



NEWSLETTER

PAKISTAN SOCIETY OF ANAESTHESIOLOGISTS KARACHI - CHAPTER

Volume: 21
Issue 01, October 2019

Pakistan Society of Anaesthesiologists Karachi - 2019-2020

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EDITOR'S NOTE

Dear Colleagues; October issue of Anesthesia newsletter is in your hands with an improved format, font size increased, number of pages increased and news about fraternity activities also added. This issue is dedicated to regional anesthesia. We thought that as this modality of anesthesia/analgesia is upcoming and use of ultrasonography makes it very effective and precise even in very high risk cases. We are far behind in this modality of anesthesia/analgesia in Pakistan. We tried to include topics related to USG procedures to update the knowledge and to induce an urge to learn this technique. Hope everyone will be benefitted from this. Your valuable suggestions are always welcome.

Prof. Zahid Akhtar Rao
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PSA KARACHI NEWS

Revival of PSA Karachi Newsletter: The decision to revive the PSA Karachi Newsletter which had been abandoned in April 2015 was taken in the monthly meeting of PSA Karachi which is held regularly. Prof. Zahid Akhtar Rao was elected as the Editor for this quarterly newsletter and in July 2019, we successfully launched our first newsletter under the current cabinet with the theme of "Obstetric Anaesthesia".

Annual Iftar Dinner: It is a tradition of PSA Karachi to hold an iftar dinner every year during the month of Ramzan as a goodwill gesture. Senior life members of PSA who left no stone unturned to look after this organization, pharmaceutical personnel along with PSA executive committee members are invited. This year it was organized on May 21, 2019 at the DHA Club, Karachi.

PSA Research Ethical Committee: PSA Research Ethical Committee was formed by an executive committee decision in its monthly meeting held in May, 2019. The committee will be lead by Prof. Fauzia Anis Khan, other members will be Prof. Naveed Masood, Prof. Sadqa Aftab, Prof. Safia Zafar Siddiqui, Dr. M. Amim Anwar and Dr. Syed Hamid Ali.

World Sepsis Day: Pakistan Society of Critical Care Medicine in collaboration with PSA Karachi organized the World Sepsis Day on September 13, 2019 at the Karachi Marriott Hotel. Distinguished speakers from all over Pakistan participated and emphasized the importance of prevention, diagnosis and management of Sepsis. Dr. Madiha Hashmi immediate past president of PSCCM narrated the efforts made by her for PSCCM to achieve global recognition on the International Sepsis forums.

Health Asia Symposium: PSA Karachi participated in the 17th Health Asia International Exhibition & Conference and organized a symposium on "Safe Anaesthesia in Obstetric Emergencies". The symposium was held on September 24, 2019 at the Expo Centre Karachi.

Pre – SAARCAA Workshops: Different institutions of Karachi organized Pre – SAARCAA workshops in collaboration with PSA Karachi. Earlier Ziauddin University Hospital Clifton Campus organized Pre-SAARCAA Workshop on "Cadaveric USG Peripheral Nerve Blocks on March 03, 2019. After announcement of new dates of SAARCAA first such workshop which was very well attended, was organized by Department of Anesthesia, The Indus Hospital Karachi on October 2, 2019 on "Ultrasound guided Truncal Blocks". Later Liaquat National Hospital and Dr. Ruth KM Pfau Civil Hospital Karachi also organized workshops on Ultrasound guided regional blocks & Lower limb peripheral nerve blocks respectively on 6th, 7th and 8th October 2019



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UPCOMING CONFERENCES / MEETINGS / SYMPOSIA

SAARC-AA 2019 Congress

October 10 - 13, 2019
Lahore, Pakistan

XXIII National Congress of Anesthesiology, Panamanian Society of Anesthesiology (SPARA)

November 8 - 10, 2019
Panama

51st Annual Convention of the Philippine Society of Anesthesiologists (PSA) and the International Symposium for Ultrasound in Regional Anesthesia Congress (ISURA)

November 17 - 19, 2019
Manila

International Congress of Obstetric Anaesthesia

November 21 - 24, 2019
Cape Town, South Africa

CRITICON Critical Care Medicine Congress

December 7 - 8, 2019
Karachi, Pakistan

PSA Karachi (Head Office PSA Centre)

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REGIONAL ANESTHESIA AND ANTICOAGULANT UPDATE

Regional Anesthesia provides potent analgesia, reduces stress response and avoids development of chronic pain and opioid related side effects. The final decision to perform regional anesthesia in patients receiving drugs that effect hemostasis is after assessment of individual's risk and benefit. If it is judged that administration of anticoagulant must not be interrupted then alternative anesthesia technique should be used.

Peripheral nerve blocks

Peripheral nerve blocks cause less serious complications and are devoid of the risk of spinal and epidural hematoma. Peripheral nerve blocks have been divided into two groups according to their bleeding risk. **Superficial peripheral nerve blocks** are not contra-indicated in the presence of anti-haemostatic agents if there is a normal bleeding history.

Deep peripheral nerve blocks (close to vessels that cannot be compressed such as infraclavicular nerve block and lumbar sympathetic blockade) Time intervals established for neuraxial blockade should be followed.

Patients on anticoagulant

Preoperative

Discontinue warfarin at least 5 days before elective procedure

Assess INR 1-2 days prior to surgery, if >1.5, consider 1-2 mg oral Vitamin K

Reversal for urgent surgery/procedure, consider 2.5-5 mg oral or I/V vitamin K; for immediate reversal, consider FFP.

Patients at high risk of thromboembolism

> Bridge with therapeutic SC LMWH (preferred) or IV UFH

> Intravenous heparin discontinued 4-6 h before surgery

Patients on antiplatelet

Patients with coronary stents

Elective surgery postponed for the following durations if patient on Aspirin and Thienopyridine (eg, Clopidogrel or Prasugrel)

> Bare metal stents: 6 weeks

> Drug-eluting stents: 6 months

If surgery cannot be postponed, continue dual antiplatelet therapy throughout perioperative period, avoid neuraxial block.

Patients at high risk of cardiac event (exclusive of coronary stents)

Continue Aspirin throughout the perioperative period

Discontinue Clopidogrel/Prasugrel 5 d prior to surgery

Resume Thienopyridine 24 h postoperatively, Patients at low risk of cardiac events

Discontinue dual antiplatelet therapy 7-10 d prior to surgery

Resume antiplatelet therapy 24 h postoperatively

Patients on Heparin

A. Unfractionated Heparin

The risk of haemorrhage after epidural anaesthesia and subsequent intra-operative heparinization is not increased if heparinization is delayed for 1 h after spinal or epidural puncture. Removal of epidural catheters should be not be carried out until at least 4 h after the end of heparin administration with normalization of coagulation parameters (aPTT, ACT).

If a bloody puncture occurs in patients in whom intra-operative heparinization is planned, it is recommended that low-dose anticoagulation should be avoided for 1-2 hours.

B- Low-molecular-weight heparins (LMWH)

Since it is known that anti-thrombotic drugs increase the risk of spinal epidural haematomas after neuraxial blockade, a postoperative start may be advantageous.

To avoid bleeding complications, there should be a time interval of at least 12 h between subcutaneous administration of LMWH in prophylactic dosages and the placement or removal of an epidural catheter at a therapeutic dosage, catheter placement or removal should be delayed for at least 24 h after the last administration. In cases at high risk of thrombo-embolism or example, mitral or double mechanical valve replacement) one should refrain from neuraxial blockade and continue the administration of LMWH.

Following spinal or epidural puncture, or after removal of a spinal or epidural catheter, repeat administration of LMWH should be delayed for at least 2-4 h.

Fibrinolytic or Thrombolytic Therapy

According to the recent recommendation neuraxial blocks should be avoided if patient has received fibrinolytic or thrombolytic medicines.

References:

1. Regional Anaesthesia and Medicine. Vol. 43, No. 3, April, 2018.
2. Regional Anaesthesia and Patients with Abnormalities of Coagulation, Royal College of Anaesthesia 2013.

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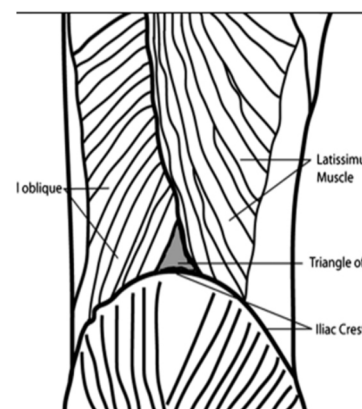
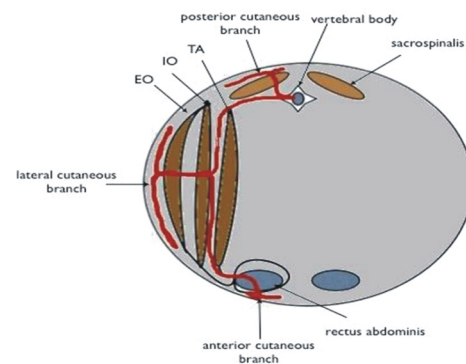
TRANSVERSUS ABDOMINIS PLANE BLOCK

Transversus abdominis plane (TAP) block is used as a part of multimodal analgesia in patients undergoing abdominal surgery. It was first reported in literature in 2001 and since then numerous trials have shown it to be effective in provision of post-operative analgesia and reduction of postoperative opioid consumption.

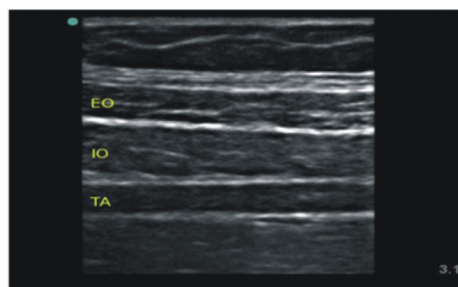
The technique of TAP block involves injection of local anesthetic (LA) solution in the plane between internal oblique (IO) and transversus abdominis (TA) muscle, containing nerves originating from T6 to L1 spinal nerve roots which supply sensation to antero-lateral abdominal wall. It provides parietal pain relief by blocking pain sensation to skin, subcutaneous tissue, muscles and parietal peritoneum. Therefore it is used a part of multimodal analgesia and not a sole analgesic modality for abdominal surgeries.

TAP block can be performed by landmark techniques using “Triangle of petit”, which is formed by iliac crest inferiorly, external oblique muscle anteriorly and latissimus dorsi posteriorly.

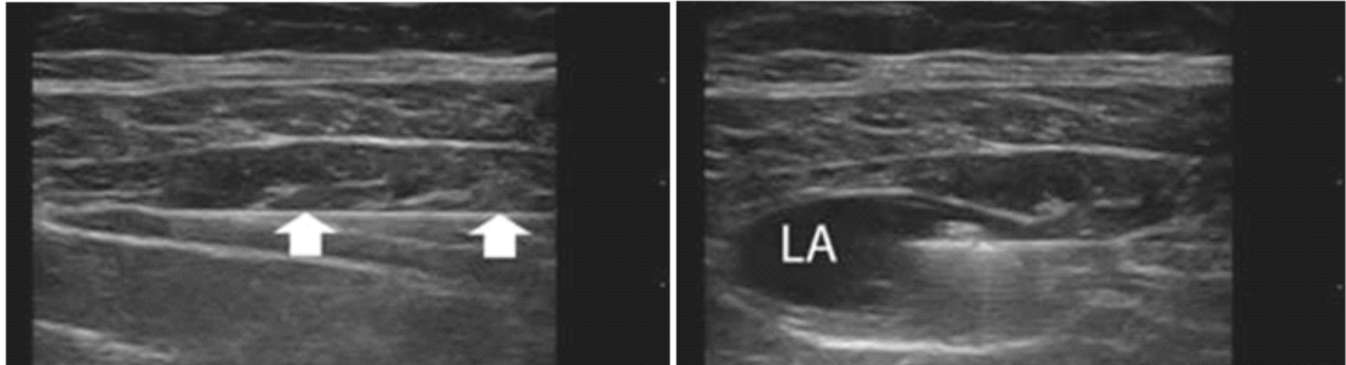
However success in terms of effective pain control is less with landmark technique. Therefore it is advisable to perform the block under ultrasound (US) guidance as it increases the safety and success rate (1). A 38 mm linear array US probe (13-6 MHz) is positioned in the mid-axillary line in the axial plane half-way between the iliac crest and the costal margin.



Views are considered satisfactory, if subcutaneous fat, external oblique muscle, internal oblique muscle, transversus abdominis muscle, peritoneum, and intra-peritoneal structures are identified.



A 100-150 mm long, 20 G short-bevel needle is introduced anteriorly and inserted in plane under real-time US guidance to lie between the internal oblique and the transversus abdominis muscles with the tip in the mid-axillary line. After negative aspiration, one ml test injection of saline is given to confirm needle location. A total of 20 ml of local anaesthetic (LA) (0.25% bupivacaine or Ropivacain) can be used in an adult patient and is injected on each side after aspiration to avoid intravascular placement. If the surgical incision is on one side for e.g. unilateral hernia, TAP block should be performed unilaterally on that side. Successful injection produced will be confirmed by an echo lucent lens-shaped space in the sheath between the two muscles. Surgical incision can be given after 20 minutes of TAP block.



Meta-analysis reported that TAP block effectively reduces pain scores and 24 hour morphine consumption after gynecological surgery, appendectomy, inguinal surgery, bariatric surgery, and urological surgery (2). Another meta-analysis reported that time to request first analgesia is significantly longer in patients who have received TAP block. It is a safe procedure and provides equivalent or improved patient satisfaction levels as compared to other analgesia techniques (3).

It is advisable to perform 25 of these blocks under supervision before doing it independently. Since it is simple, easier to perform with low complication rate, it should be considered as a part of multimodal regime after abdominal surgeries.

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1. McDermott G, Korba E, Mata U, Jaigirdar M, Narayanan N, Boylan J, Conlon N. Should we stop doing blind transversus abdominis plane blocks? *Br J Anaesth.* 2012 Jan 11; 108(3):499-502.
2. Brogi E, Kazan R, Cyr S, Giunta F, Hemmerling TM. Transversus abdominal plane block for postoperative analgesia: a systematic review and meta-analysis of randomized-controlled trials. *Can J Anaesth.* 2016 Oct 1; 63(10):1184-96.
3. Ma N, Duncan JK, Scarfe AJ, Schuhmann S, Cameron AL. Clinical safety and effectiveness of transversus abdominis plane (TAP) block in post-operative analgesia: a systematic review and meta-analysis. *J Anesth.* 2017 Jun 1; 31(3):432-52.

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ULTRASOUND GUIDED ERECTOR SPINAE BLOCK

1. Introduction

The Erector Spinae Plane (ESP) block was described in 2016 as a novel regional anesthetic technique for acute and chronic thoracic pain. It is a Paraspinal Fascial Plane Block. Injection of local anesthetic in the plane deep to the erector spinae muscles and superficial to the transverse processes, to achieve a craniocaudal distribution along several vertebral levels. It is an alternate to thoracic epidural, thoracic paravertebral, and intercostal blocks.

May be performed in awake patients preoperatively or after induction of general anaesthesia either preoperatively or postoperatively.

The "Erector Spinae" comprises of a group of muscles including the iliocostalis, longissimus, and spinalis muscles. They run bilaterally from the skull to the pelvis and sacral region, and from the spinous to the transverse processes, extending to the ribs



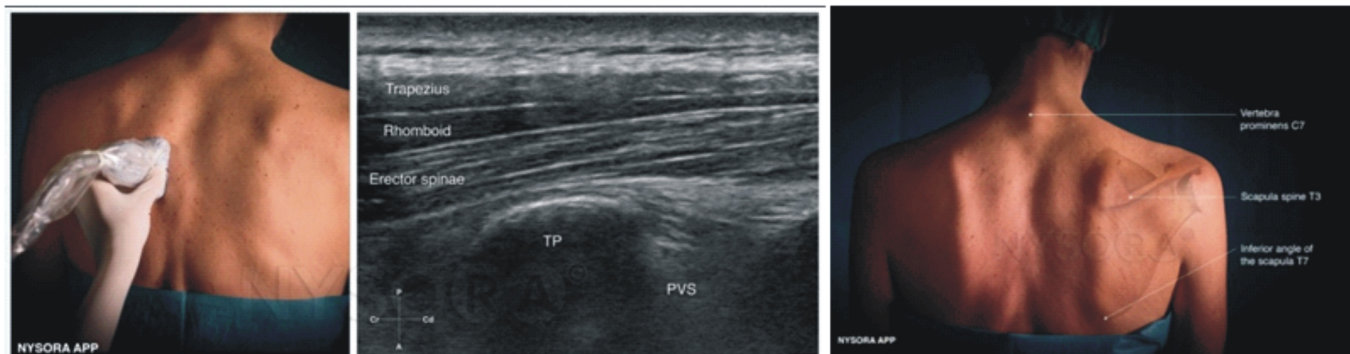
Ventral and dorsal rami, and their relationship with the erector spinae muscles and Cross-section of a thoracic vertebra with spinal nerve

2. Procedure

I. Position of the patient.

Block may be performed in more than one position

- o Sitting
- o Lateral decubitus
- o Prone



II. Scanning Technique:

- o A high-frequency linear transducer can be used for thoracic levels, whereas a low-frequency curved array transducer may be better suited for lumbar injections or obese patients, where the erector spinae layers are deeper (greater depth than 4cm).
- o After patients are positioned optimally (sitting or lateral decubitus), the affected area is identified along with the target transverse process
- o Given that local anesthetic spreads cranially and caudally from the point of injection, this is usually the transverse process most central to the affected rib levels.
- o After all aseptic precautions, the ultrasound transducer is placed in a longitudinal parasagittal orientation, about 3 cm lateral to the spinous processes, allowing for visualization of adjacent transverse processes
- o These are recognizable as flat, squared-off acoustic shadows with only a very faint image of the pleura visible (Figure 2)

III. Performance of Block:

After correct Transverse Process identification

- o An 18-gauge echogenic needle is inserted
- o Using an **in-plane** cranial-to-caudad approach
- o Contact the bony shadow of the TP with the tip deep to the fascial plane of the erector spinae muscle
- o The correct location of the needle tip is confirmed by injecting 0.5-1 cc of normal saline 0.9% (Hydro-dissection) and observing linear fluid spread lifting the erector spinae muscle off the tip of the TP
- o Complete the block with 20-30 mL of local anesthetic.
- o If the transducer is too lateral, the ribs will be visualized instead; these are recognizable as rounded acoustic shadows with an intervening hyperechoic pleural line.
- o If the transducer is too medial, the thoracic laminae (flat hyperechoic lines) will be visualized. If the transducer is placed too medial, the thoracic laminae will be visualized as flat hyperechoic lines. To fix: Slowly slide the transducer laterally

IV. Catheter placement:

- o Once the fascial plane is recognized, the needle is removed and the catheter is inserted through the needle sheath.
- o Correct catheter location is confirmed by bolusing 2-3 cc of normal saline 0.9%. Following confirmation of correct catheter tip location, 20 cc of bupivacain 0.25% is injected and cranial and caudal spread of local anesthetic can be visualized
- o For a continuous technique, First, inject 5 ml of local anesthetic to create a space in which the catheter can then be advanced.
- o Bupivacain 0.25% at 8-10 ml/h with Patient Controlled Regional Analgesia (PCRA) boluses of 8 ml every 60 minutes.



A. Transducer is placed too medial. Figure B. Adequate transducer position for an ESPB. Figure C. Transducer placed too lateral. ESP, erector spinae; TP, transverse process; PVS, paravertebral space. Cr, cranial, Cd, caudad; A, anterior; P, posterior.

V. Drugs & Dosage

NYSORA® LOCAL ANESTHETIC CHOICE FOR ESP BLOCK			
SINGLE SHOT	Local anesthetics	Concentration	Volume
		Ropivacaine Bupivacaine	0.375% 0.25%
CONTINUOUS CATHETER INFUSION	Ropivacaine Bupivacaine	0.2%	Infusion regimen
			Infusion: 8-10 mL/h (PCRA) Bolus: 5 mL Lockout interval: 60 min

Uses:

- First-line intervention in patients with multiple rib fractures for effective analgesia and to prevent respiratory complications
- Shoulder arthroscopy
- Thoracotomy
- Open cholecystectomy
- Nephrectomy
- Inguinal hernia surgery
- Pyeloplasty
- Femur surgeries
- Mastectomy
- Total gastrectomy
- Laparoscopic cholecystectomy
- Laparoscopic hysterectomy
- C. Section
- Total hip replacement
- Sternotomy

References:

1. NYSORA/courses/erector-spinae-plane-block
2. Erector spinae plane block for postoperative analgesia in laparoscopic cholecystectomy: a case report/Dove Medical Press/ Pages 19831990, 24 September 2018 Volume 2018:11

Dr. Muhammad Riaz

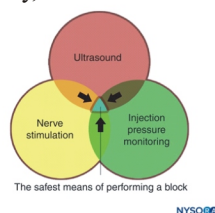
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NYSORA GUIDELINES FOR REGIONAL TECHNIQUES

Introduction:

The practice of peripheral nerve blocks traditionally relied on subjective end points to gauge the potential risk to the patient. For example, instead of relying on feeling “clicks,” “pops,” and “scratches” to identify needle-tip position, practitioners can now monitor the interaction at the needle fascial layers using ultrasonography. Recent advances in monitoring therefore may reduce the three most feared complications of peripheral nerve blockade: nerve injury, local anesthetic toxicity, and inadvertent damage to adjacent structures (“needle misadventure”).

Available Means for Monitoring Needle-Nerve Relationships



Ultrasound:

The use of ultrasound guidance during peripheral nerve blocks has significantly decreased the risk of severe systemic toxicity of local anesthetics due to reduced volume and dose of local anesthetic to accomplish most nerve block procedures. In addition, observation of the needle path on ultrasound, avoidance of intravascular placement, and confirmation of the spread of local anesthetic in the tissues all add to greater safety.

Nerve Stimulation

Neurostimulation largely replaced paresthesia as the primary means of nerve localization in the 1980s. However, its utility as a method of precisely locating nerves has been recently challenged by data of several studies that demonstrated that evoked motor response (EMR) may be absent despite intimate needle-nerve contact as confirmed by ultrasonography.

This, however, does not mean that electrical stimulation of peripheral nerves is obsolete in an era of ultrasound guidance.



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Injection Pressure Monitoring

Data suggest that when the pressure in the system approaches 15 psi without the ability to commence flow of injectate, this high opening injection pressure may signal a dangerous needle-nerve relationship or needle placement in wrong tissue plane. Therefore, the injection should be halted and needle position should be reevaluated.

The use of neurostimulation, ultrasonography, and injection pressure monitoring together provides a complementary package of objective data that can guide clinicians to perform the safest blocks possible.

Documentation

Documentation of nerve block procedures has, lagged behind the documentation of general anesthesia, and it is often relegated to a few scribbled lines in the corner of the anesthetic record. Documentation should be simple but detailed.

Informed Consent

Be brief. A simple, short explanation helps recall of the risks and benefits more than lengthy paragraphs.

Include not only serious and major risks but also benefits and expected results of the proposed regional anesthetic procedure. It is difficult for patients to make an informed choice if only risks are discussed.

Use the consent process as a means to educate the patient simultaneously.

Offer a copy of the form to the patient. This has been shown to aid in recall of consent-related information.

1. Monitoring, Documentation, and Consent for Regional Anesthesia Procedures - NYSORA [Internet]. NYSORA. 2019 [cited 14 September 2019]. Available from: <https://www.nysora.com/foundations-of-regional-anesthesia/patient-management/monitoring-documentation-consent-regional-anesthesia-procedures/>

Regional Anesthesia Procedure Form

Date: _____ Time Out (time): _____

Consult/Block Requested By: _____ Patient Identification Sticker

Pre-op Diagnosis: _____

Surgical Procedure: _____

Purpose of Block: Surgical Postop Pain

Block Procedure Location: _____ Side: _____

Monitors	Pre-medication	Level of Sedation/Anesthesia
Full ASA monitoring: <input type="checkbox"/>	Midazolam (mg): _____	No sedation: <input type="checkbox"/>
Oxygen by: _____	Fentanyl (mcg): _____	Sedated, easily arousable, conversant: <input type="checkbox"/>
Other: _____	Alfentanil (mcg): _____	Deep sedation/general anesthesia: <input type="checkbox"/>
	Other: _____	Neuraxial Anesthesia in situ: <input type="checkbox"/>

Block Procedure: _____ Ultrasound Guidance: (76942)

Technique: single injection continuous nerve-stimulator guided landmark-based

Needle/Catheter: _____

Type/Size: _____

Local Anesthetic & Additives:

Type/Concentration: _____

Volume: _____ mL

Procedure Notes:

Skin anesthetized with local anesthetic Patient Position: _____

Needle depth: _____ cm Minimal current: _____ mA Motor response: _____ No response <0.2 mA

If ultrasound guided: In-plane Out-of-plane Local anesthetic directly observed spreading adjacent to nerve

Catheter tip location confirmed by: Ultrasound Motor stimulation Depth at skin: _____ cm

Blood aspirated: _____ Action taken: _____

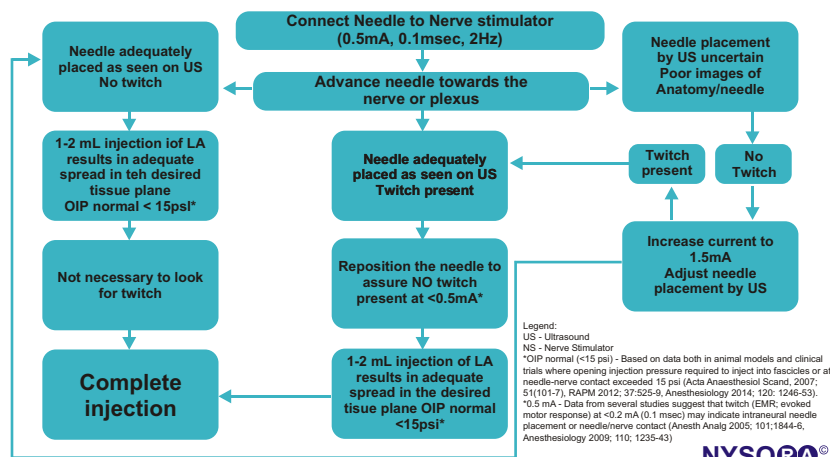
Pain on injection: _____ Action taken: _____

Injection pressure >15 psi: _____ Action taken: _____

Other notes: _____

Resident/Fellow: _____ Signature: _____ Date: _____ Time: _____

Attending: _____ Signature: _____ Date: _____ Time: _____



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PSA KARACHI ACADEMIC CALENDER 2019-2020

S.No	Event	Institute	Date
01	USG Vascular Access	Ziauddin Hospital Clifton	February 23, 2019
02	Workshop on Airway Management	NICVD	April 17, 2019
03	BASIC course	The Indus Hospital, Karachi	April 24 – 25, 2019
04	Initial Pain Management & IV Cannulation	Ziauddin Hospital Clifton	May 04, 2019
05	Mechanical Ventilation Workshop	NICVD	August 01, 2019
06	67 th PG Course	Dr Ruth KM Pfau CHK	Aug 18 – Sep 05, 2019
07	USG Central Venous Access	LNHMC	September 1, 2019
08	World Sepsis Day	Mariott Hotel, PSSCM & PSA	September 13, 2019
09	BASIC course	Ziauddin Hospital Clifton	September 21 – 22, 2019
10	Health Asia Anaesthesia Symposium	Expo Center, PSA	September 24, 2019
11	Pain Assessment in critically ill patients	AKUH	October 05, 2019
12	Symposium for Paramedics	AKUH	October 21, 2019
13	Pre-SAARCAA Workshops		
14	Cadaveric - USG peripheral Nerve Blocks	Ziauddin Hospital Clifton	March 03, 2019
15	USG Truncal Blocks	The Indus Hospital, Karachi	October 02, 2019
16	USG Regional Anaesthesia	LNHMC	October 06, 2019
17	USG Lower Limb Nerve blocks	Dr Ruth KM Pfau CHK	October 07 - 08, 2019
18	13 th CRITICON- Critical Care Medicine Congress	Dr Ruth KM Pfau CHK	December 07 – 08, 2019
19	USG Truncal Blocks and POCUS	The Indus Hospital, Karachi	January 16, 2020
20	Anaesthesia & Critical Care Symposium	The Indus Hospital, Karachi	January 19, 2020
21	6 th PG Course	The Indus Hospital, Karachi	Last week of January



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Pre SAARCAA Satellite Academics in Karachi



World Sepsis Day 2019



17th Health Asia Symposium on Safe Anaesthesia in Obstetric Emergencies



Pre-SAARCAA Workshops



PSA Karachi Cabinet Meetings

