
Respiratory	2191	664	87.39	<0.0001	1.5083 (1.3829–1.6450)
Resuscitation	2006	213	488.63	<0.0001	4.3028 (3.7361–4.9554)
Spinal/epidural/nerve block	29	7	0.009	0.9244	1.0407 (0.4559–2.3756)
Upgrade of care	4141	782	548.13	<0.0001	2.418 (2.2402–2.6099)
Vascular access	226	51	72.39	<0.0001	1.8442 (1.3610–2.4990)
Visual loss	14	2	0.142	0.7063	1.3287 (0.3020–5.8463)
Wrong patient, wrong site, fall, burn	59	15	0.626	0.4288	1.2565 (0.7129–2.2146)

REVIEW

Is there a place for regional anesthesia in nonoperating room anesthesia?

Annibal Faddoul and Francis Bonnet

Peripheral Nerve Blocks Result in Superior Recovery Profile Compared with General Anesthesia in Outpatient Knee Arthroscopy

(Anesth Analg 2005;100:976–81)

Admir Hadzic, MD, PhD, Pelin Emine Karaca, MD, Paul Hobeika, MD, George Unis, MD, Jeffrey Dermksian, MD, Marina Yufa, MD, Richard Claudio, BS, Jerry D. Vloka, MD, PhD, Alan C. Santos, MD, MPH, and Daniel M. Thys, MD

- **Lumbar Plexus Block: (30 ml chloroprocaine 3%) + Sciatic Nerve Block (20 ml chloroprocaine 3%) + Na+HCO3- 1mEq/10ml + Adrenalina 1:300000 + sedazione con Propofol**

- **General Anesthesia: ML (Midazolam, Fentanyl, Propofol, N20/02/Desfluorane)**

Seventy-two percent of patients receiving PNB met criteria enabling them to bypass Phase I postanesthesia care unit compared with only 24% of those receiving GA ($P < 0.002$). Time to meet criteria for discharge home (home readiness) and time to actual discharge were significantly shorter for patients given PNBs than for patients given GA (131 +/- 62 versus 205 +/- 94 and 162 +/- 71 versus 226 +/- 96, respectively). Under the conditions of our study, the combination of lumbar plexus and sciatic blocks with 2-chloroprocaine 3% was associated with a superior recovery profile compared with GA in patients having outpatient knee arthroscopy.

BJA

PAIN

Effect of intra-articular dexmedetomidine on postoperative analgesia after arthroscopic knee surgery

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AG : Fentanest 2mcg/Kg – Propofol 2,5 mg/Kg
MLA (02-ARIA-SEVO)

CONTROL GROUP
I.V. & Intrarticular saline (20ml)

INTRARTICULAR GROUP
I.V. Saline 20 ml –
Intrarticular Dexmedetomidine
(20 ml NaCl with 1mcg/Kg Dex)

I.V. GROUP
I.V. Nacl 20 ml with
Dexmedetomidine 1 mcg/Kg –
Intrarticular Saline 20 ml

- I.V. Group HR decreased significantly compared with preoperative baseline baseline at 1h and 2h after opertion
- MAP was significantly lower in IV Group compared with Control Group at 1 h
- **Compared with the control group, pain VAS was significantly lower in the fi and only at the first hour after the end of surgery in the i.v. group**
- **The time to first postoperative analgesic** request was **longer in the intra-arti** with the control group **[71.0 (50.1) min]** and the i.v. group **[102.1 (54.4) min]**
- The three groups were **comparable** regarding **sedation**. No differences were found between the groups in the incidence of **nausea and vomiting**.

The mechanism by which dexmedetomidine mediates intra-articular analgesia is not clearly defined. However, the mechanisms of analgesic effects for intra-articular dexmedetomidine might be similar to those suggested for intra-articular clonidine. Clonidine may act on α_2-adrenergic presynaptic receptors and inhibit the release of norepinephrine at peripheral afferent nociceptors.[12] Clonidine has also been shown to provide local anaesthetic effects which inhibit the conduction of nerve signals through C and Aδ fibres[13] and may stimulate the release of enkephalin-like substances at peripheral sites.[14] The analgesic effect of clonidine could be mediated via the modulation of the opioid-analgesic pathway.[15]

European Review for Medical and Pharmacological Sciences 2023; 27: 11566-11573

Use of chloroprocaine in orthopedic day surgery: a brief report in a cohort of patients undergoing knee arthroscopy

F. TASSO[1], G. MONTELEONE[1], C. BIAMINO[1], B. LUPO PASINETTI[1,2], A.A. GIACOPPO[1,2], A. DE ANGELIS[1], V. SIMILI[1], M. BOVIO[1], F. MARTORELLI[1], G. ANZILLOTTI[1,2], B. DI MATTEO[1,3], C. FRANCESCHI[1], E. KON[1,3], M. SCARDINO[1]

[1]IRCCS Humanitas Research Hospital, Rozzano, Milan, Italy
[2]Department of Biomedical Sciences, Humanitas University, Pieve Emanuele, Milan, Italy
[3]Department of Traumatology, Orthopaedics and Disaster Surgery, Sechenov University, Moscow, Russia

Anesthesiologic Procedure

Spinal anesthesia was performed using a Whitacre 25G needle (BD®, Franklin Lakes, NJ, USA) with the patient in a lateral decubitus position (with the limb to be operated facing upwards). After setting up a sterile field, chloroprocaine 10 mg/mL in 5 mL vials (50 mg, 1%) was administered in the designated subarachnoid space (L3-L4 in the majority of patients). A dose of 40 mg was used to obtain a satisfactory sensory and motor block[6]. A pinprick test with a hypodermic needle (25G needle, AnHui Hongyu Wuzhou Medical Manifacturer, China) was used to assess the readiness for surgery. Motor block was assessed through the modified Bromage scale (0 = no motor block, able to raise a straight leg; 1 = unable to raise a straight leg but able to flex the knee and ankle, 2 = unable to flex the knee but able to flex the ankle; and 3 = complete motor block). During the surgery, the spinal anesthesia was considered to be effective if no further analgesia, sedation or conversion to general anesthesia was needed.

The peri-operative pain management was comparable for most patients and primarily consisted of non-steroidal anti-inflammatory drugs, paracetamol, and opioids.

In 84% of cases, the PADSS score at discharge was 10, whereas in 16% of the cases, the PADSS score was 9 (Figure 3). The mean time from anesthesia induction to first urination was 75±9.4 minutes (Figure 4), while the mean time from anesthesia induction to discharge from the hospital was 152±18.5 minutes

Parameters	*Result*	*Points*
Systolic blood pressure	*<20% of preoperative value*	*2*
	20-40% of preoperative value	*1*
	>40% of preoperative value	*0*
Ambulation	*Walking without vertigo possible*	*2*
	Walking with assistance possible	*1*
	No walking possible, vertigo	*0*
Nausea, Vomiting	*Minor*	*2*
	Moderate	*1*
	Severe	*0*
Pain	*Minor (VAS 1-2)*	*2*
	Moderate (VAS 3-4)	*1*
	Severe (VAS >4)	*0*
Bleeding	*Minor*	*2*
	Moderate	*1*
	Severe	*0*

POST ANESTHESIA DISCHARGE SCORING SYSTEM

EJA

Eur J Anaesthesiol 2018; **35**:1–8

ORIGINAL ARTICLE

Spinal anaesthesia with chloroprocaine 1% versus total intravenous anaesthesia for outpatient knee arthroscopy

A randomised controlled trial

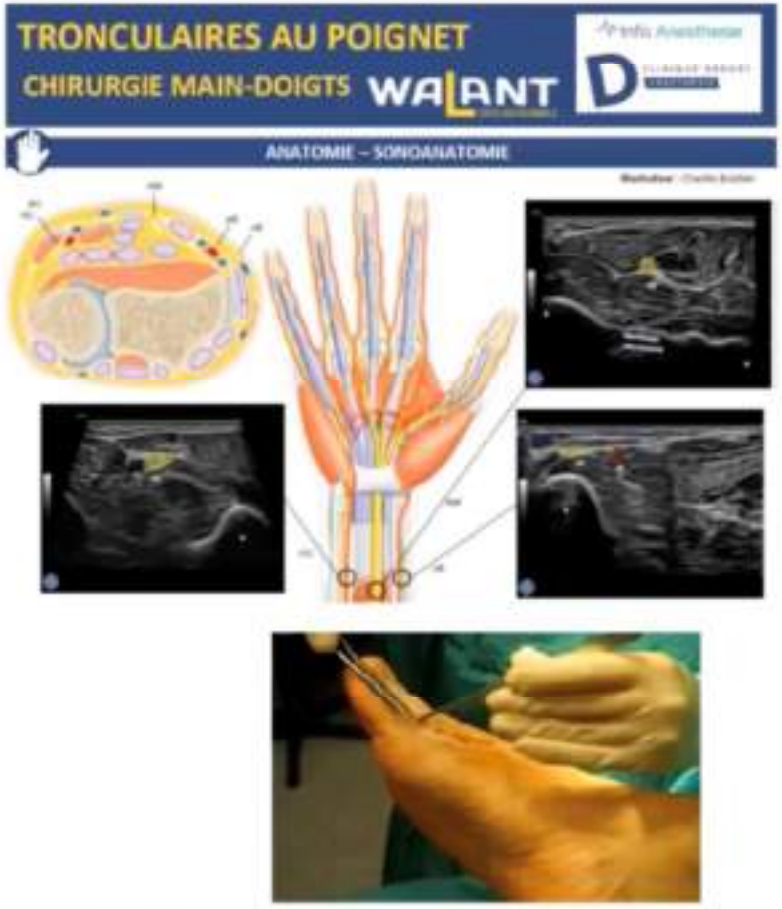
Volker Gebhardt, Vera Zawierucha, Oliver Schöffski, Anke Schwarz, Christel Weiss and Marc D. Schmittner

- Anestesia spinale con Clorprocaina 1% vs TIVA per pazienti che si sottopongono a chirurgia ambulatoriale artoscopica del ginocchio ; 50 pazienti
- Anestesia generale con maschera laringea (propofol e sufentanil)
- SA con 40mg 1% Clorprocaina
- Risultati

1. Recupero più rapido dopo SA
2. Dimissione SA 117 min vs GA 142 min
3. SA più economica
4. Maggior comfort del paziente con SA

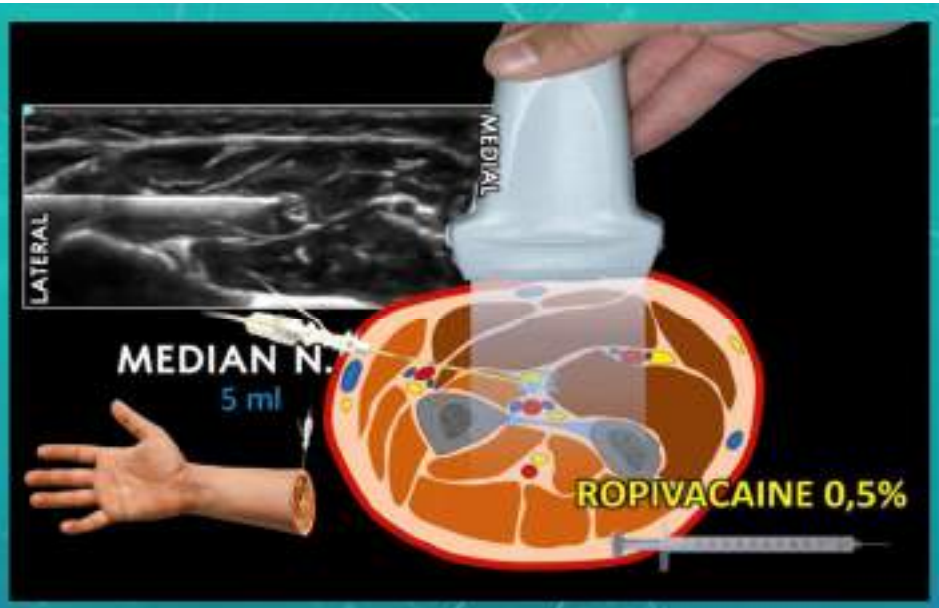
WIDE AWAKE LOCAL ANAESTHESIA WITH NO TOURNIQUET

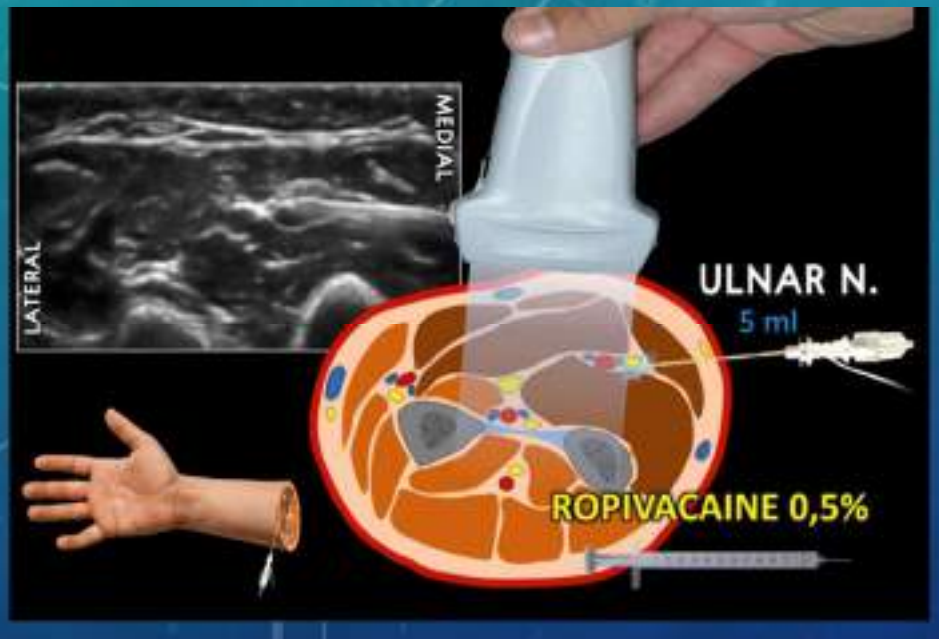
(R)Evolution of PNB

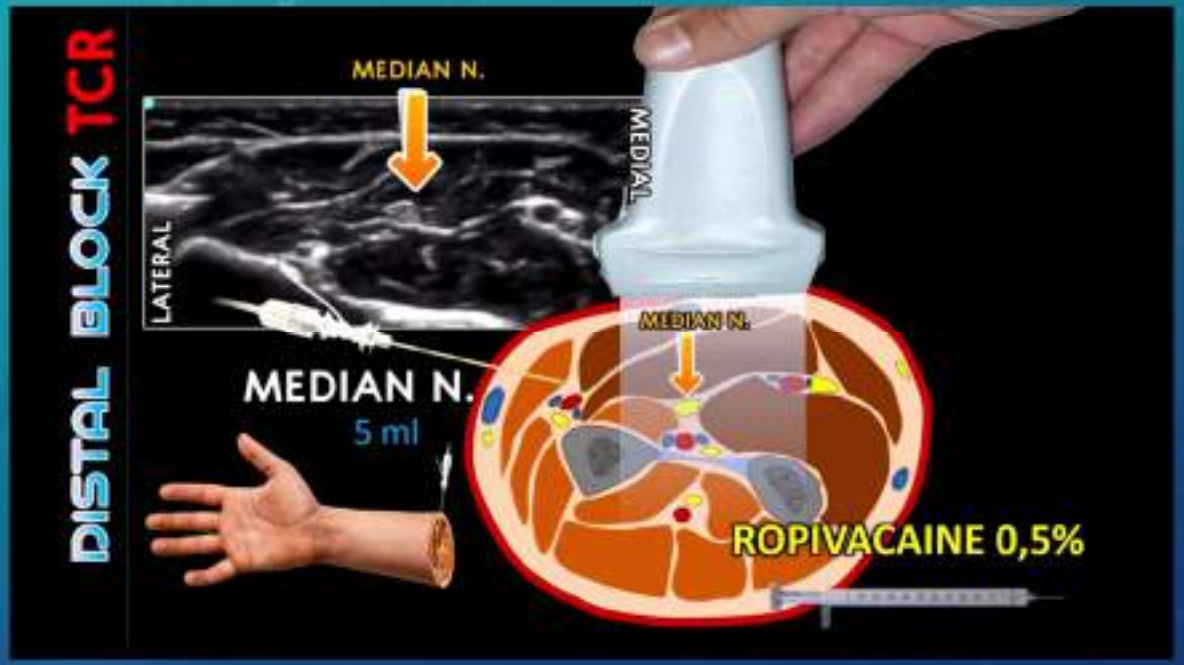


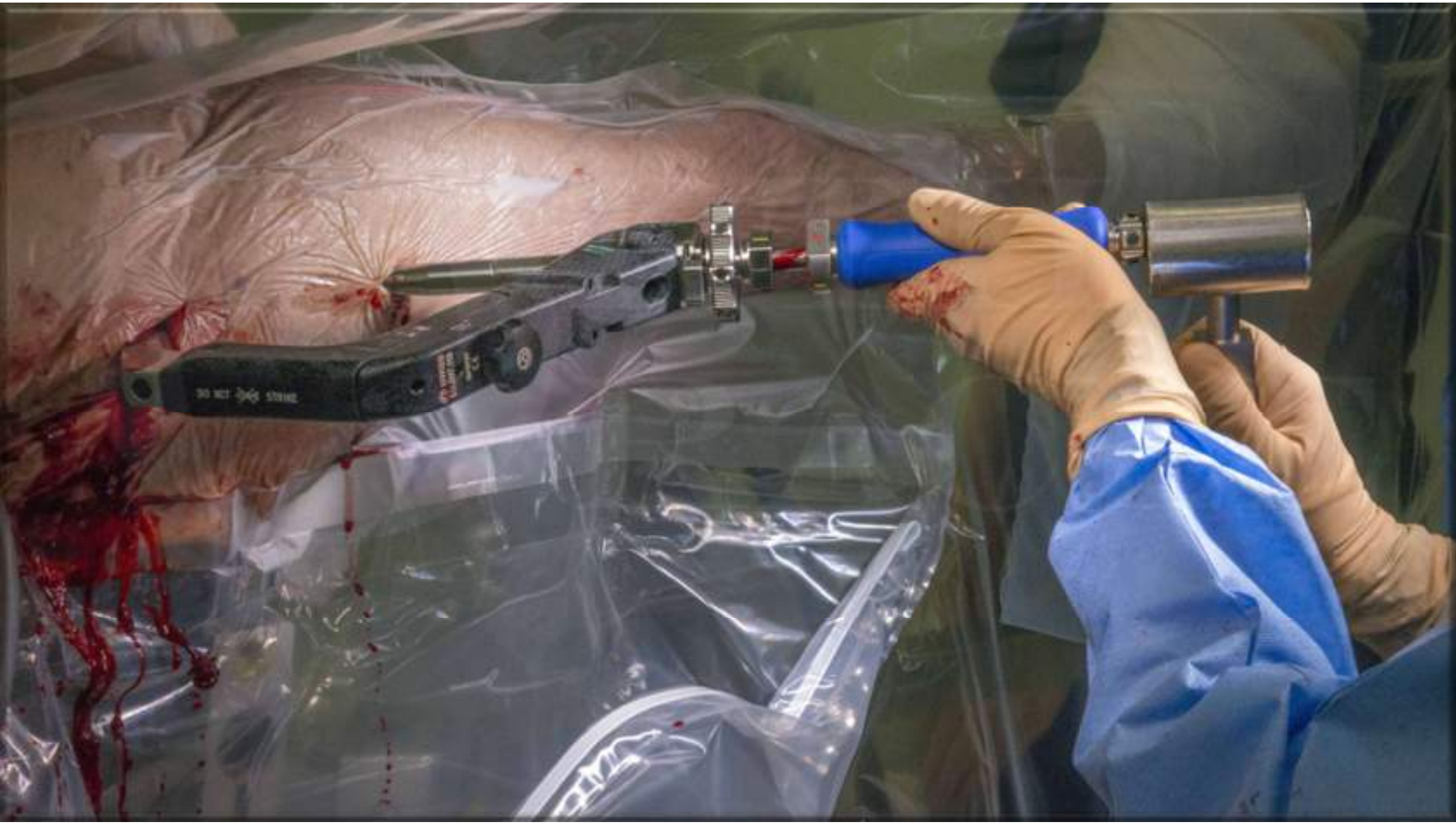
PNB: perineural blocks

Olalya OR et al. Plast Reconstr Surg 2020; 145:737-744
Ayhan E et al. Plast Reconstr Surg 2020; 145:1197-1203


MEDIAL
LATERAL
MEDIAN N.
5 ml
ROPIVACAINE 0,5%


MEDIAL
LATERAL
ULNAR N.
5 ml
ROPIVACAINE 0,5%


DISTAL BLOCK TCR
MEDIAN N.
MEDIAL
LATERAL
MEDIAN N.
MEDIAN N.
5 ml
ROPIVACAINE 0,5%



REGIONAL ANESTHESIA AND ACUTE PAIN

BRIEF TECHNICAL REPORT

Pericapsular Nerve Group (PENG) Block for Hip Fracture

Laura Girón-Arango, MD,† Philip W.H. Peng, MBBS, FRCPC, Founder (Pain Med),*†*
Ki Jinn Chin, MBBS, MMed, FANZCA, FAMS, FRCPC,†*
Richard Brull, MD, FRCPC, and Anahi Perlas, MD, FRCPC*†*

TABLE 1. Characteristics of Patients

Cases	Sex	Age, y	ASA	Side	Hip Pathology	Type of Surgery
1	F	70	III	L	Intertrochanteric fracture	DHS fixation
2	F	80	III	L	Subcapital fracture	Hip hemiarthroplasty
3	M	68	IV	R	Metastatic tumor in femoral head and acetabulum	Total hip arthroplasty
4	M	62	II	L	Intertrochanteric fracture	DHS fixation
5	F	72	III	R	Subcapital fracture	Total hip arthroplasty

ASA indicates American Society of Anesthesiologists; DHS, dynamic hip screw; F, female; L, left; M, male

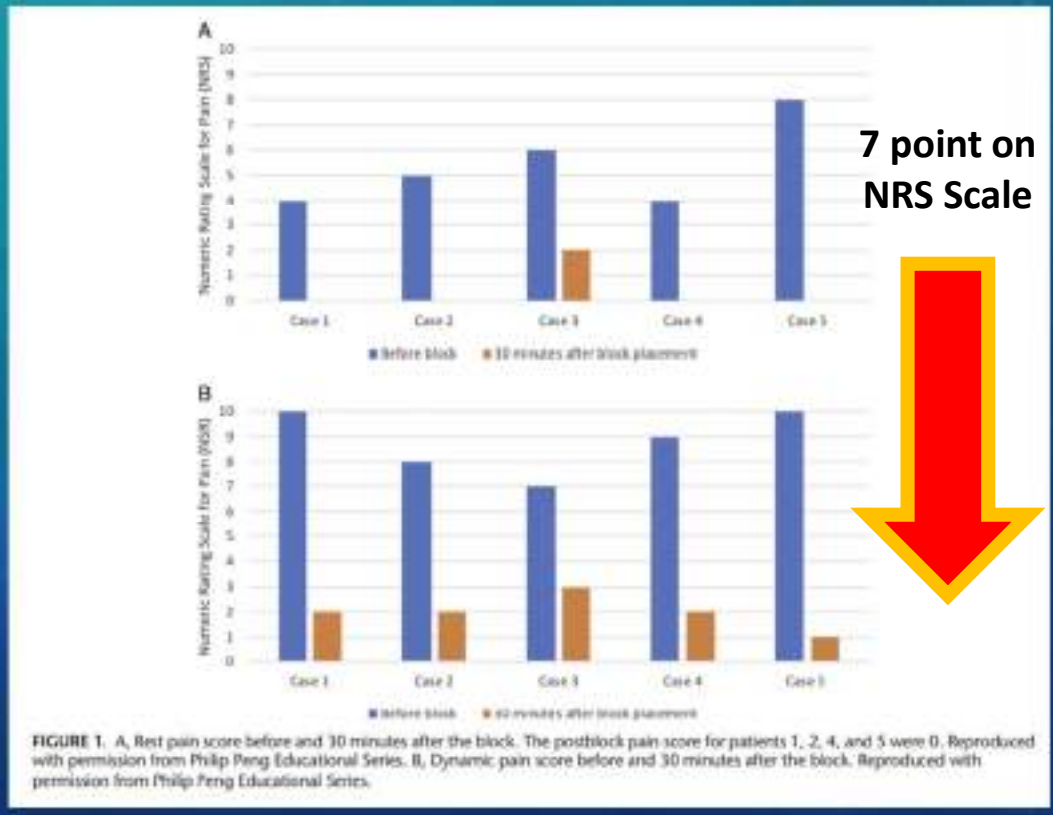


FIGURE 1. A, Rest pain score before and 30 minutes after the block. The postblock pain score for patients 1, 2, 4, and 5 were 0. Reproduced with permission from Philip Peng Educational Series. B, Dynamic pain score before and 30 minutes after the block. Reproduced with permission from Philip Peng Educational Series.

7 point on NRS Scale

CEEM Clinical and Experimental Emergency Medicine

Clin Exp Emerg Med 2022;9(3):198-206
https://doi.org/10.15441/ceem.22.177

"Diffusion of innovations": a feasibility study on the pericapsular nerve group block in the emergency department for hip fractures

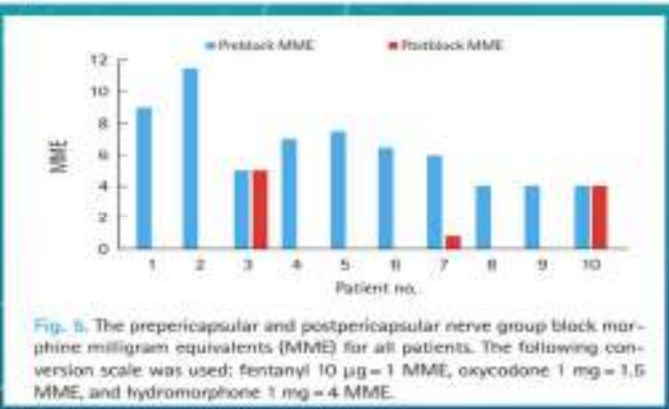
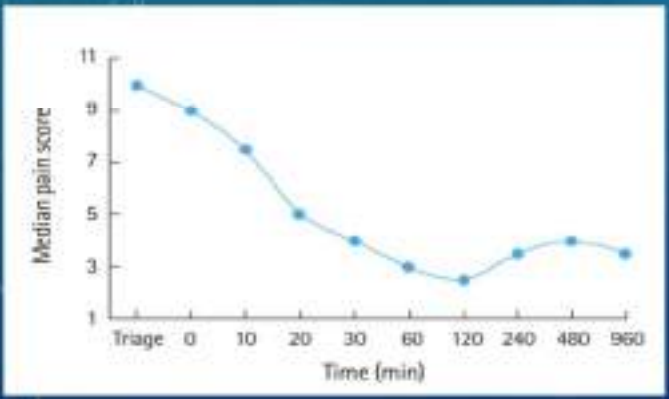


Fig. 5. The prepericapsular and postpericapsular nerve group block morphine milligram equivalents (MME) for all patients. The following conversion scale was used: fentanyl 10 μg = 1 MME, oxycodone 1 mg = 1.5 MME, and hydromorphone 1 mg = 4 MME.



Revista Española de Anestesiología y Reanimación (English Edition)
Volume 70, Issue 9, November 2023, Pages 501-508

Original article

Analgesic efficacy of Pericapsular Nerve Group (PENG) block compared with Fascia Iliaca Block (FIB) in the elderly patient with fracture of the proximal femur in the emergency room. A randomised controlled trial

Abstract

Introduction and objectives

Data on the efficacy of PENG (Pericapsular Nerve Group) block in hip trauma pain are scarce. We hypothesized that PENG block was more effective than infra-inguinal ultrasound-guided FIB (Fascia Iliaca block) for pain control in patients aged 65 years or older presenting in the emergency room (ER) with traumatic proximal femoral fracture.

PENG: Ropivacaine 0,375% 20 ml
FIB: Ropivacaine 0,2% 40 ml
PRIMARY END-POINT : VAS < 4 30 min POST BLOCK

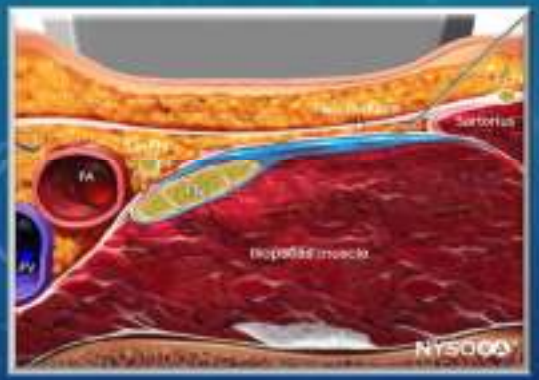
Results

After obtaining ethical committee approval and written informed consent, 60 patients were included.

The primary endpoint was achieved in 16 out of 30 patients (53.3%) in the PENG group and in 15 out of 28 patients (53.6%) in the FIB group. Comparison between groups did not show superiority of the PENG vs FIB (*P*-value .98).

Conclusions

PENG block does not provide better pain than FIB in proximal femoral fracture in elderly patients treated in the ER.



Case Reports > Am J Emerg Med. 2020 Dec;38(12):2761.e5-2761.e9.
doi: 10.1016/j.ajem.2020.05.085. Epub 2020 May 28.

A new frontier in pelvic fracture pain control in the ED: Successful use of the pericapsular nerve group (PENG) block

Josh Luftig [1], Andrea Dreyfuss [2], Daniel Mantuani [3], Kaitlen Howell [2], Angela White [2], Arun Nagdev [3]

Affiliations + expand

PMID: 32532621 DOI: 10.1016/j.ajem.2020.05.085

Abstract

The pericapsular nerve group (PENG) block is a novel ultrasound-guided regional anesthesia technique derived from recent anatomic studies detailing the sensory innervation of the hip. Targeting these terminal sensory branches, the PENG block was originally developed as a potentially more effective block for perioperative hip fracture anesthesia, with the added benefit of preserving motor function. Subsequent research with higher volumes of local anesthetic demonstrated the successful utilization of PENG block for perioperative acetabular fractures. This raises the possibility that the PENG block may have a role in the Emergency Department (ED) where regional anesthesia options for pelvic fractures are lacking. Herein, we present the first description of PENG blocks successfully used for pelvic fractures in the ED setting.

Case Reports > Reg Anesth Pain Med. 2023 May;48(5):230-233. doi: 10.1136/rapm-2022-104151.
Epub 2022 Dec 19.

Novel use of continuous pericapsular nerve group (PENG) block technique for traumatic superior and inferior pubic rami fractures: a case report

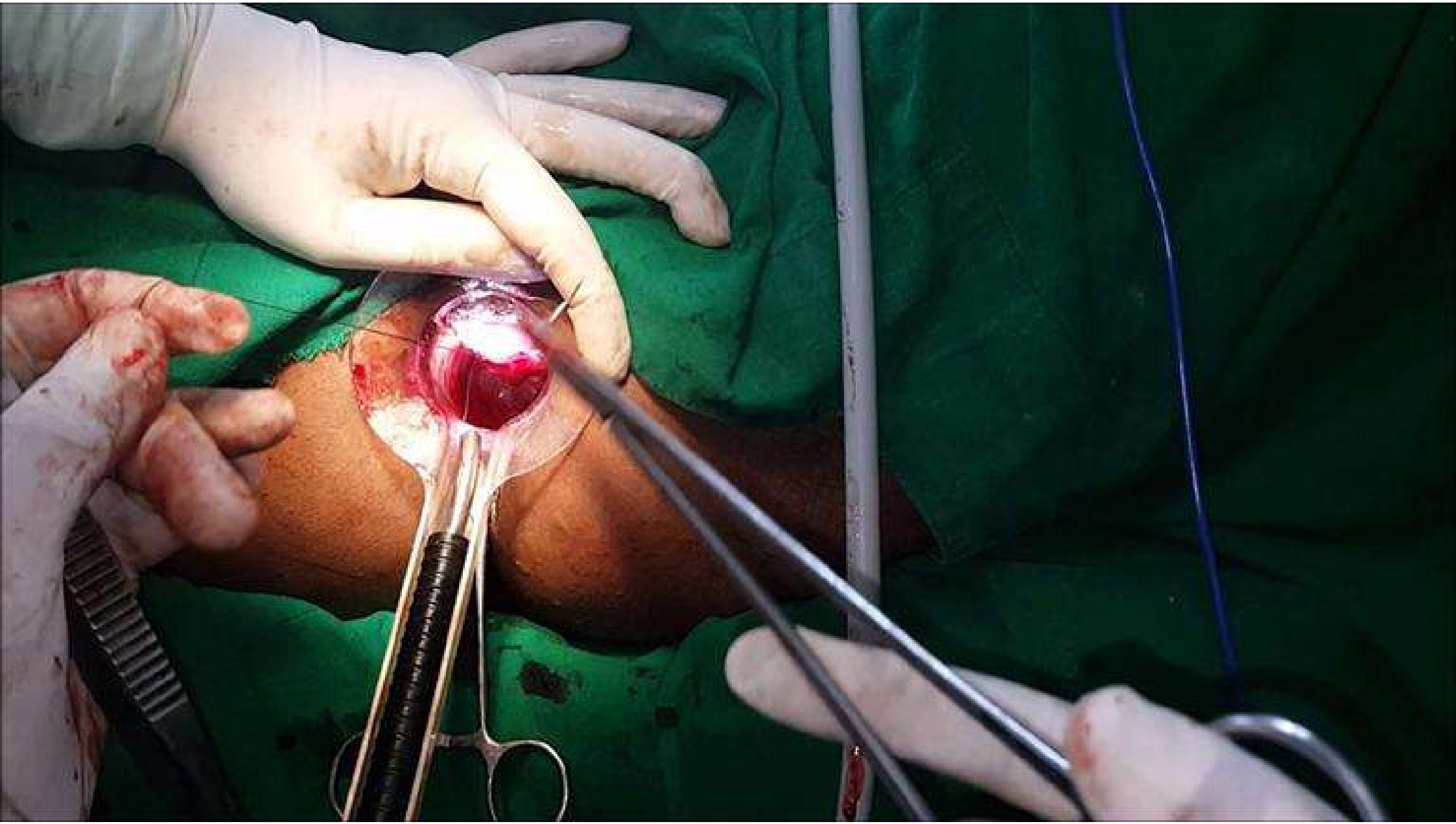
Aneurin Moorthy [1], Stephen Choi [2], Ben Safa [2], Paul G McHardy [2], Ahtsham U Niazi [2]

Abstract

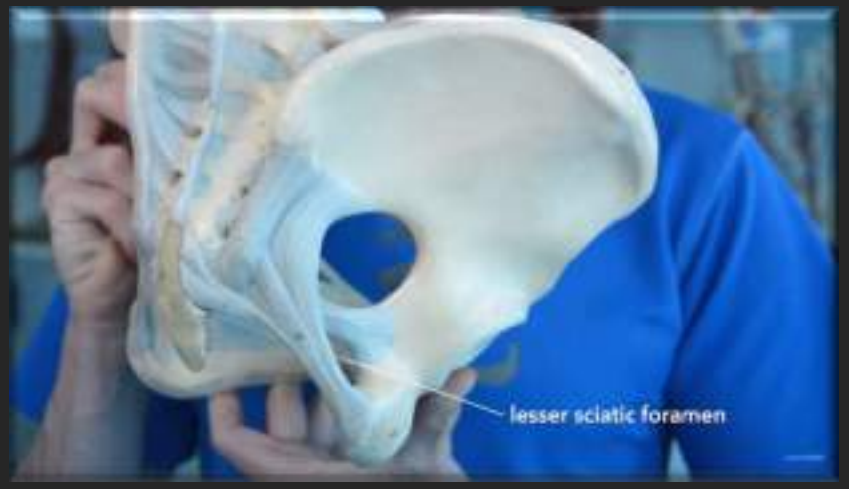
Background: Pubic rami fractures are painful injuries more commonly seen in the elderly with osteoporosis after high velocity trauma. In the most cases, management is conservative and non-operative with the goal to provide optimal pain relief to facilitate early mobilization and hospital discharge. Unfortunately, opioids remain the mainstay analgesic option and regional anesthesia techniques are limited but may include lumbar epidural anesthesia.

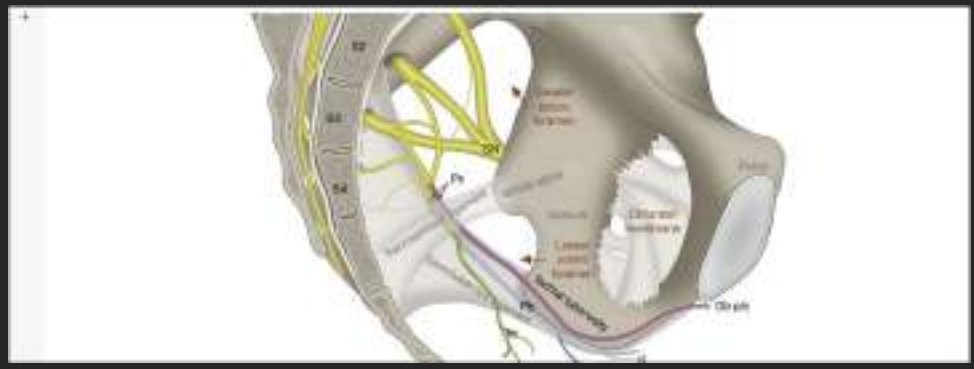
Case presentation: A female patient in her 80s presented to the emergency department of a level 1 trauma center following a high-speed motor vehicle collision. The patient suffered multiple non-life-threatening injuries. Notably, the patient was experiencing severe right groin and leg pain secondary to superior and inferior pubic rami fractures. Due to the severity of this pain, the patient was unable to mobilize or participate with physiotherapy. A lumbar epidural anesthesia technique was not deemed suitable and instead, we inserted a continuous pericapsular nerve group (PENG) block with a programmed intermittent bolus regimen. Immediate relief of pain was achieved and 48 hours later, the patient still reported satisfactory pain control and started to independently mobilize.

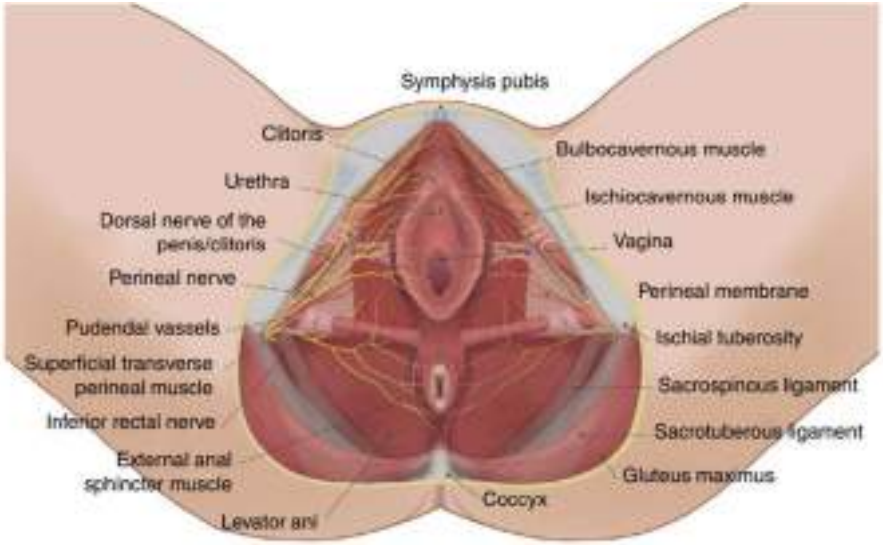
Conclusion: Analgesia options are limited in pubic rami fractures. We present the first published case of a novel use of the PENG block with a continuous catheter technique for the analgesic management of a traumatic superior and inferior pubic rami fracture. The clinical utility of this technique in pubic ramus fractures warrants further clinical investigation.

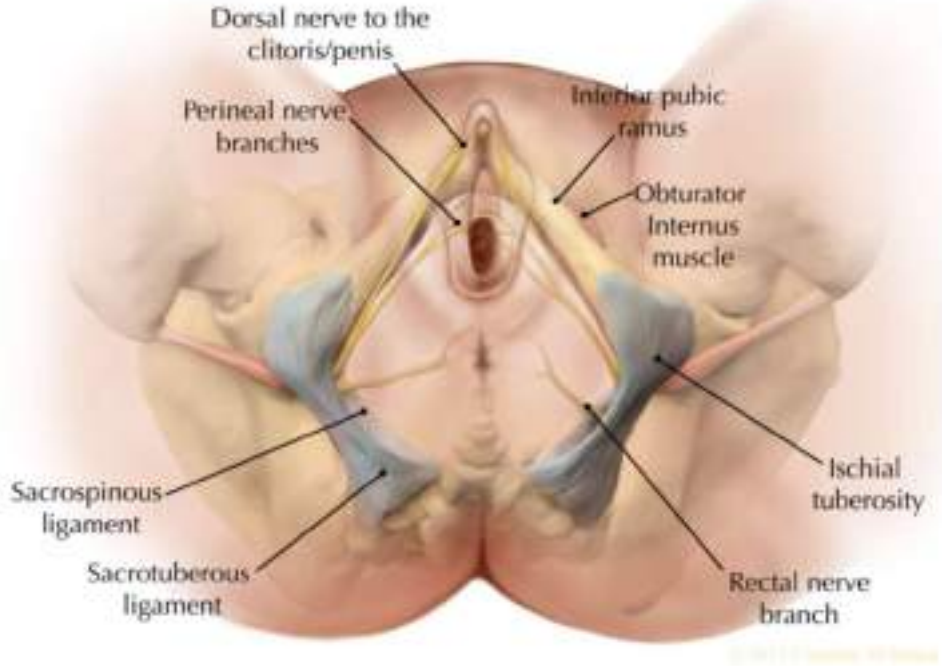


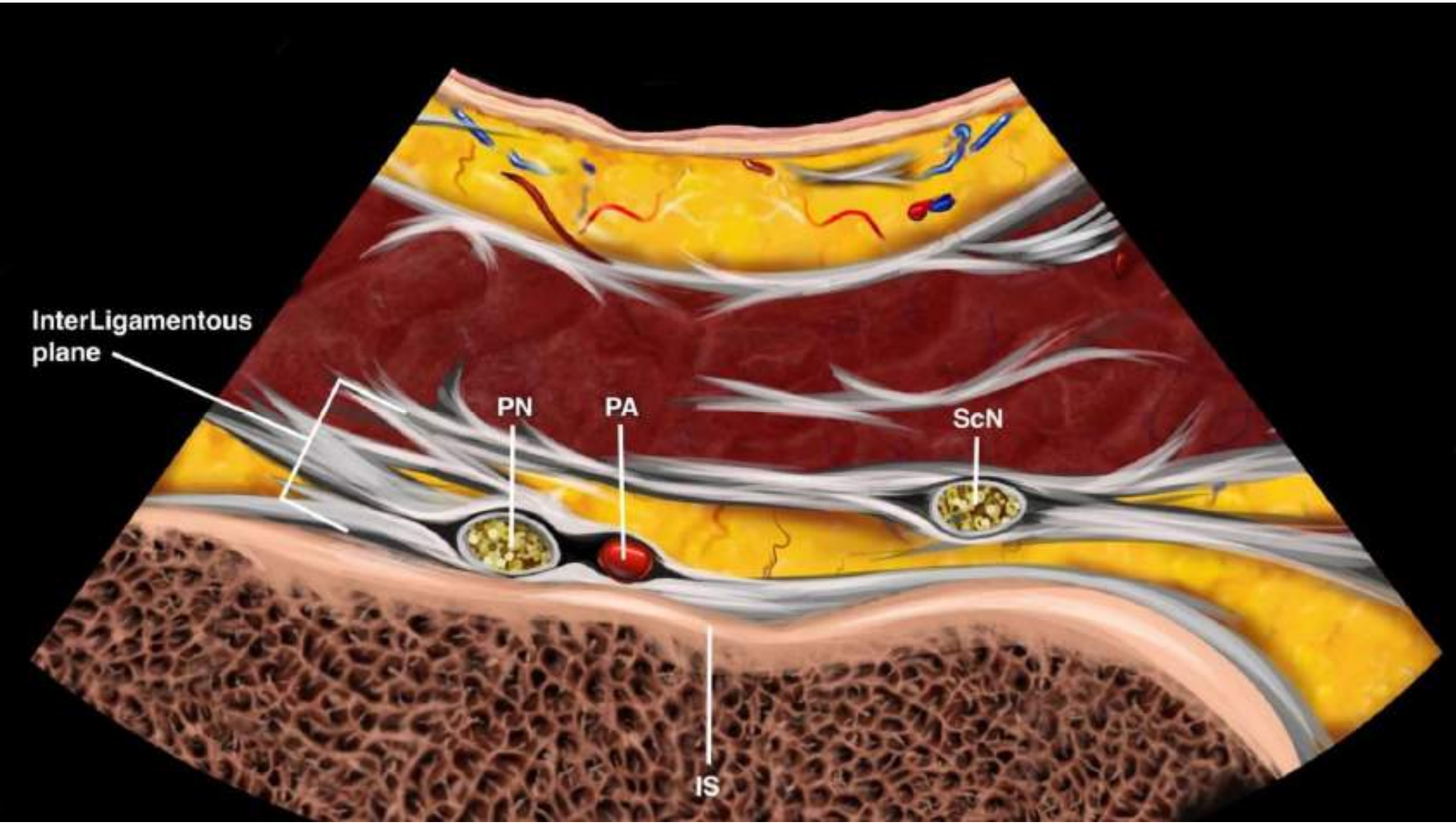
Nerve roots	Branchings		Sensory innervation	Motor innervation	Autonomic
Pudendal nerve (Ph) S1 S2-S4 S5 Anatomic presentation 30% autonomic and 70% somatic; 50% sensory and 20% motor	Dorsal branch of the penis/clitoris S2 (DSpic)	Clitoral branch	Erectile tissue of the corpus cavernosum and crus of the penis/clitoris and the skin over the dorsolateral aspect of the foreskin, glans and penis/clitoris	Muscles involved in erection	Erection initiation and maintenance (parasympathetic)
		Pubic branch			
	Perineal branch (Ph)	Deep/muscular (d)	Lower third of the vagina and urethra	Superficial and deep transverse perineal muscle, bulbospongiosus, ischiocavernosus, urethral sphincter, ant. portion of the ext. anal sphincter and variable areas of the levator ani	Conscious sensation of the need to urinate
		Superficial: Medial branch	Posterior portion of the perineal skin and scrotum/labia majora and labia minora	To the external sphincter and variable innervation of the levator ani	
		Posterolateral Branch			
	Inferior rectal branch S3 (Ins)		Sensory innervation of the anal circumference skin, the caudal third of the rectum and posterior vulva	Levator ani muscle and external anal sphincter	Conscious awareness of the need to defecate

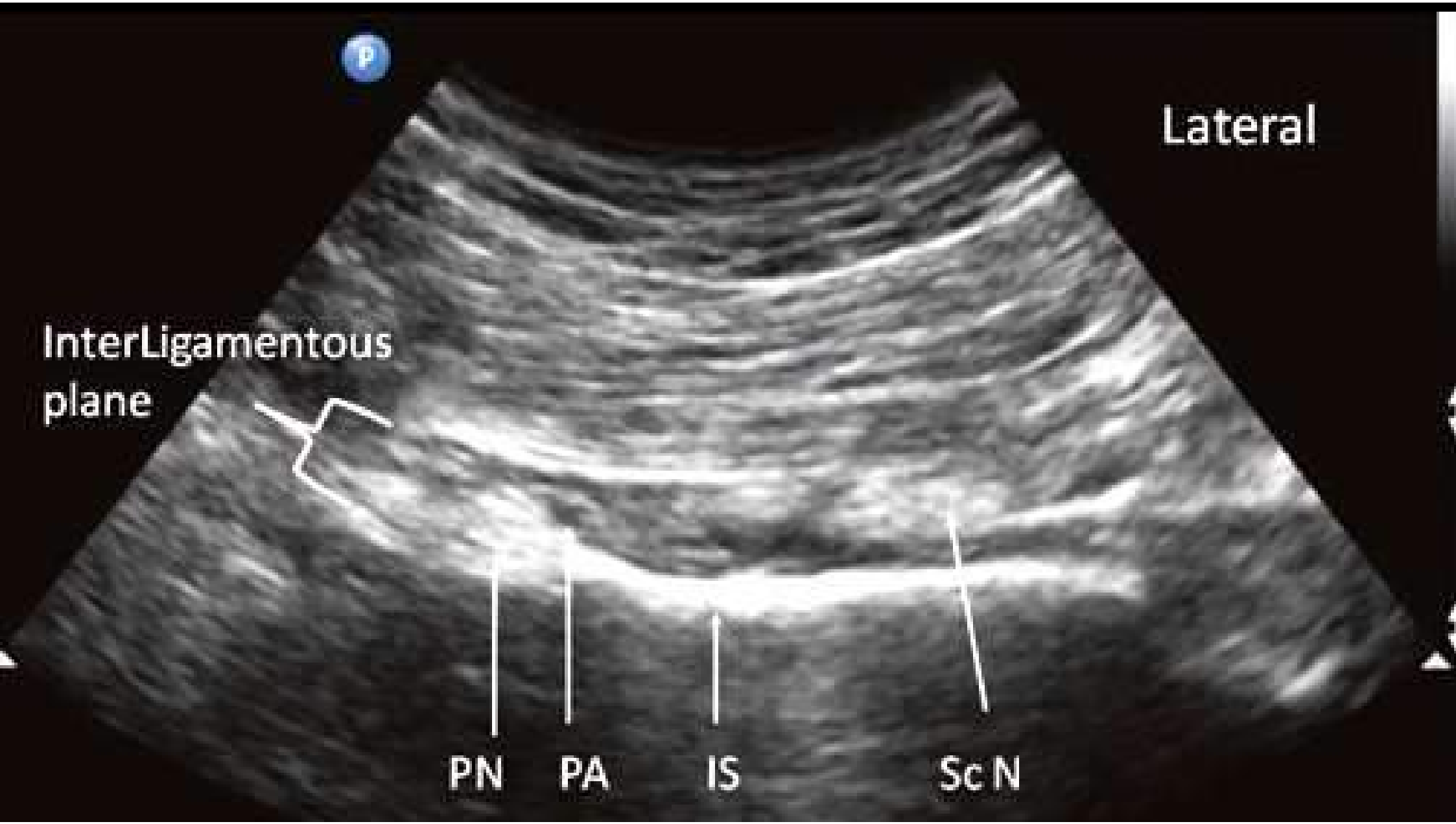


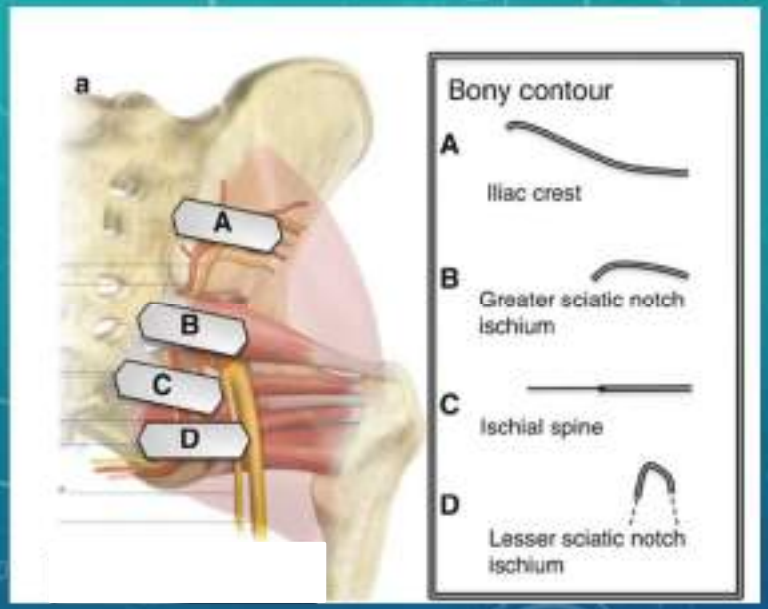


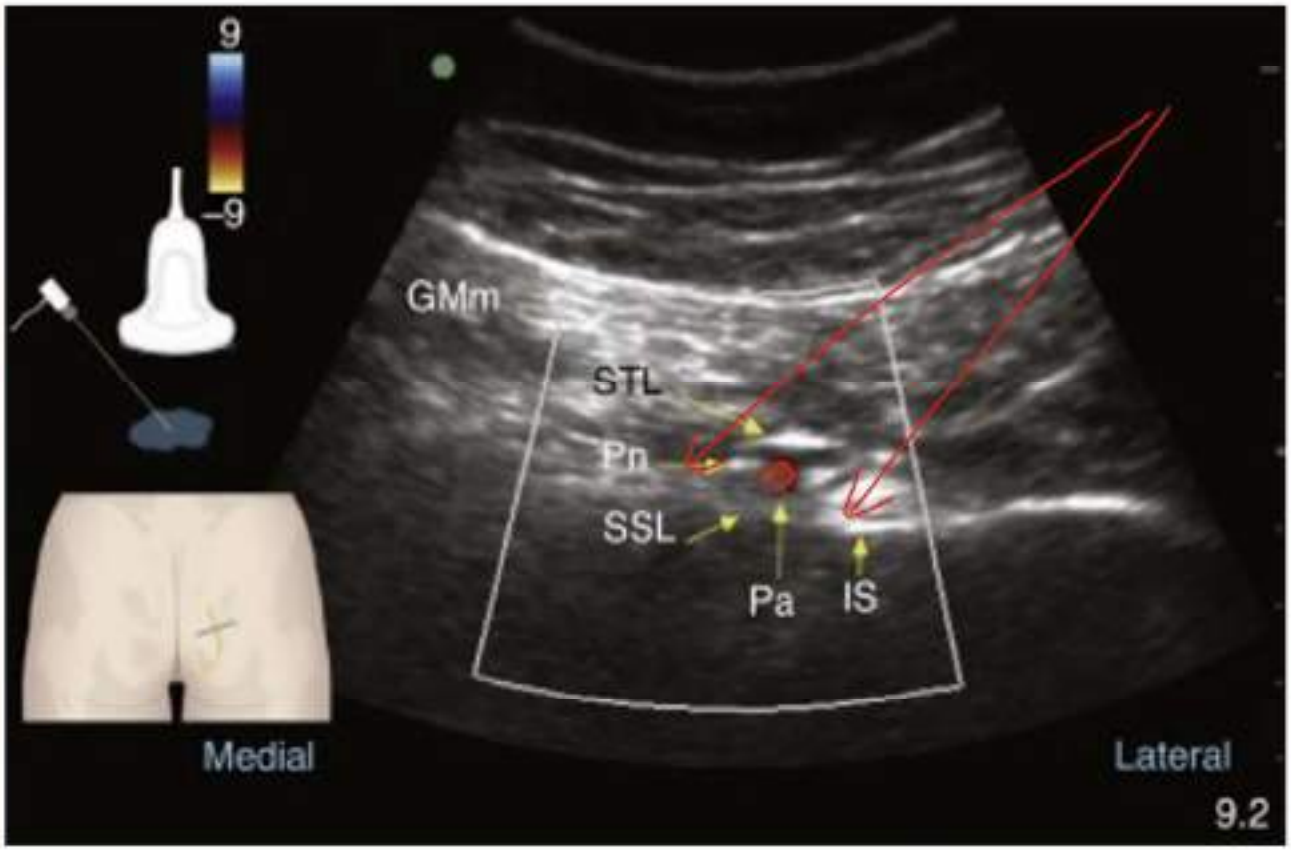

Symphysis pubis
Clitoris
Urethra
Dorsal nerve of the penis/clitoris
Perineal nerve
Pudendal vessels
Superficial transverse perineal muscle
Inferior rectal nerve
External anal sphincter muscle
Levator ani
Coccyx
Bulbocavernous muscle
Ischiocavernous muscle
Vagina
Perineal membrane
Ischial tuberosity
Sacrospinous ligament
Sacrotuberous ligament
Gluteus maximus


Dorsal nerve to the clitoris/penis
Perineal nerve branches
Inferior pubic ramus
Obturator Internus muscle
Ischial tuberosity
Sacrospinous ligament
Sacrotuberous ligament
Rectal nerve branch


InterLigamentous plane
PN
PA
ScN
IS


Lateral
InterLigamentous plane
PN
PA
IS
Sc N





Colombian Journal of Anesthesiology Volume 45, Issue 3, July–September 2017, Pages 200-209.

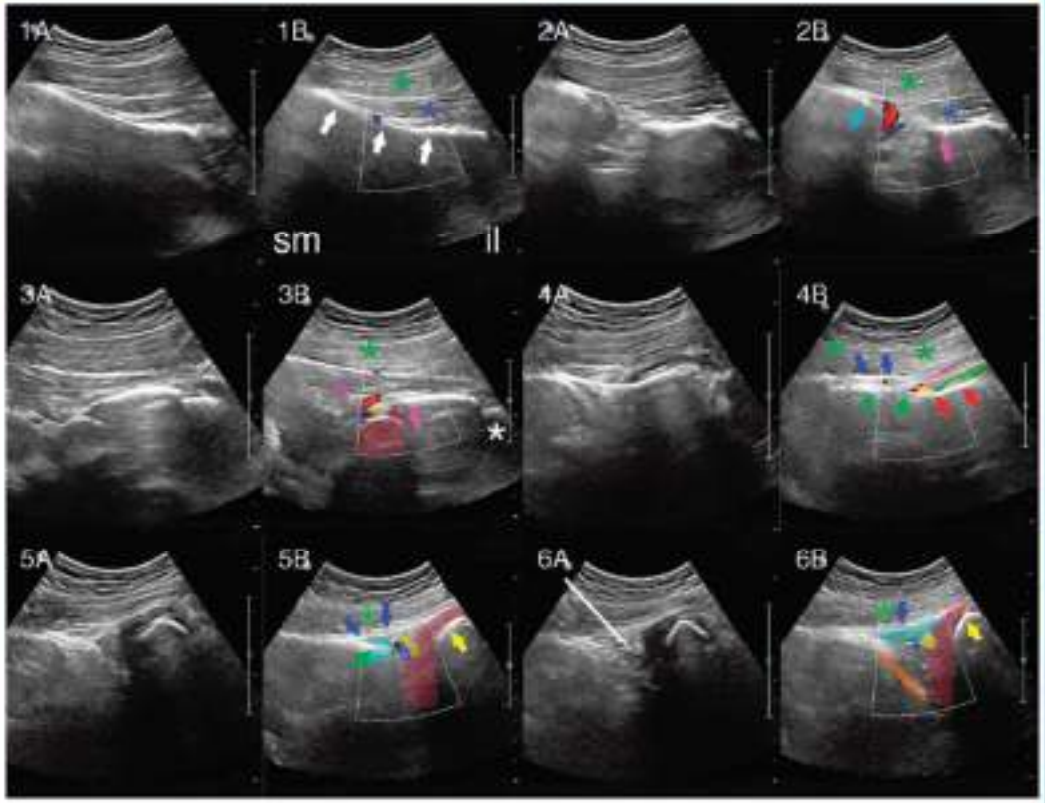
CHRONIC AND INTERVENTIONAL PAIN

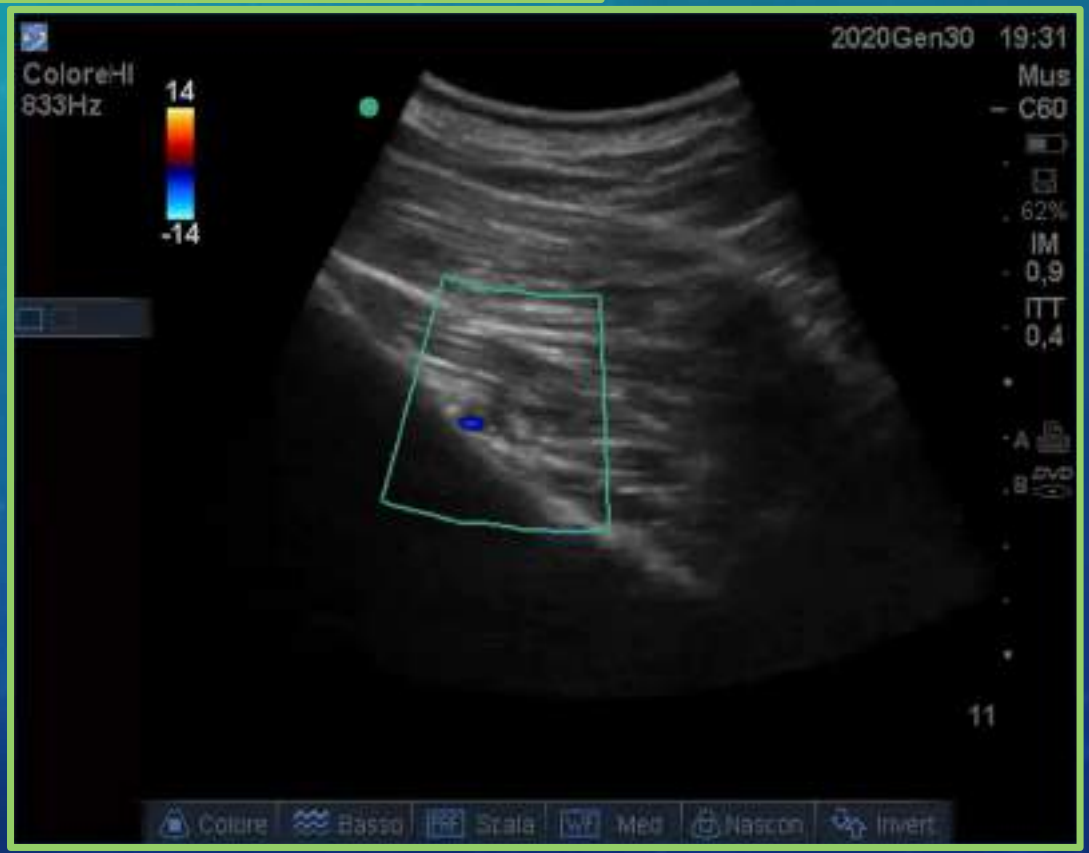
BRIEF TECHNICAL REPORT

Ultrasound-Guided Pudendal Nerve Block at the Entrance of the Pudendal (Alcock) Canal

Description of Anatomy and Clinical Technique

Thomas Fichtner Bendtsen, MD, PhD, Teresa Parnas, MD, PhD,† Bernhard Moriggl, MD, PhD,‡ Vincent Chan, MD,§ Lilli Lundby, MD, PhD,|| Steen Buntzen, MD, PhD,|| Karoline Dalgaard, MD,* Birgitte Brandsborg, MD, PhD,* and Jens Berglum, MD, PhD#*





Hindawi
Pain Research and Management
Volume 2021, Article ID 6644262, 10 pages
https://doi.org/10.1155/2021/6644262

Research Article

Ultrasound-Guided Pudendal Nerve Block Combined with Propofol Deep Sedation versus Spinal Anesthesia for Hemorrhoidectomy: A Prospective Randomized Study

Jian He, Lei Zhang, Dong L. Li, Wan Y. He, Qing M. Xiong, Xue Q. Zheng, Mei J. Liao, and Han B. Wang

Department of Anesthesiology, The First People's Hospital of Foshan, Foshan, China

SA Group: Ropivacaina 0,5% 2ml + Sedation with Dexmedetomidine 0,5mcg/Kh/h

PNB Group: Ropivacaine 0,4% 30 ml + Dex 0,5 mcg/Kg (15 ml for each side) + Sedation with Propofol TCI Cp 2 mcg/ml (up to 4,5 mcg/ml) + 3-5 mcg Sufentanil ev

Perioperative management: 1 g Paracetamolo 1h preop – 500 mg Paracetamolo every 6 h postop – Oxycodone mg 10 every 12 h postop until the patient was discharged – PCA Sufentanil: bolus 2 mcg – lockout 10 min – maximum dose: 6 mcg/hour

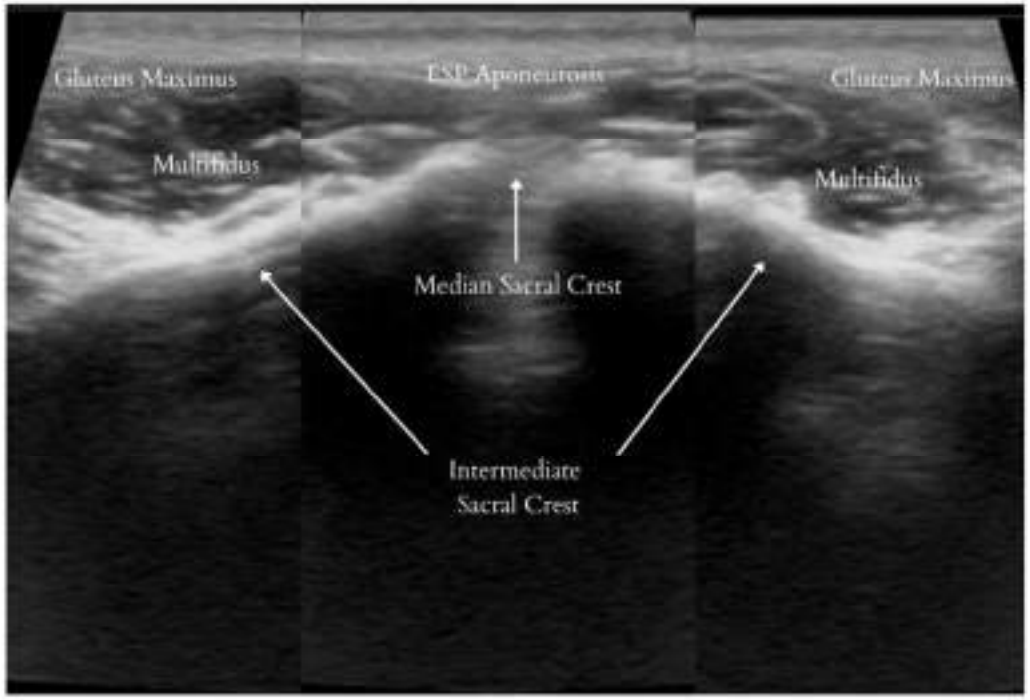
In this randomized controlled study, we demonstrated that ultrasound-guided bilateral PNB combined with deep sedation using propofol can successfully be applied to Milligan–Morgan hemorrhoidectomy. ,is anesthesia technique provided the same anal sphincter relaxation and surgical condition for surgeons as spinal anesthesia using 0.5% ropivacaine. Bilateral PNB was associated with better postoperative pain relief, reduced dosage of rescue analgesics, and lowered pain intensity at the first defecation. Moreover, PNB combined with propofol sedation could decrease the incidence of urinary retention, promoting early ambulation of patients compared to spinal anesthesia.

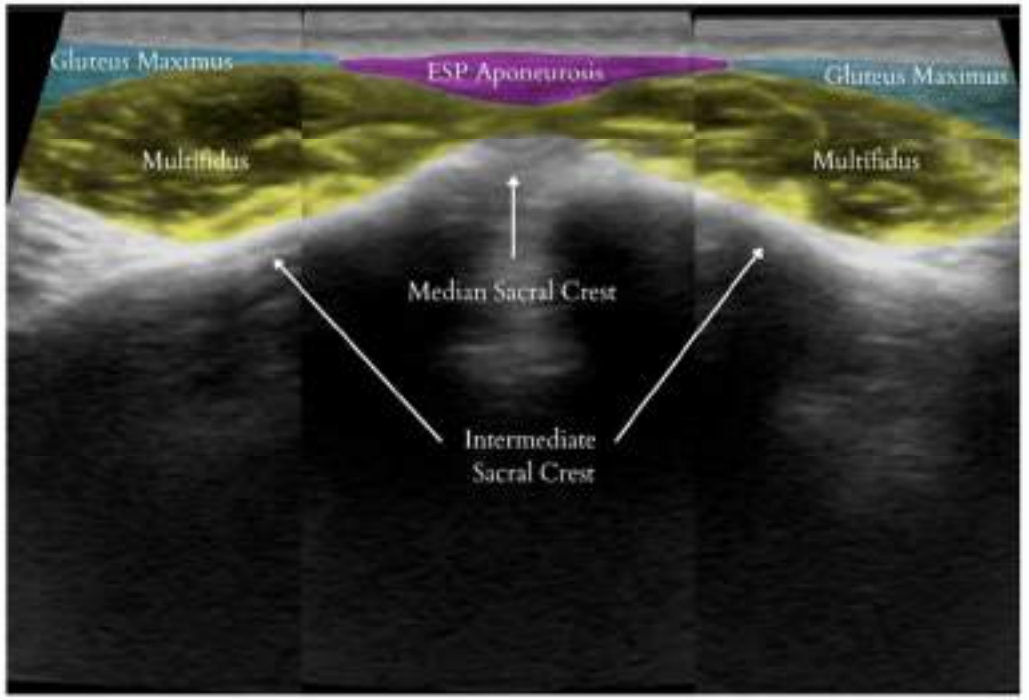
Sacral Erector Spinae Plane Block Provides Surgical Anesthesia in Ambulatory Anorectal Surgery: Two Case Reports

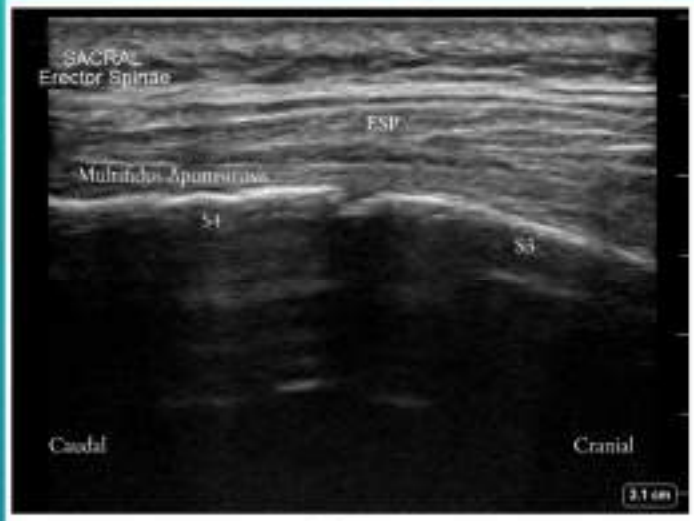
Cengiz Kaya [1], Burhan Dost [2], Serkan Tulgar [2]

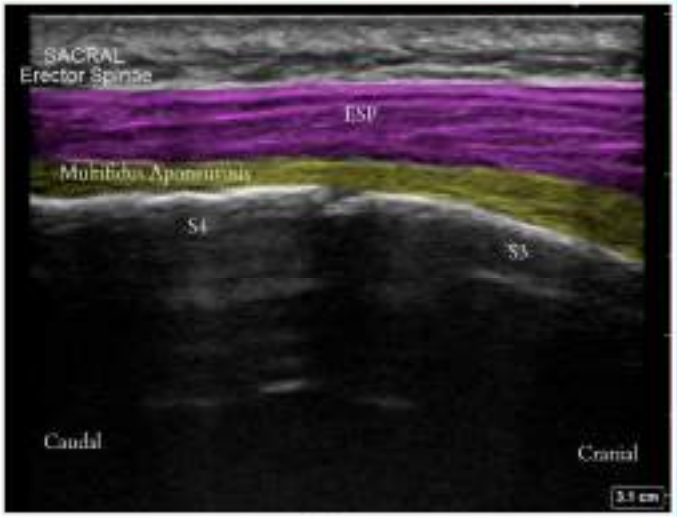
1. Anesthesiology and Reanimation, Ondokuz Mayıs University, Samsun, TUR. 2. Anesthesiology, Maltepe University Faculty of Medicine, Istanbul, TUR.

Transverse Sacral Ultrasound Anatomy

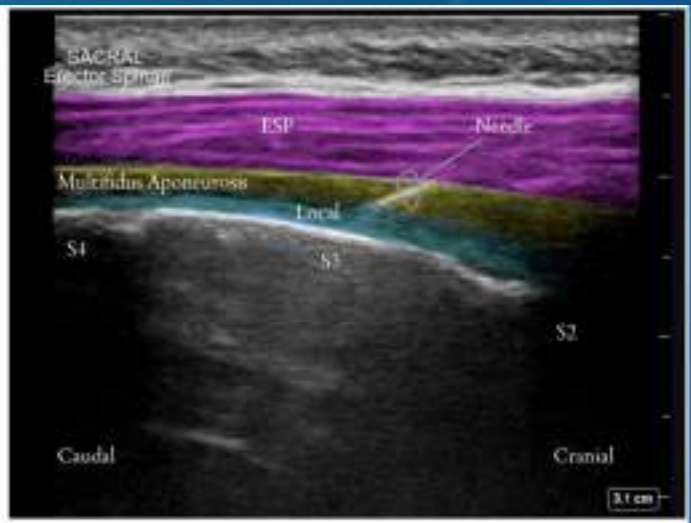


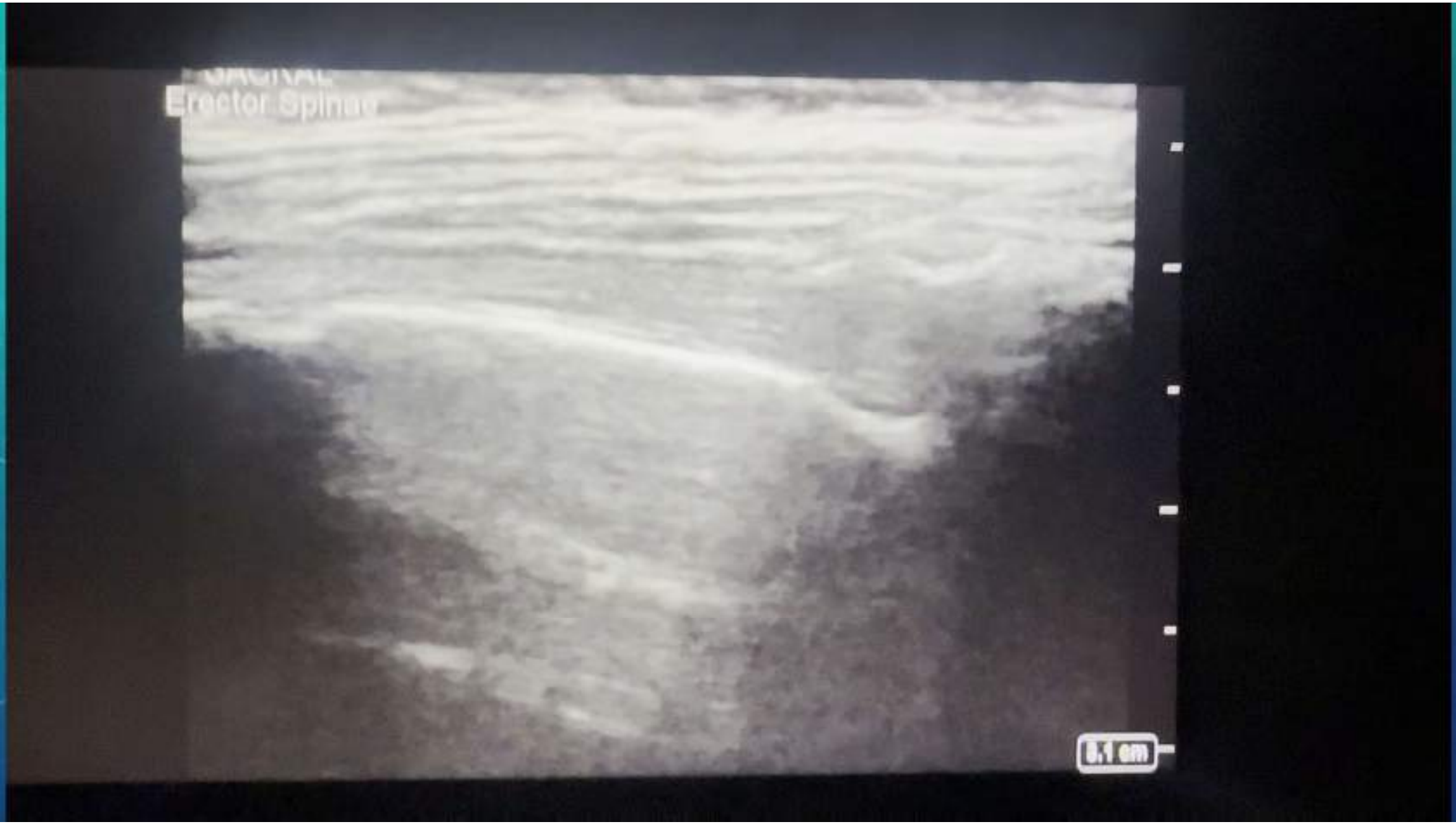



SACRAL
Erector Spinae
ESP
Multifidus Aponeurosis
S4
S3
Caudal
Cranial
3.1 cm


SACRAL
Erector Spinae
ESP
Multifidus Aponeurosis
S4
S3
Caudal
Cranial
3.1 cm


SACRAL
Erector Spinae
ESP
Multifidus Aponeurosis
Local
S4
S3
S2
Caudal
3.1 cm


SACRAL
Erector Spinae
ESP
Needle
Multifidus Aponeurosis
Local
S4
S3
S2
Caudal
Cranial
3.1 cm


Erector Spinae
0.1 cm

Case Presentation

Case 1

An anal fistulectomy was planned for 52-year-old man, American Society of Anesthesiologists (ASA) Classification II (weight = 98 kg, height = 177.8 cm) with no coexisting diseases. The patient had no unusual features in his medical history, and his blood tests, electrocardiograms, and a chest X-ray were evaluated as normal. He did not receive any medications. The risks and benefits of general anesthesia, spinal anesthesia, and sacral ESPB for surgical anesthesia were discussed with the patient. The patient adamantly refused general and spinal anesthesia, so sacral ESPB was decided for this patient.

Case 2

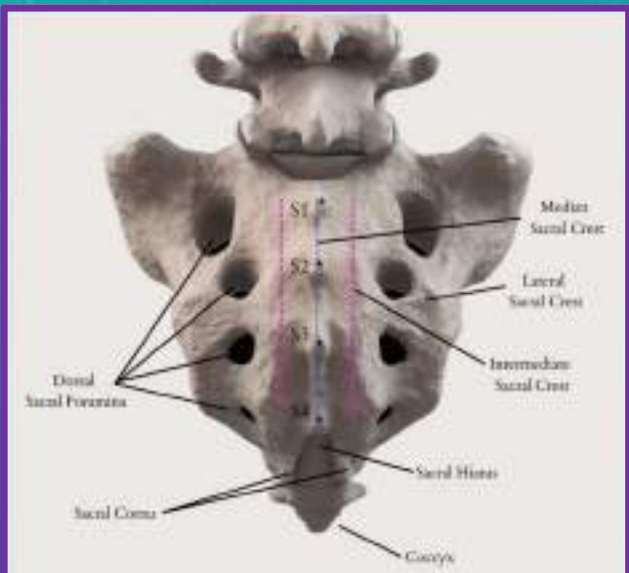
A 46-year-old man ASA II Class (weight = 80 kg, height = 185 cm) and was scheduled for perianal fistulectomy. His medical history was significant for a 20 pack-year of cigarette smoking and ulcerative colitis. The patient was receiving mesalamine 500 mg every eight hours. Blood tests were normal, electrocardiograms showed sinus rhythm, and imaging (echocardiogram, chest X-ray, and computed tomography) appeared normal. The patient preferred sacral ESPB over general anesthesia since he had experienced severe postoperative nausea and vomiting during a previous surgery.

After standard monitoring in the operating room, the patients were placed in a prone position for the block procedure. In addition to oxygen (flow rate 2-3L/min), a midazolam bolus (IV 2 mg) was administered for sedation and a remifentanil infusion was started. The remifentanil infusion (0.05-0.1 µg/kg/min) was titrated to enable communication with patients (Ramsay Sedation Scale 2) throughout the surgery.

Sensorial Blockade S2-S5 dermatomes 30 min after block

Conclusions

In conclusion, we determined that the sacral ESPB can be safely used for surgical anesthesia under US guidance in our cases without causing any motor weakness or hemodynamic instability. This block can be considered in anorectal surgery as an alternative technique for spinal or general anesthesia. However, most of the literature information on its effectiveness is based on case reports. Therefore, randomized controlled trials are needed that investigate the analgesic efficacy/adverse effects. In addition, anatomical cadaver and imaging studies could also provide a better understanding of the mechanism of action.



Posterior

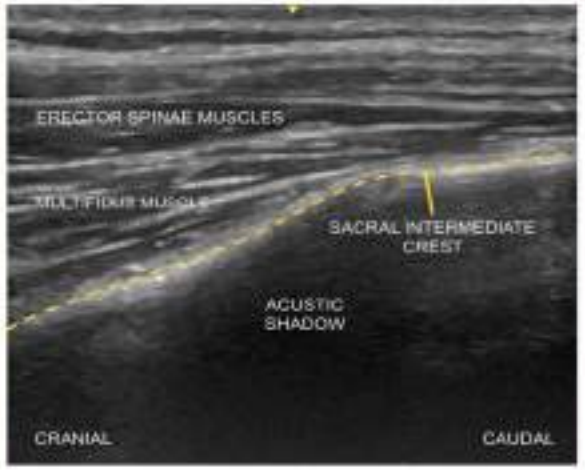
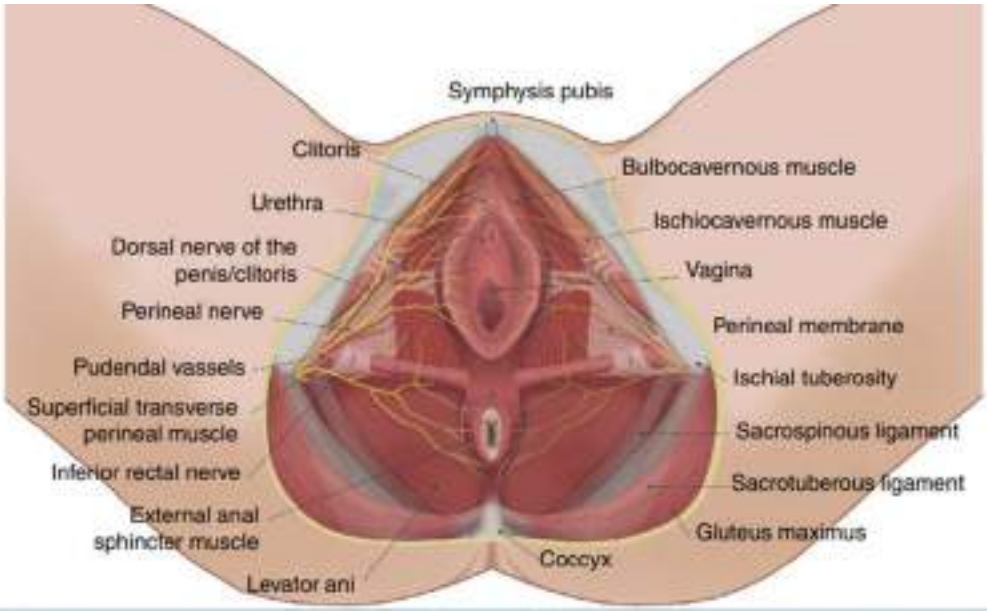
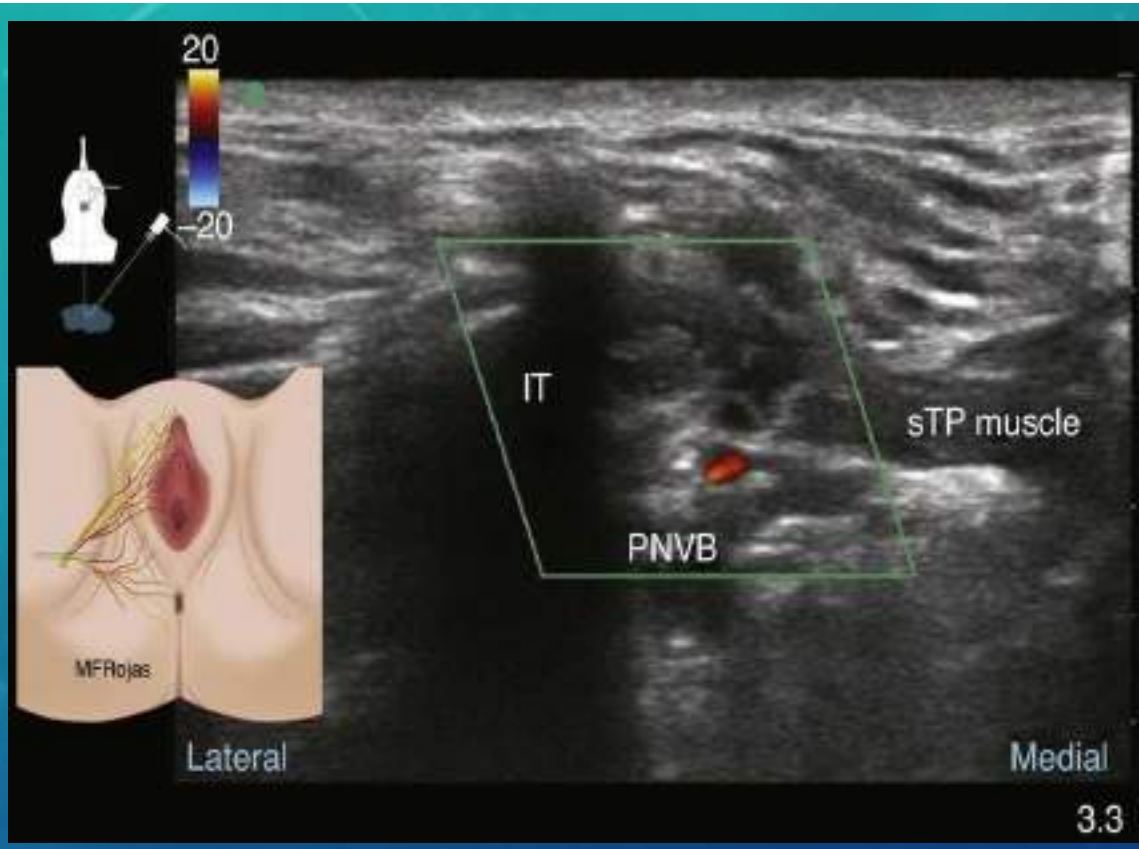


FIGURE 1: The sonoanatomy relevant for the ultrasound-guided sacral erector spinae plane block (ESPB). Dashed lines represent the sacral intermediate crest.

SALA PARTO





Bloqueo pudendo ecoguiado

Ultrasond Guided Pudendal Block

T. Parras[1] y R. Blanco[2]

[1] Lewisham University Hospital. Londres, Reino Unido
[2] King's College University Hospital. Londres, Reino Unido

Autor para correspondencia: teresaparrasmaldonado@hotmail.com

Caso Clinico

- Paziente di 32 anni, II Gravidanza, I Para, 39 settimana di gestazione, Barriera Linguistica
- Partoanalgesia h 18:00 → VAS 70, Dilatazione 4 cm, Collo appianato e centralizzato, Parte presentata -2, MAC integre. CSE 2,5 mcg Sufentanil + Ropivacaina 0,04% mg 2 + sf a 5ml Intratecali
- H 19:30 rottura delle membrane spontanea, liquido chiaro. Dilatazione completa, VAS 50, Parte presentata -1/0
- Al momento di eseguire il top-up ostruzione del catetere epidurale. Paziente non collaborante Per poter eseguire riposizionamento.
- H 19:40 PS con lacerazione IV grado (coinvolgimento mucosa ano-rettale)
- Dopo secondamento si esegue Blocco del Nervo Pudendo ecoguidato bilaterale (Mepivacaina 2% 4ml + Ropivacaina 0,5% 4 ml)
- Primo tempo chir. eseguito in box travaglio poi h 21:00 si trasferisce la pz in Sala Operatoria per miglior comfort dell'operatore e monitoraggio multiparametrico continuo.


Color
2500Hz
20
-20
+0°
Nrv
L38
70%
MI
1.5
TIS
1.0
A
B
DVD
3.8
Color
Med
PRF
Scale
Invert
+0
Page 1/2

REVIEW

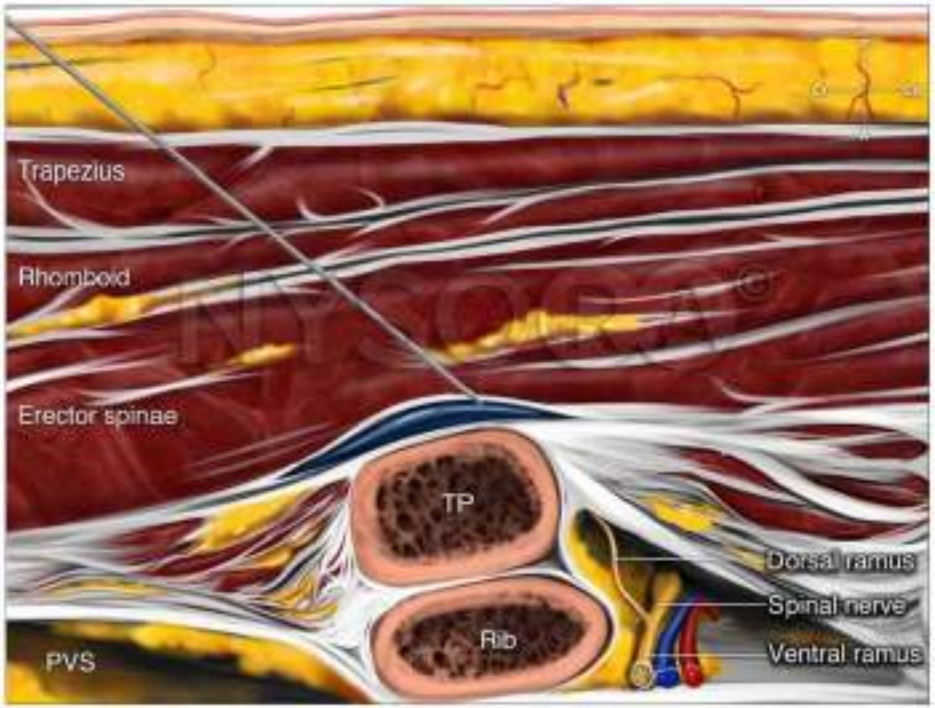
An update on regional analgesia for rib fractures

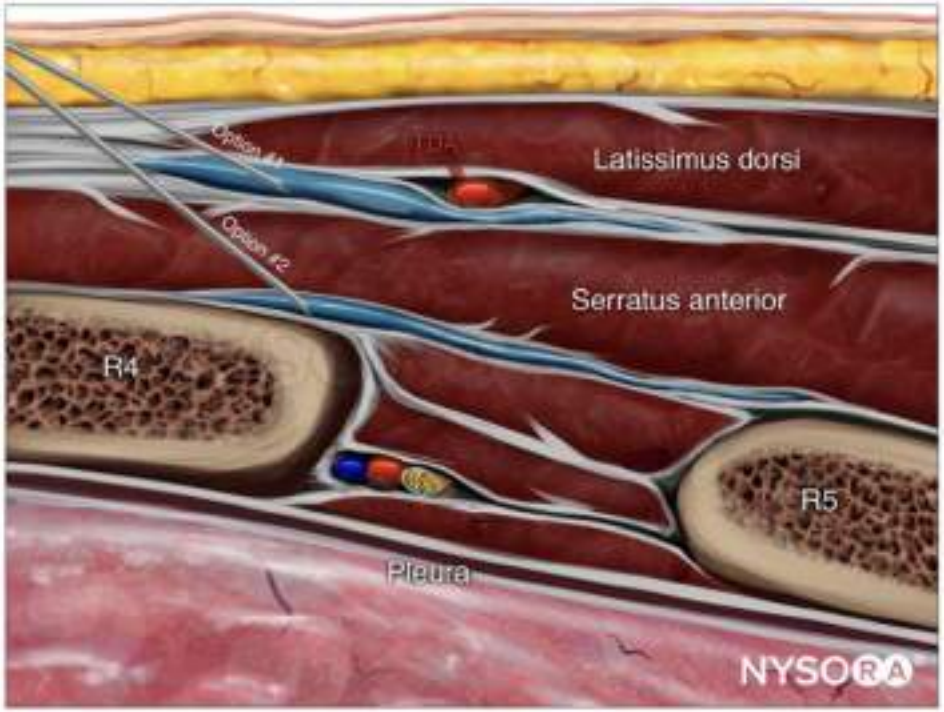
Venkatesan Thiruvenkatarajan[a,b], Hillen Cruz Eng[c], and Sanjib Das Adhikary[c]

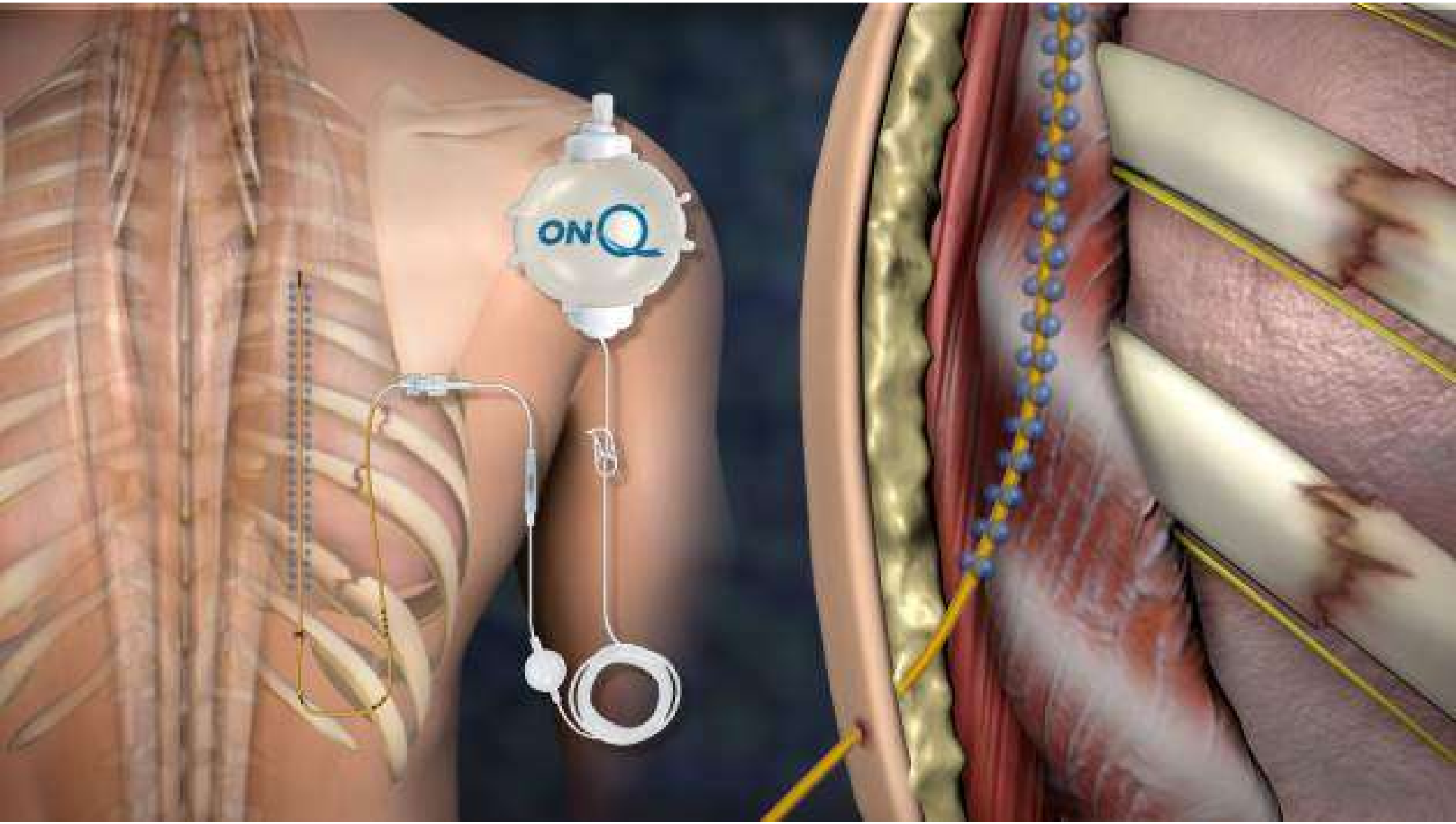
- **Rib fractures** occur most commonly because of **blunt thoracic trauma** and occur in **up to 12% of all trauma patients**
- Pulmonary morbidity is increased in these patients as a result of **diminished gas exchange** from fracture induced pulmonary injury and from **inadequate analgesia** compromising both ventilation and pulmonary mechanics
- Various **factors** affect **outcome and mortality** after rib fractures. These include the **number of ribs fractured**, **preexisting comorbidities, advanced age, and level of associated pain**. Of these, pain is a significant modifiable factor

The most widely used regional techniques for providing analgesia to patients with rib fractures are **paravertebral block (PVB)** and **thoracic epidural**

Newer myofascial plane blocks such as the **erector spinae plane block** and the **serratus anterior plane block** offer effective alternatives when paravertebral or epidural techniques are contraindicated or not feasible (as in the case of coagulation abnormalities, inability to properly position a patient, and in patients with fractures at multiple sites).


Trapezius
Rhomboid
Erector spinae
TP
Rib
PVS
Dorsal ramus
Spinal nerve
Ventral ramus


Option #1
Option #2
Latissimus dorsi
Serratus anterior
R4
R5
Pleura
NYSORA


ONQ

The Journal of Physical Therapy Science

Case Study

Serratus anterior fascia plane block for pain control in patients with multiple rib fractures

Ryota Katoh[1], Tomoo Mano[1,2]*, Takashi Masuda[1]

[1] Department of Rehabilitation Medicine, Nara Prefecture General Medical Center, Japan
[2] Department of Neurology, Nara Medical University: 840 Shijo-cho, Kashihara, Nara 634–8521, Japan

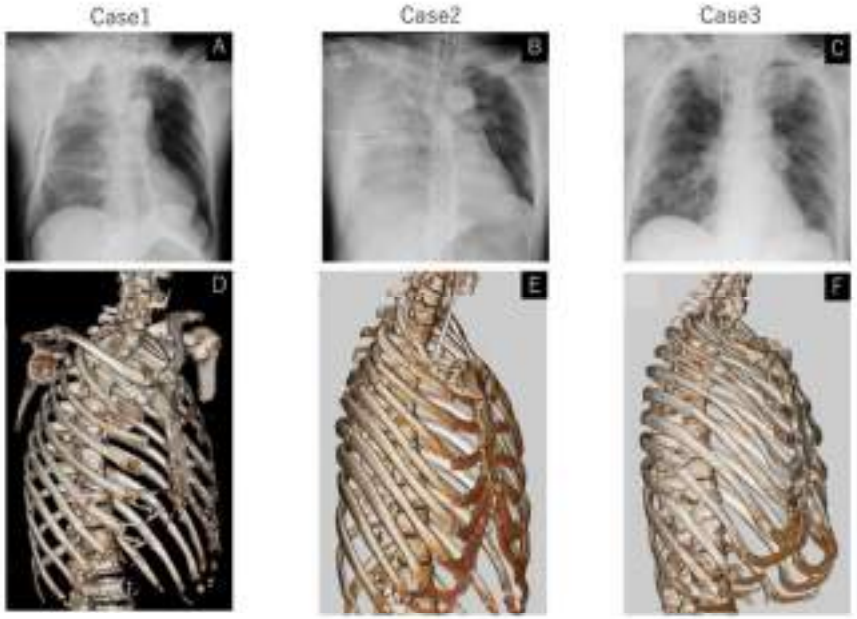


Fig. 1. Chest radiograph and computed tomography (CT) image of the ribs.
The chest radiograph shows hemopneumothorax, and the CT image shows multiple rib fractures. Case 1 (A, D), Case 2 (B, E), Case 3 (C, F).

- Patients with multiple rib fractures experience difficulty in coughing and deep breathing
- An increase in the risk of hypoventilation and pneumonia is observed in such patients
- Chest pain often impedes patients from performing respiratory physiotherapy
- Pain management plays a crucial role as pulmonary complications are observed in 11–31% of patients with multiple rib fractures
- Only 9.9–18.4% of patients with multiple rib fractures receive TEA or PVB due to hemostatic coagulation, circulatory fluctuations, risk of infection, spinal cord injury, and difficulty in repositioning due to pain
- We reported the cases of three patients with multiple rib fractures who completed respiratory physiotherapy after receiving intermittent SAP blocks for pain management.

CASE SERIES

Diaphragmatic Excursion as a Novel Objective Measure of Serratus Anterior Plane Block Efficacy: A Case Series

Brian Lentz, MD, MS*[1]
Sigmund Kharasch, MD[1]
Andrew J. Goldsmith MD, MBA[2]
Joseph Brown, MD[3]
Nicole M. Duggan, MD[3]
Arun Nagdev, MD*[4]

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[2]Massachusetts General Hospital, Department of Emergency Medicine, Boston, Massachusetts
[3]Brigham and Women's Hospital, Department of Emergency Medicine, Boston, Massachusetts
[4]University of Colorado, Department of Emergency Medicine, Aurora, Colorado

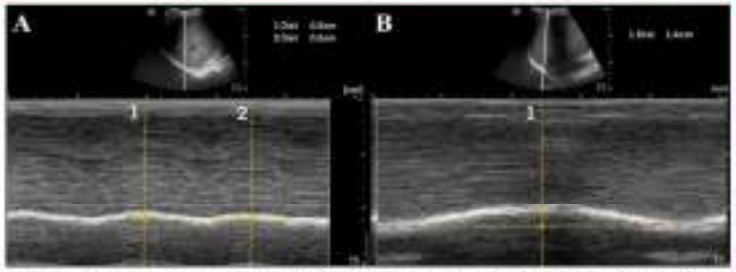


Image 2. (A) Pre-block demonstrating right-sided diaphragmatic excursion of 5 millimeters (mm) (average of two excursions). (B) Post-block demonstrating right-sided diaphragmatic excursion of 14 mm (increase of 64%).

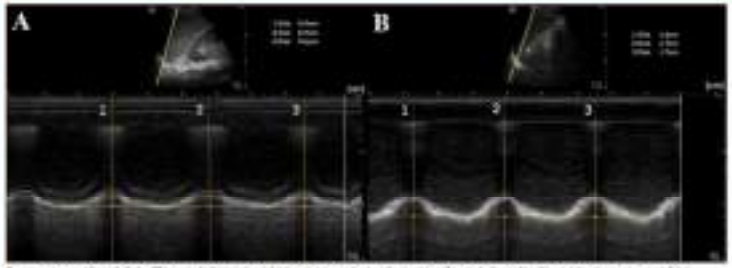


Image 3. (A) Pre-block demonstrating left-sided diaphragmatic excursion of 8 mm (average of three excursions). (B) Post-block demonstrating left-sided diaphragmatic excursion of 17 mm (increase of 53%).

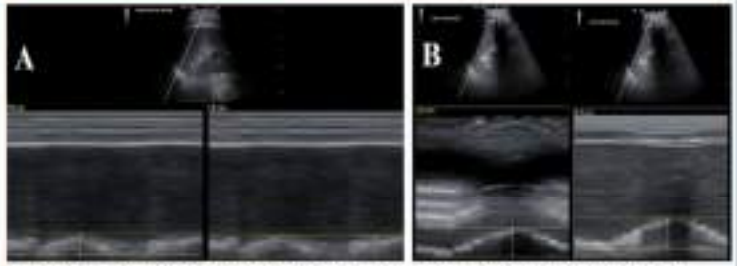
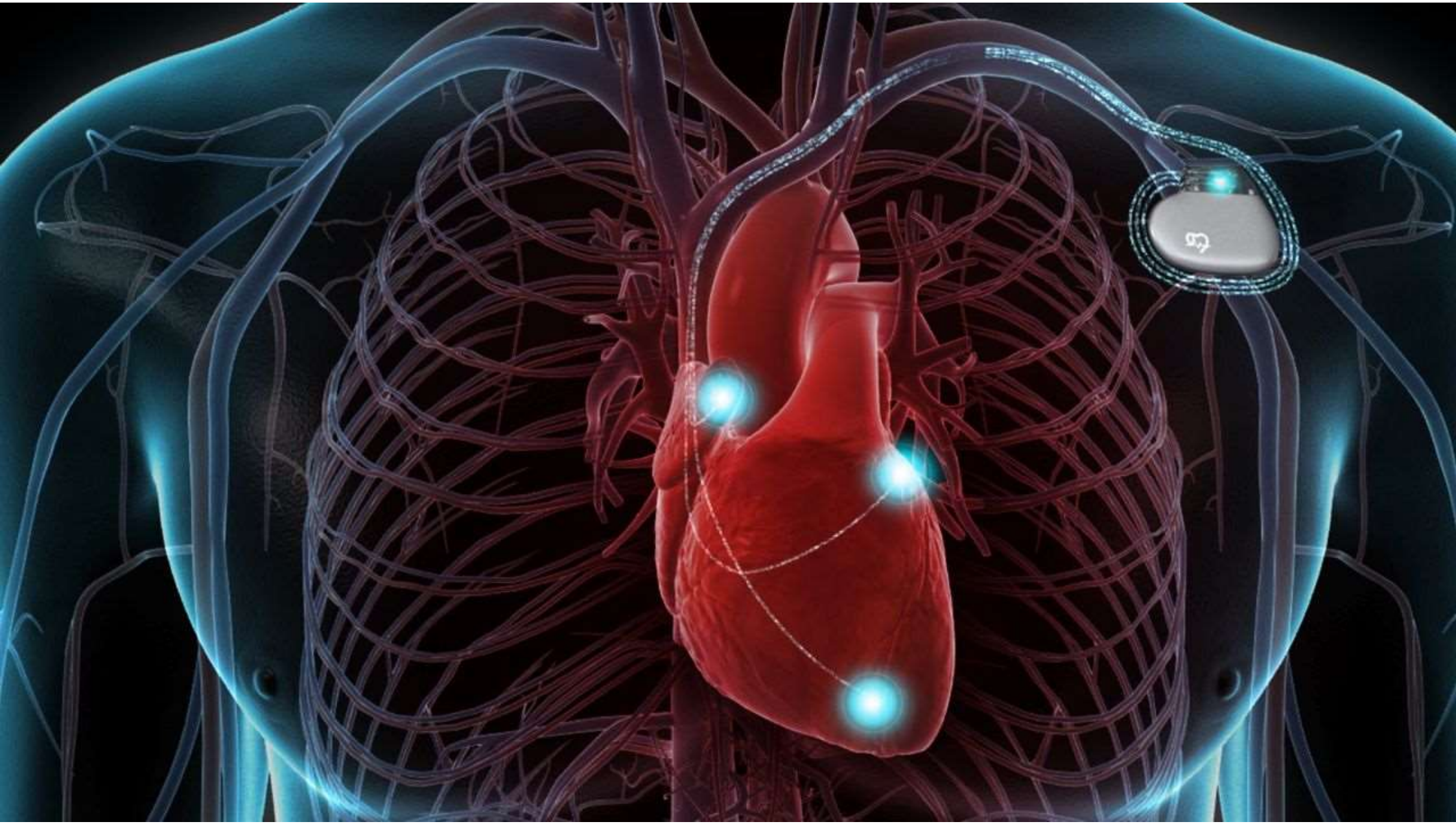
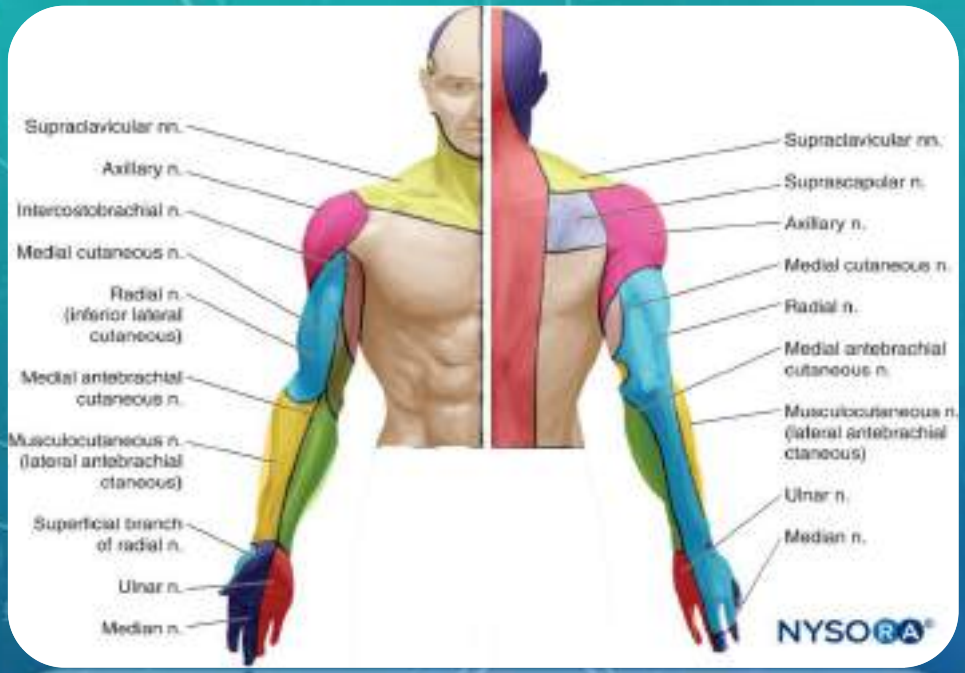


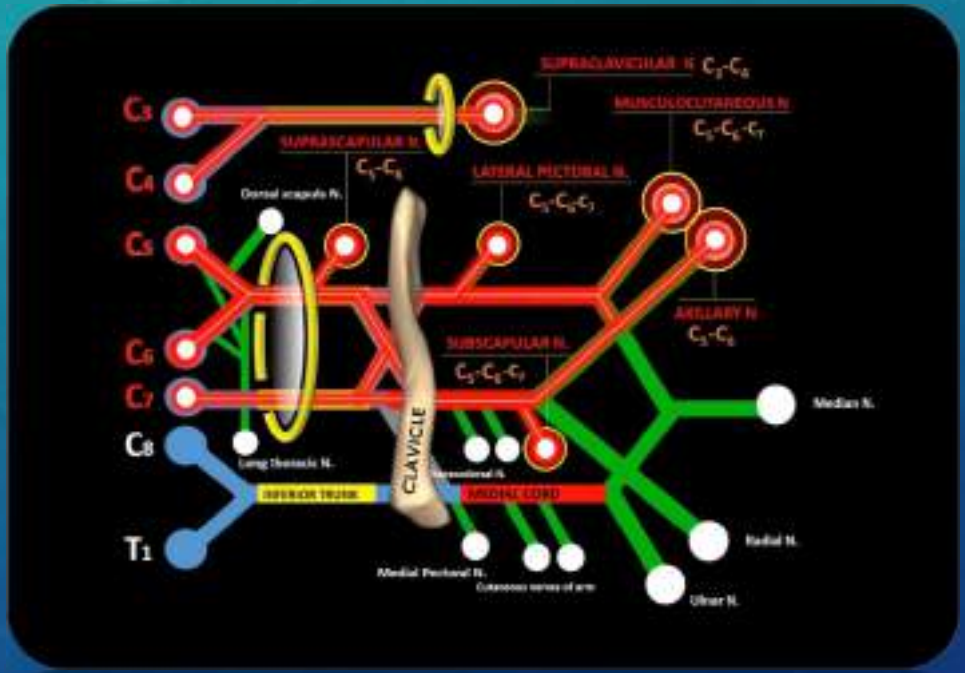
Image 4. (A) Pre-block demonstrating left-sided diaphragmatic excursion of 19 mm. (B) Post-block demonstrating left-sided diaphragmatic excursion of 32 mm (increase of 41%).

CONCLUSION

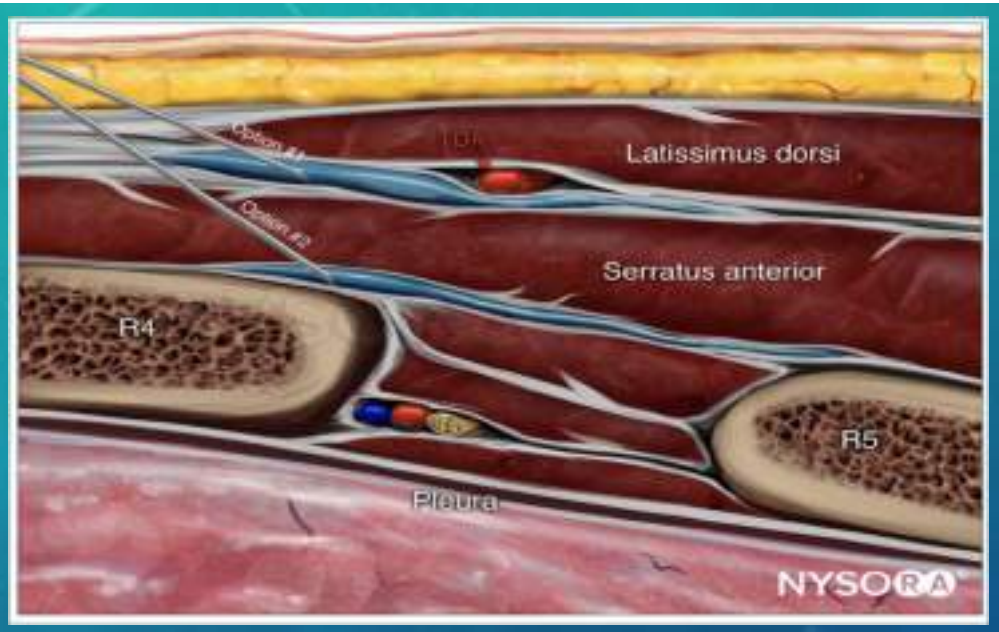
Serratus anterior plane bock performed for acute rib fractures reduced pain in all three patients. It also increased the diaphragmatic excursion and decreased the respiratory rate in all three cases. Diaphragmatic excursion may be an alternative to visual pain scores to evaluate SAPB efficacy. More data will be needed to determine whether this same relationship can extend to other ultrasound-guided nerve blocks.

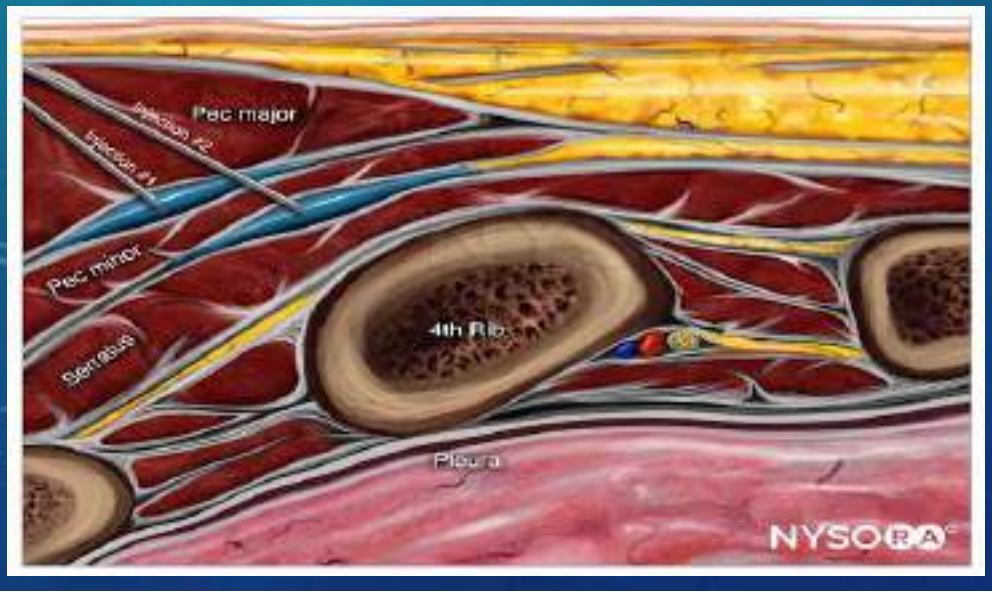



Supraclavicular nn.
Axillary n.
Intercostobrachial n.
Medial cutaneous n.
Radial n. (inferior lateral cutaneous)
Medial antebrachial cutaneous n.
Musculocutaneous n. (lateral antebrachial cutaneous)
Superficial branch of radial n.
Ulnar n.
Median n.
Supraclavicular nn.
Suprascapular n.
Axillary n.
Medial cutaneous n.
Radial n.
Medial antebrachial cutaneous n.
Musculocutaneous n. (lateral antebrachial cutaneous)
Ulnar n.
Median n.
NYSORA


C5
C6
C7
C8
T1
SUPRACLAVICULAR N. C3-C4
MUSCULOCUTANEOUS N. C5-C6-C7
SUPRASCAPULAR N. C5-C6
LATERAL PECTORAL N. C5-C6-C7
Dorsal scapula N.
SUBSCAPULAR N. C5-C6-C7
AXILLARY N. C5-C6
Median N.
Long thoracic N.
CLAVICLE
MEDIAL CORD
Radial N.
Ulnar N.
Medial Pectoral N.


MEDIAL
LATERAL
SUPRACLAVICULAR N.
GREAT AURICULAR N.
MEDIAL BRANCH
INTERMEDIATE BRANCH
LATERAL BRANCH
PHRENIC N.
SCM
AE
C5
C6
ME


Latissimus dorsi
Serratus anterior
R4
R5
Pleura
NYSORA


Pec major
Pec minor
4th Rib
Pleura
NYSORA

MINI-FOCUS ISSUE: ELECTROPHYSIOLOGY

ADVANCED

CASE REPORT: TECHNICAL CORNER

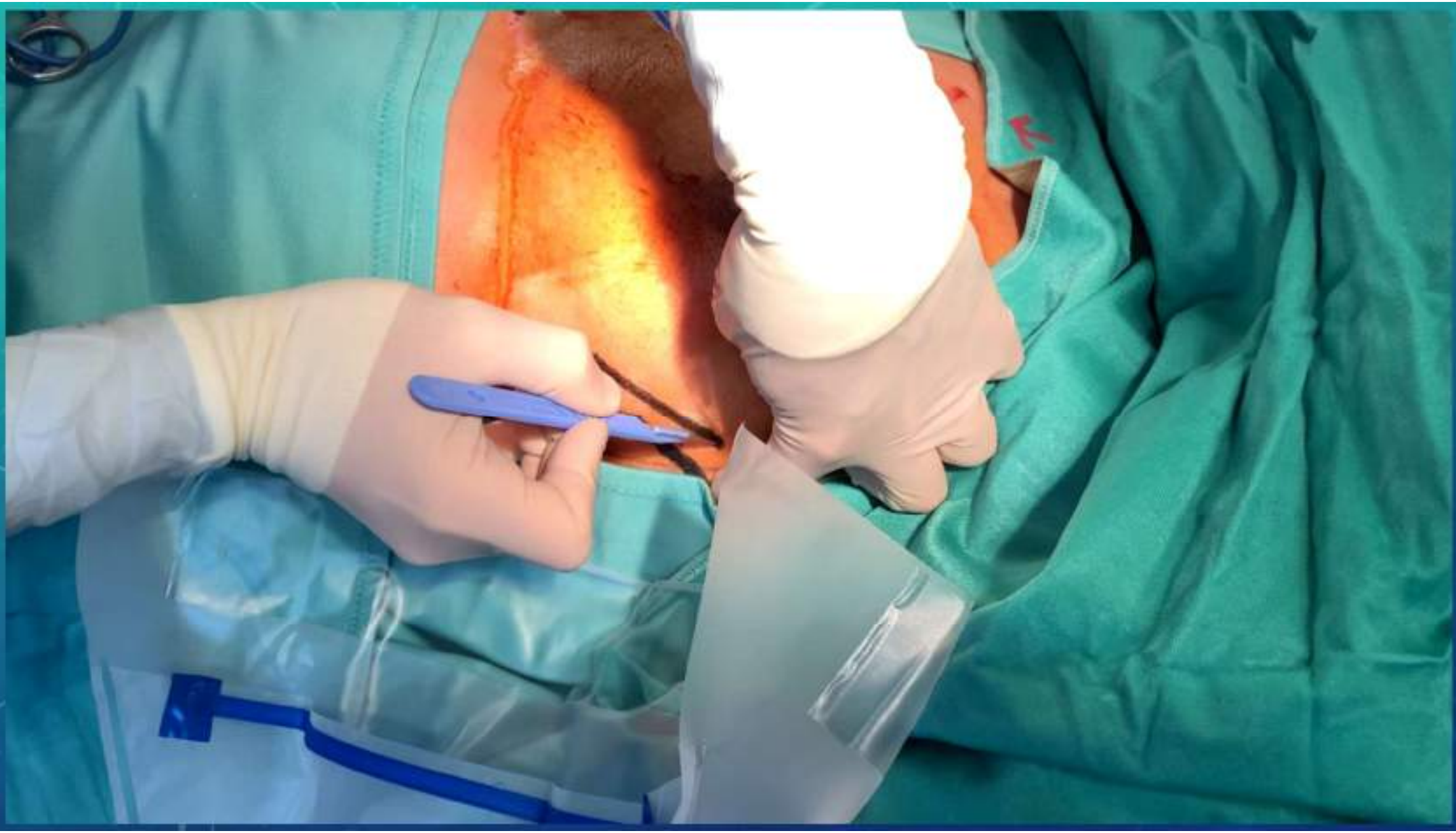
A Novel Nerve Block Technique for a Patient Undergoing Cardiac Device Implantation

Pavel Antiperovitch, MD, BMSc,[a] Ahmed T. Mokinar, MBBS,[a,b] Muhtasham Mian, MSc, MD,[a] Raymond Yee, BMD, ScMD,[a] Habib Rehman Khan, MBBS, PhD[c]

(A) The ultrasound probe is placed on the lateral aspect of the neck in the sagittal plane posterior to the sternocleidomastoid muscle. The vertical landmark is the crossing of the external jugular vein with the posterior border of the sternocleidomastoid muscle at approximately one-third of the neck height. (B) Same image with a labeled overlay. (C) Approach to delivering local anesthetic in the area of the SCN taking care to keep the needle tip above the prevertebral fascia to avoid anesthetizing the brachial plexus. SCN = suprascapular nerve.

SUMMARY

The SCN and PECS 1 nerve blocks can be used as a primary mode of anesthesia for patients undergoing pre-pectoral CIED implantation to minimize or eliminate the use of intravenous sedation and local anesthetic. Further studies are required to assess the feasibility, safety, and benefits of using this as a routine approach.

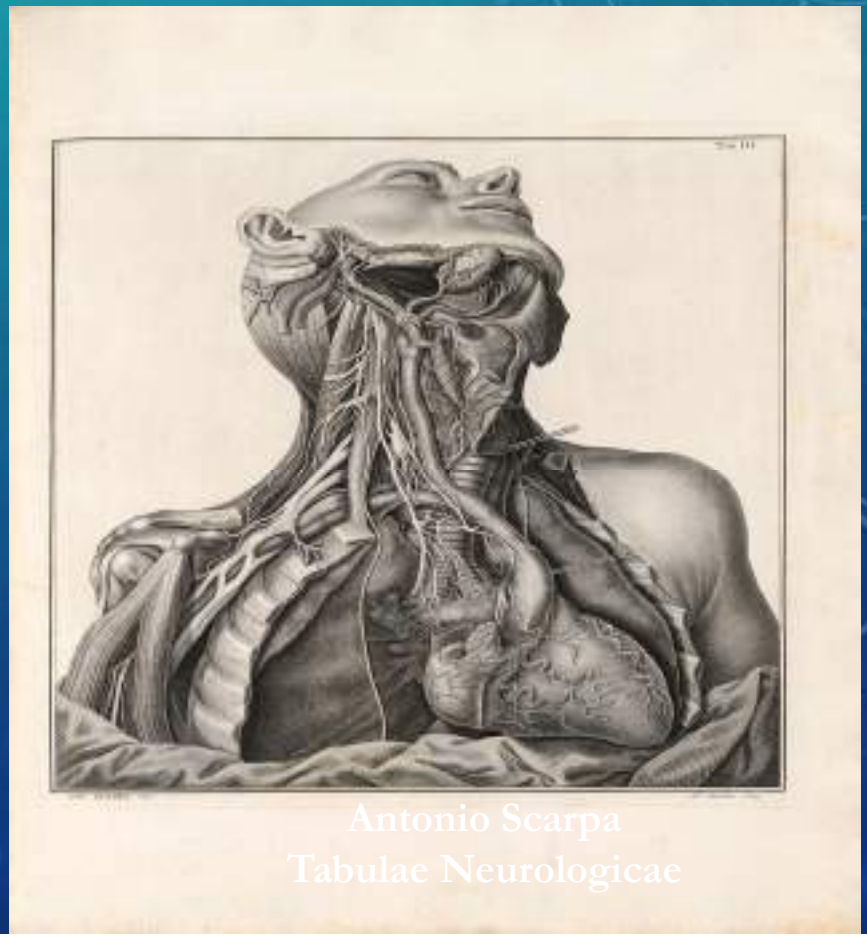


IL TRATTAMENTO DELLE ARITMIE VENTRICOLARI: IL FAILURE ABLATIVO

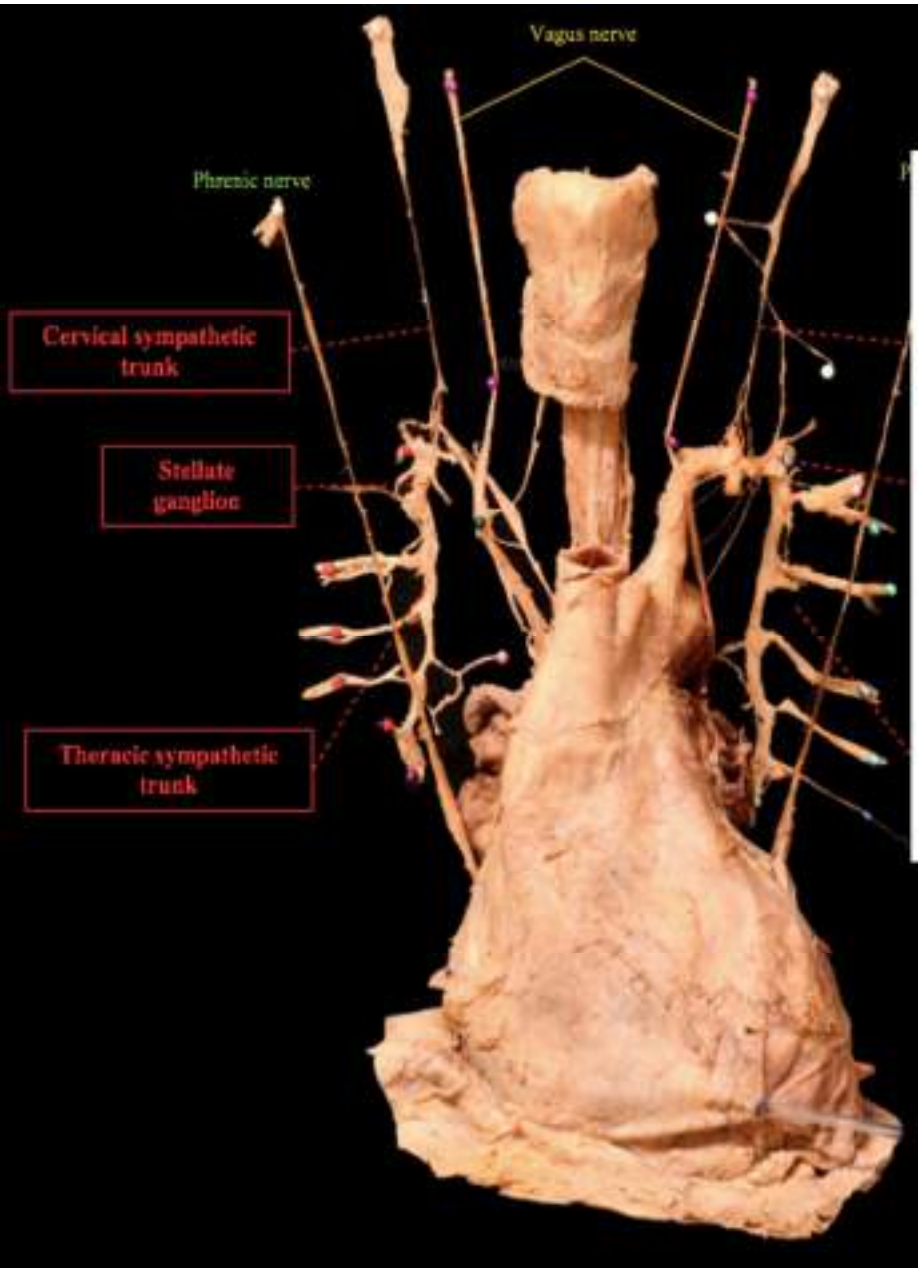
- Il trattamento della tachicardia ventricolare richiede un approccio multidisciplinare che prevede l'utilizzo di farmaci antiaritmici e l' ablazione transcatetere.
- Nonostante la tecnologia e le recenti conoscenze nell'ambito elettrofisiologico il tasso di insuccesso talvolta raggiunge ed oltrepassa il 30%.
- Questo elevato tasso di insuccesso può essere imputato a diversi fattori (anatomia, tecnologia, scarsa conoscenza della fisiopatologia).

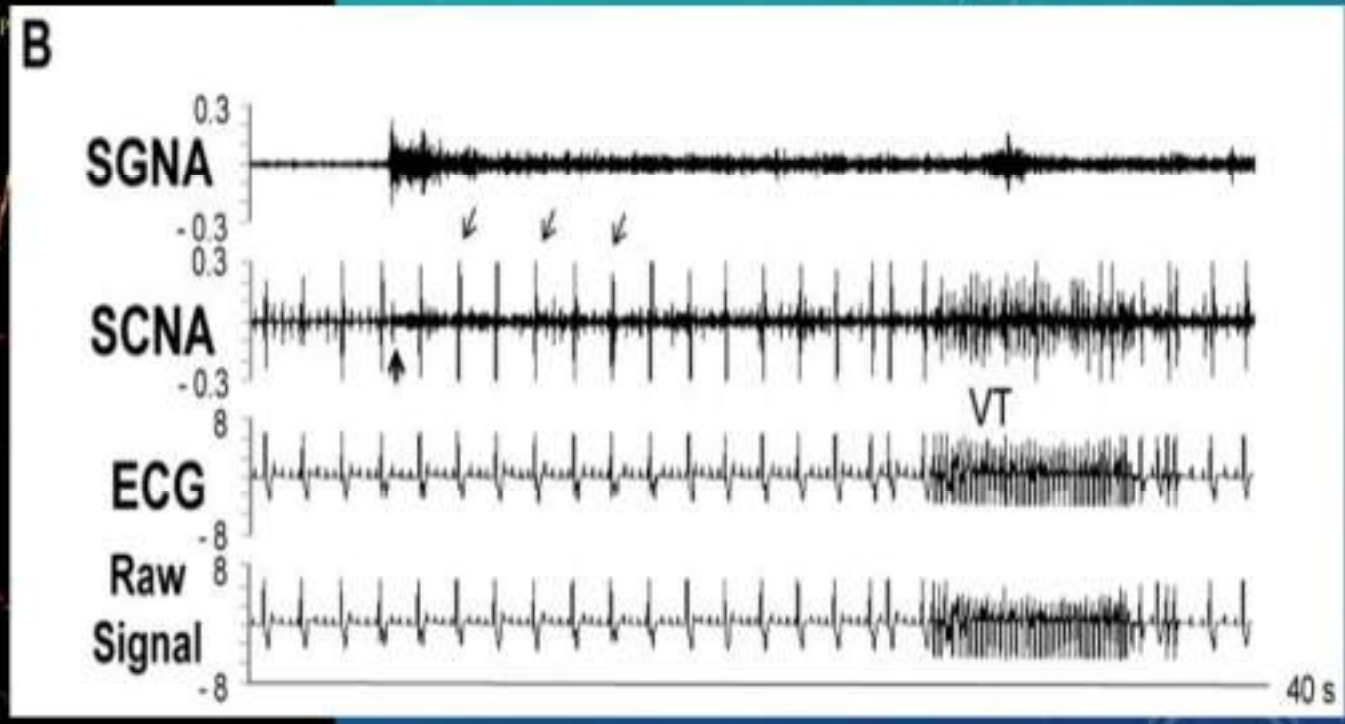
IL SISTEMA NERVOSO AUTONOMO E LE ARITMIE VENTRICOLARI

- Il sistema nervoso autonomico ha un' azione potente sul sistema cardiovascolare. La neuromodulazione in campo aritmico è un campo di ricerca florido, complesso e in fase crescente di sviluppo.
- Numerosi studi hanno dimostrato come la sua applicazione sia nell'ambito della fibrillazione atriale sia nel campo delle aritmie ventricolari complesse, riduca sostanzialmente il burden aritmico.

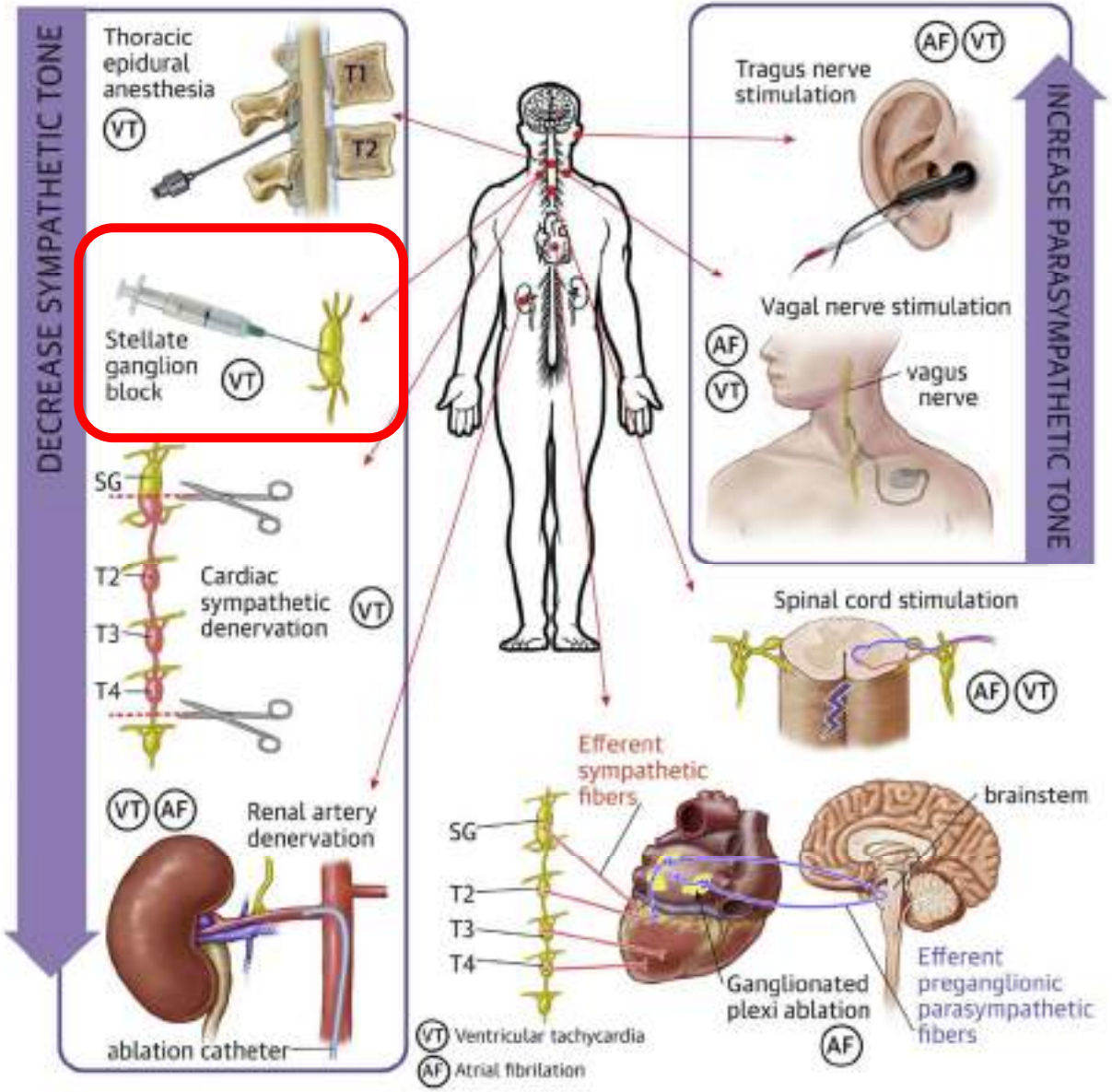


Antonio Scarpa
Tabulae Neurologicae





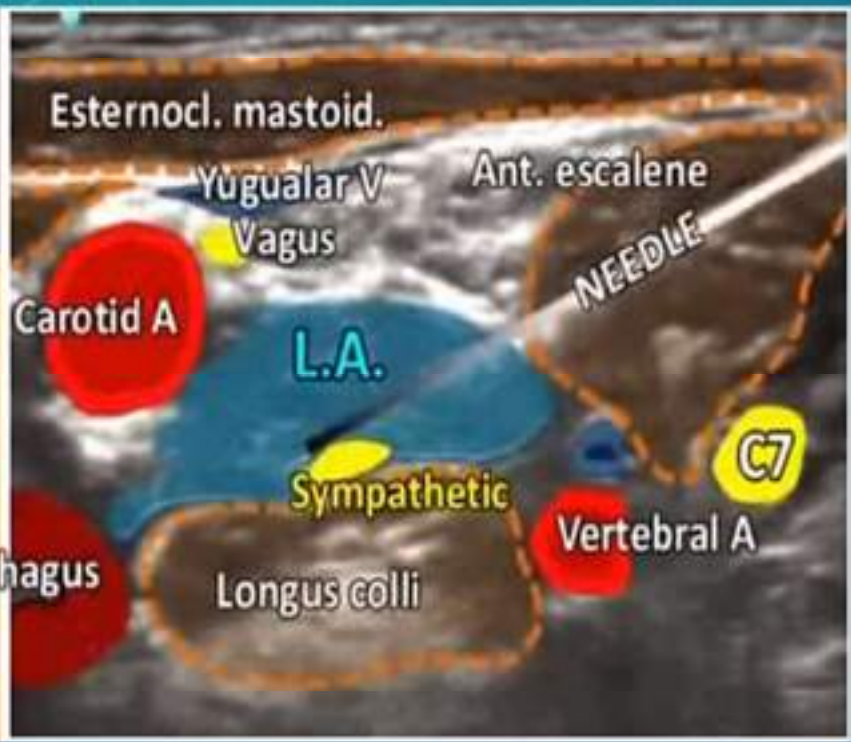
Heart Rhythm. 2015 Mar;12(3):612-620. doi: 10.1016/j.hrthm.2014.11.007.



Zhu, C. et al. J Am Coll Cardiol EP. 2019;5(8):881-96.

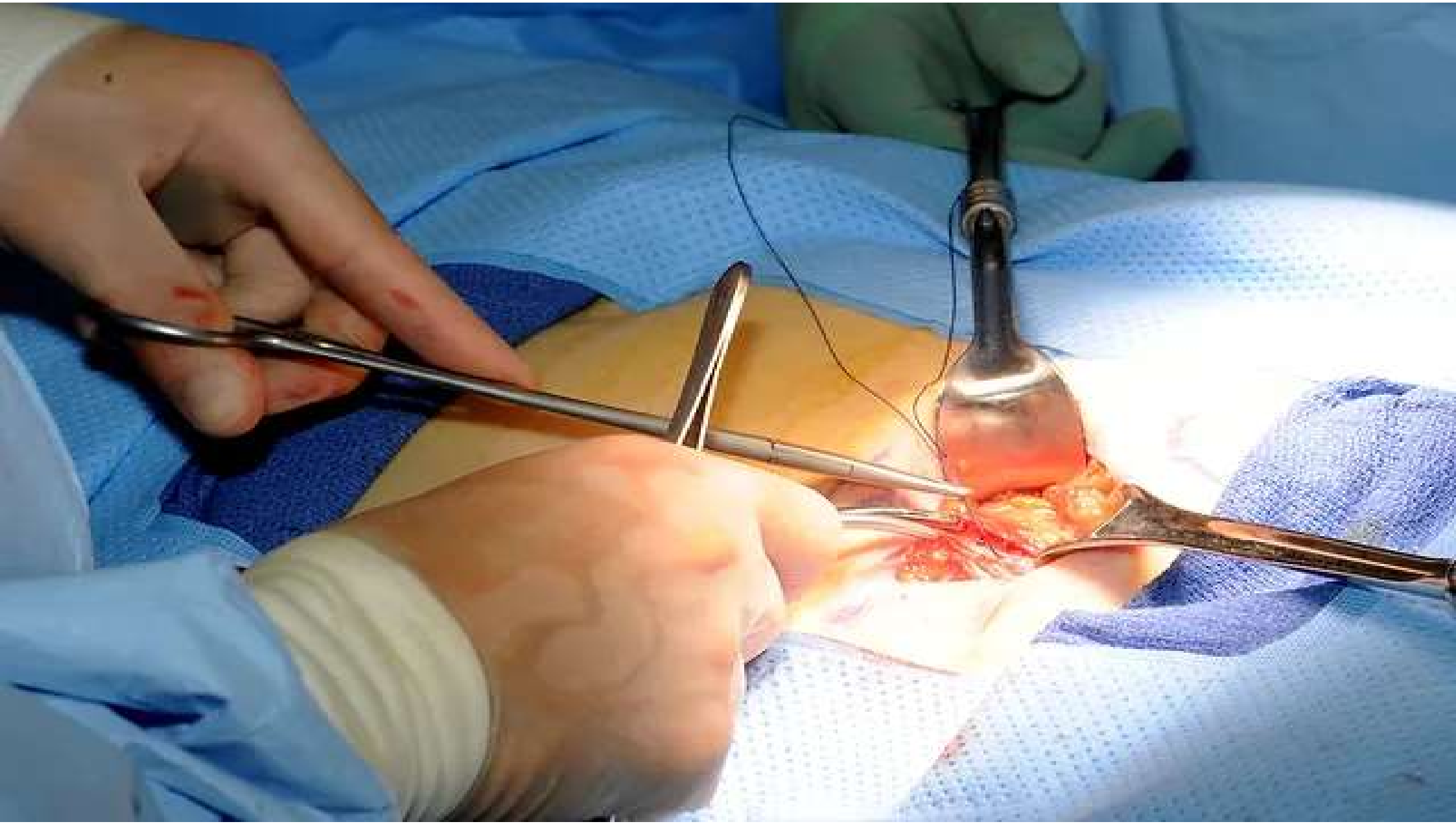
IIb

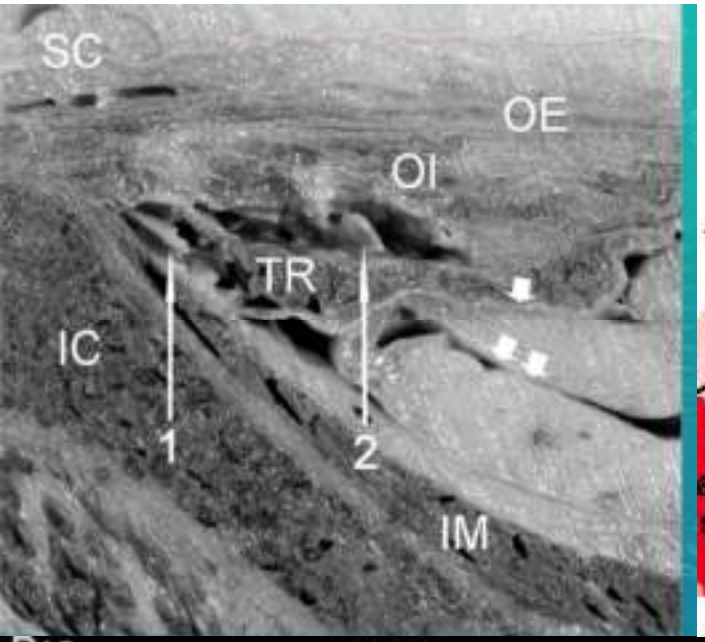
Zeppenfeld K, Guidelines EHJ 2022


Esternocl. mastoid.
Yugualar V
Vagus
Ant. escalene
NEEDLE
Carotid A
L.A.
C7
Sympathetic
Vertebral A
Esophagus
Longus colli

Pz di 81 anni, ricoverato per Scompenso Cardiaco (Bpn 1154, troponine negatuve) e Dispnea Ingravescente per sforzi lievi ed edemi declivi.
BPCO, IPB, Pregressa Polmonite (Tc torace Negativa).
2019 Per extrasistolia ventricolare eseguiva Holter ECG → NUMEROSI BEV anche in coppie, TVNS, **TVS con aspetto BBS**. **Impiantava ICD bicamerale.**
Agli ultimi controlli cardiologici 2023 veniva aumentata la sua tp con Cordarone.
Tp domiciliare (Lasix, Laventair, Lopresor, Cordarone).
Eco cardio: **cardiopatia dilatativa non ischemica (FE 30%),** studio aritmologico : **storm aritmico** per aritmie settali.
Da inviare presso altra struttura per eseguire RDT del setto .

Bridge solution → **blocco in continuo del ganglio stellato**. Prima somministrazione Ropivacaina 0,5% 8ml + Mepivacaina 2% 2ml.
Top –Up a 8 e 16 h (Ropivacaina 0,5% 10 ml).
Interruzione degli episodi. **Pz inviato ad eseguire la procedura di rdt dopo 20 h senza complicanze**.




SC
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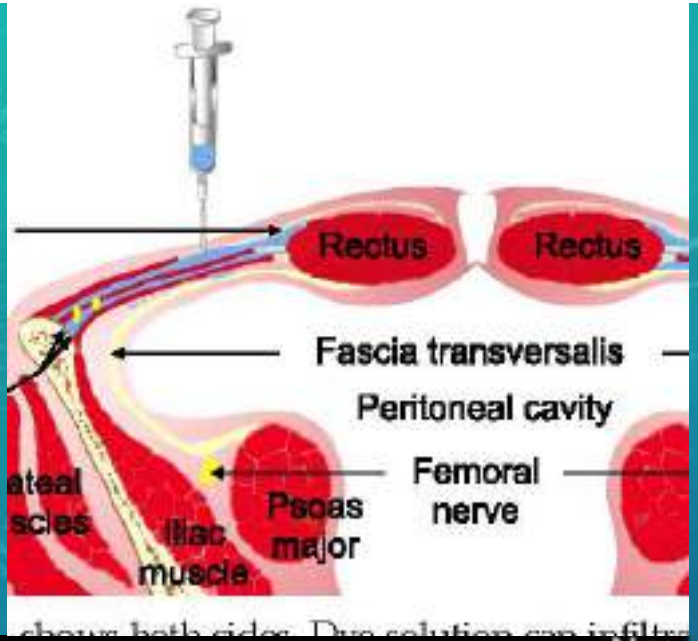
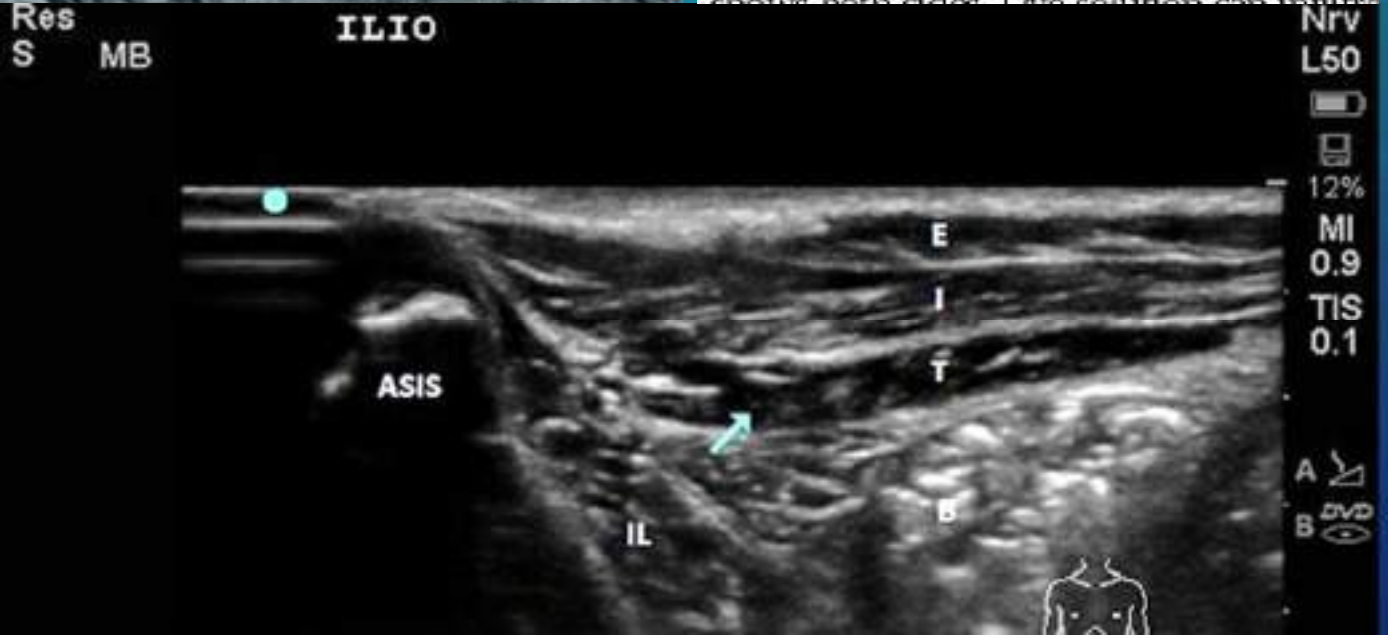
1
2
IM


Rectus
Rectus
Fascia transversalis
Peritoneal cavity
Femoral nerve
Psoas major
Iliac muscle


Res
S
MB
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Nrv
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MI
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TIS
0.1
E
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ASIS
IL
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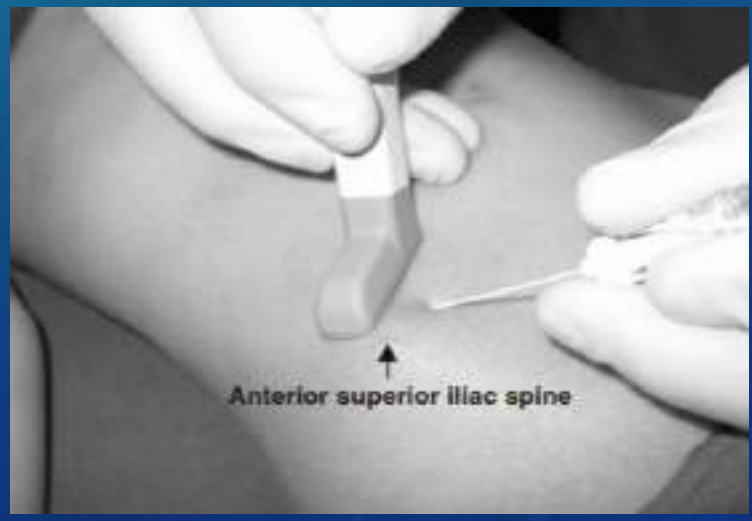
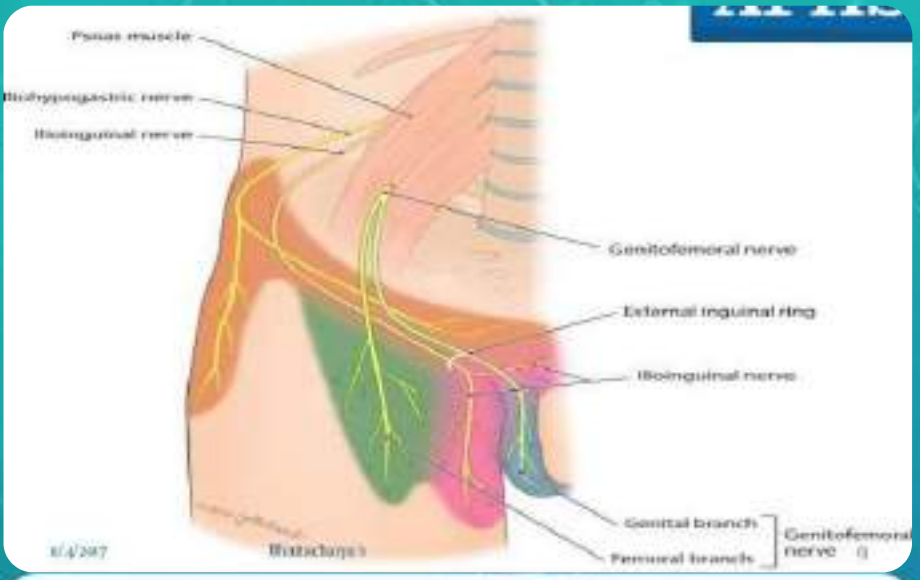
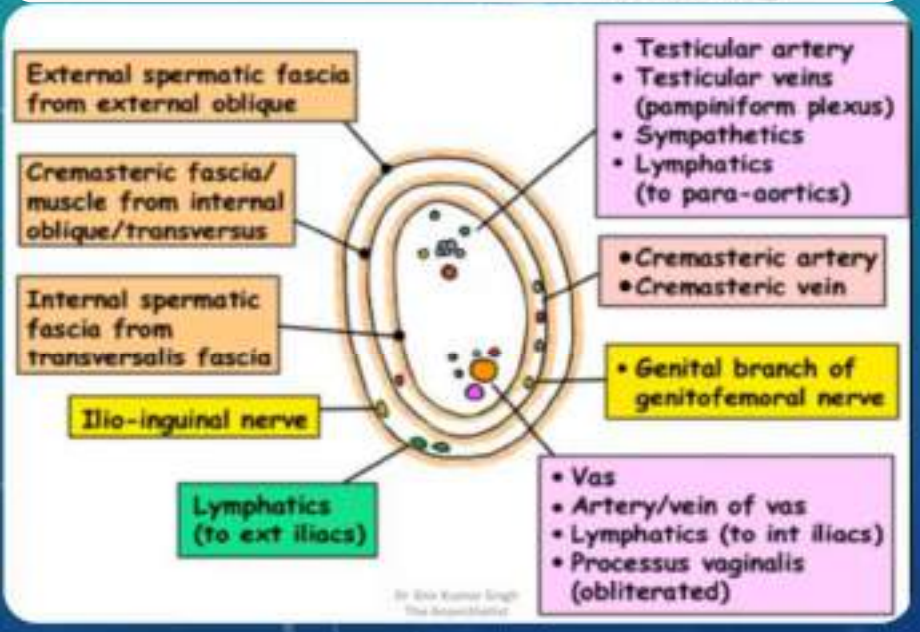
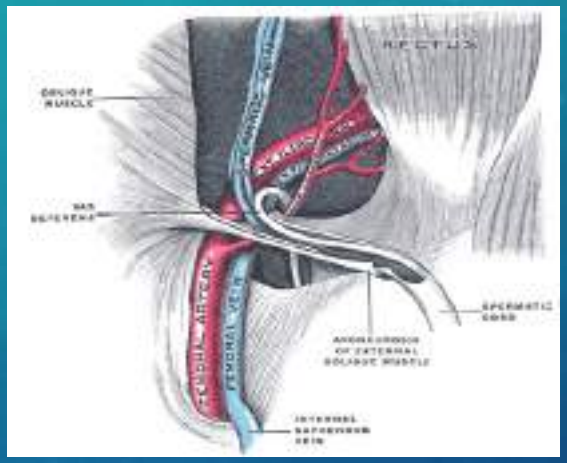
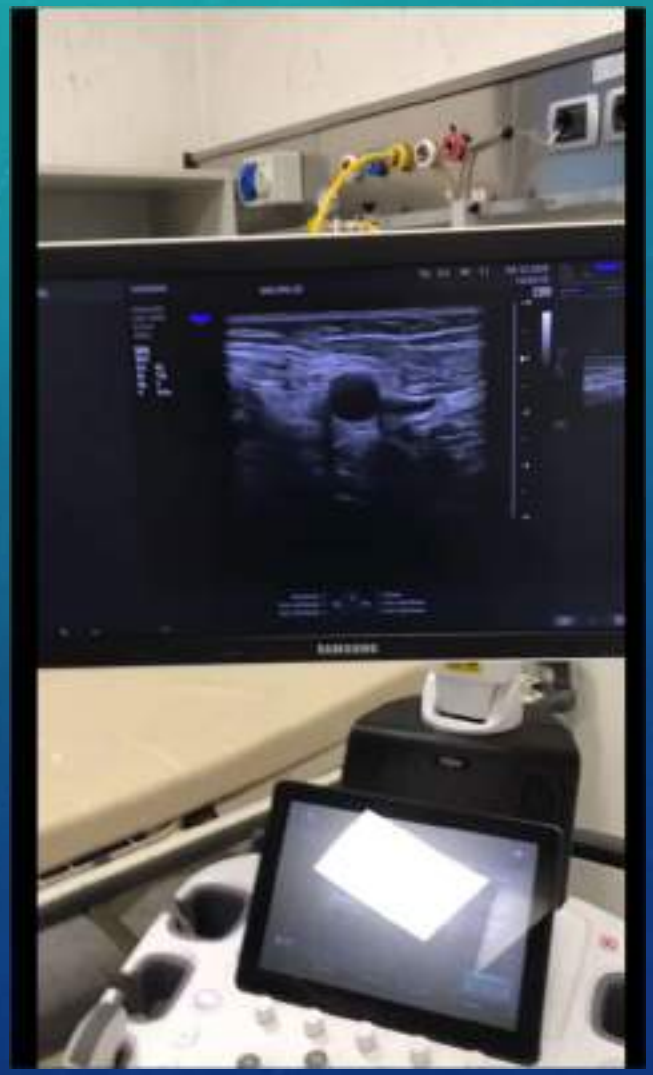
B
DVD


Anterior superior iliac spine


Psoas muscle
Genitofemoral nerve
External inguinal ring
Ilioinguinal nerve
Genital branch
Femoral branch
Genitofemoral nerve


External spermatic fascia from external oblique
Cremasteric fascia/ muscle from internal oblique/transversus
Internal spermatic fascia from transversalis fascia
Ilio-inguinal nerve
Lymphatics (to ext iliacs)
• Testicular artery
• Testicular veins (pampiniform plexus)
• Sympathetics
• Lymphatics (to para-aortics)
•Cremasteric artery
•Cremasteric vein
• Genital branch of genitofemoral nerve
• Vas
• Artery/vein of vas
• Lymphatics (to int iliacs)
• Processus vaginalis (obliterated)





Current Medical Science
DOI https://doi.org/10.1007/s11596-019-2107-2
39(5):794-799,2019

Evaluation of Ultrasound-guided Genitofemoral Nerve Block Combined with Ilioinguinal/iliohypogastric Nerve Block during Inguinal Hernia Repair in the Elderly*

Zhi HUANG[1], Wei XIA[2], Xiao-hong PENG[1], Jin-yuan KE[3]*, Wei WANG[3]*
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[2]*Department of Anesthesiology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China*
[3]*Department of Physiology, Basic Medicine School, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China*

Fig. 1 The probe position and ultrasound images in GFN block combined with II/IHN block
A: In II/IHN block, the probe is placed over the line joining the anterior superior iliac spine and umbilicus (indicated by a dash line). B: Ultrasound images show the three layers of the muscles and the fascial layer, with the II nerve (line arrow) closer to the iliac crest and IH nerve medial to the II (solid arrow head). Sometimes a third nerve appears but is much farther from the iliac crest, which is the 12th intercostal nerve (hollow arrow head). EO: external oblique muscle; IO: internal oblique muscle; TA: transversus abdominis muscle; AC: abdominal cavity; TAP: transversus abdominis plane; IC: iliac crest. C: In GFN block, the probe is placed in the upper medial thigh adjacent to the inguinal ligament. D: with color Doppler, the inguinal canal (surrounded with hollow arrow heads) can be viewed above the external iliac artery at the level where the vessel becomes into femoral artery. EIA: external iliac artery; FA: femoral artery

Table 2 Assessment of cutaneous sensory block (*n*)

Group	0	1	2	3
G (*n*=27)	0	0	3	24
I (*n*=27)	0	0	4	23

Values are expressed as numbers. 0 = normal sense; 1 = numbness to cold stimulus; 2 = numbness to pinprick stimulus; 3 = numbness to both cold and pinprick stimulus

Table 3 VAS scores at different time points during the surgery

Group	After skin incision	At spermatic cord/round ligament traction	At sac ligation
G (*n*=27)	1.5±0.8	2.0±1.0	1.9±0.7
I (*n*=27)	1.7±0.8	4.7±1.5	2.4±0.8
P	0.686	0.001	0.515

Values are expressed as mean±SD.

Table 4 Intraoperative requirement for additional analgesia and sedation [*n* (%)]

Group	Sufentanil	Butorphanol	Midazolam
G (*n*=27)	2 (7.4%)	2 (7.4%)	1 (3.7%)
I (*n*=27)	16 (59.3%)	10 (37.0%)	6 (22.2%)
P	0.001	0.007	0.015

Table 5 Ratings for analgesic effects of regional block (*n*)

Group	Good	Acceptable	Poor
G (*n*=29)	25	2	2
I (*n*=30)	8	19	3
P	0.017	0.001	–

Five patients with poor analgesic effect (2 in group G and 3 in group I) were not included in the statistical analyses of the present study, as they turned to general anesthesia to complete the surgery.

Table 6 Resting VAS scores after surgery

Group	*n*	2 h	6 h	12 h
G	27	2.0±0.6	1.9±0.7	3.1±0.6
I	27	2.1±0.6	2.0±0.5	3.1±0.9

Values are expressed as mean±SD.

Table 7 VAS scores induced by coughing after surgery

Group	*n*	2 h	6 h	12 h
G	27	2.3±0.7	2.3±0.7	3.3±0.7
I	27	4.1±1.2	4.6±1.1	5.3±1.1
P		0.025	0.021	0.002

Values are expressed as mean±SD.


SAMSUNG
ANESTESIA-RIANI...
II
TIs 0.16 MI 1.08
04-01-2020
09:27:59
MSK
LA3-14AD
4.0 cm
36 Hz
[2D]
Gen
Gn 56
ID 120
MI 7
P 90%
0
1
2
3
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Ambrosoli et al. J Anesth Analg Crit Care (2023) 3:40
https://doi.org/10.1186/s44158-023-00122-6

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Journal of Anesthesia, Analgesia and Critical Care

ORIGINAL ARTICLE Open Access

Safety and effectiveness of prilocaine for spinal anesthesia in day surgery setting: a retrospective study on a sample of 3291 patients

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Table 1 Patient's characteristics ($n = 3291$)

Variables	*N* or mean	% or SD
Age	49.6	24.2
Male sex	2042	62%
Surgical procedures		
Varicectomy/saphenectomy	937	28.4728%
Knee arthroscopy	882	276.8027%
Proctologic surgery	499	15.16%
Inguinal canal surgery	491	14.9115%
Removal of hardware for internal fixation	160	4.8655%
Cysts/lipomas removal	147	4.4655%
Plastic surgery	87	2.6433%
Foot surgery	51	1.5411%
Other orthopedic procedures	28	0.85%
Urologic surgery	9	0.327%

Table 2 Reasons for unplanned admission

Reasons for unplanned admission	*n*	%	95% *CI*
Surgical complications	11	0.33	0.2–0.6%
Other complications[a]	33	1%	0.7–1.4%
Anesthesia-related complications	15	0.46	0.3–0.8%
Urinary retention	8	0.24[b]	0.1–0.4%
Postoperative nausea-vomiting	3	0.09[b]	0.03–0.3%
Persistence of the block	5	0.15[b]	0.06–0.4%

[a] Uncontrolled pain, fever, allergic reaction, high blood pressure, hyperglycemia, arrhythmia

[b] % calculated with respect to all admissions

Table 3 Complications

Complications	*n*	%	95% *CI*
Urinary retention	36	1.09	0.78–1.51%
Hemodynamic complications	34	1.03	0.73–1.44%
Surgical complications	26	0.79	0.05–1.1%
Postoperative nausea-vomiting	11	0.33	0.18–0.60%
Persistence of the block	7	0.21	0.10–0.44%
Headache	2	0.06	0.00–0.24%
Allergic reactions	2	0.06	0.00–0.02%
Fever	2	0.06	0.00–0.02%
Transient neurological symptoms	1	0.03	0.00–0.21%

Conclusion

Given the number of ever-increasing surgical procedures that are performed in day surgery, the use of anesthetic drugs that allow a rapid functional recovery is essential in order to be able to discharge the patient safely and reduce the incidence of complications and consequently the need for hospitalization and related costs. Subarachnoid blockade is a safe method, although there are conflicting opinions on the best type of anesthetic and dosage. In this paper, we report our experience on the use in day surgery of hyperbaric prilocaine 2%. In our experience, the drug has demonstrated a valid anesthetic efficacy with 40 mg, and the number of complications related to the method was low as well as the need for hospitalization. We believe that this drug is valid and safe for the most performed outpatient and day surgery procedures; however, randomized clinical trials are needed which confirm our results and which exclude the incidence of complications in the days following the procedure.

Guidelines

Guidelines for day-case surgery 2019

Guidelines from the Association of Anaesthetists and the British Association of Day Surgery

C. R. Bailey,[1] M. Ahuja,[2] K. Bartholomew,[3] S. Bew,[4] L. Forbes,[5] A. Lipp,[6] J. Montgomery,[7] K. Russon,[8] O. Potparic[9] and M. Stocker[10]

RECUPERO POST-OPERATORIO

1°Fase (PACU stay)

Dura fino a quando il paziente è sveglio, i riflessi protettivi delle vie aeree sono tornati e il dolore è controllato.

Questa fase dovrebbe essere svolta in un'area di recupero dotata di strutture e personale adeguati (Gestione delle complicaze postop)

Bypass 1° fase per pazienti selezionati

Outcome preso spesso in considerazione in letteratura

2° Fase

Inizia quando il paziente scende dalla barella e termina quando il paziente è pronto per la dimissione dall'ospedale.

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DIMISSIONE

Al momento della dimissione, tutti i pazienti devono ricevere istruzioni verbali e scritte ed essere avvertiti di eventuali sintomi che potrebbero manifestarsi. Se possibile, queste istruzioni devono essere fornite in presenza della persona responsabile che accompagnerà il paziente a casa e che si occupera della persona nelle successive 24h postop.

Non bere alcolici, non usare macchinari e non guidare per 24 ore dopo l'anestesia generale o la sedazione.

È importante trovarsi entro 1 ora dai servizi medici di emergenza e ridurre al minimo il dolore

REVIEW

Is there a place for regional anesthesia in nonoperating room anesthesia?

Annibal Faddoul and Francis Bonnet